Anxiety and Depression in Children and Young People with Life-Limiting Conditions

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PhD

University of York
Health Sciences

March 2021

Abstract

Children and young people with life-limiting conditions experience various challenges, which may make them more vulnerable to anxiety and depression. This thesis investigates the prevalence, incidence and associated factors of anxiety and depression in children and young people with life-limiting conditions.

Two systematic reviews were conducted; a meta-analysis of the prevalence and incidence of anxiety and depression in children and young people with life-limiting conditions, and a best evidence synthesis of the factors associated with anxiety and depression in this population. These reviews informed a comparative cohort study, which used data from the Clinical Practice Research Datalink (CPRD) and linked datasets to investigate the incidence of and risk factors for anxiety and depression in 5,527 with life-limiting conditions, 6,729 with chronic conditions and 13,057 with no long-term conditions.

The meta-analysis reported a higher pooled prevalence of anxiety and depression in children and young people with life-limiting conditions compared to prevalence estimates found in the general population. No relevant studies of anxiety or depression incidence were found. The best evidence synthesis identified conflicting evidence for associations between most of the sociodemographic factors investigated and anxiety/depressive symptoms, as well as limited evidence for the protective role of coping style.

Findings from the CPRD analysis indicated that the incidence of anxiety and depression was highest among children and young people with chronic conditions, followed by those with life-limiting conditions, with the lowest incidence observed among those with no long-term conditions. In all three condition groups, the incidence of anxiety and depression was associated with female sex, older age, ethnicity, and maternal mental health conditions. These findings have important implications for the provision and targeting of psychological support for these children and young people in order to improve their mental health.

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Acknowledgements

There are so many people to whom I am immensely grateful for their help in enabling me to complete this PhD. First, I would like to give huge thanks to my supervisors, Prof Lorna Fraser and Prof Bryony Beresford, for their continued guidance, support and encouragement throughout my PhD. I would also like to thank the members of my Thesis Advisory Panel (Dr Jo Taylor, Dr Roger Parslow and Dr Jan Aldridge) for their help and enthusiasm in my research. I am also very grateful to the Martin House Research Centre for providing the funding to enable me to carry out my PhD research. The Martin House Research Centre and the Department of Health Sciences as a whole has been an excellent place to undertake my PhD, and I acknowledge all of the colleagues that I had the pleasure of working with or meeting. In addition, I would like to thank Liam Robson for second screening the articles for my systematic reviews.

Importantly, my fellow PhD students have been an immense help to me throughout the PhD process; in particular, I would like to give enormous thanks to Kate Mooney, Sophie Moxon, Victoria Fisher and Louise Shepperd for being the most brilliant support system that I could have asked for. Last but not least, I would like to thank my family and friends, especially my parents, for always supporting me, believing in me and inspiring me. A special thanks goes to my Mum for always being there for me and never letting me doubt myself.

Author's Declaration

I declare that this thesis is a presentation of original work and I am the sole author. This work has not previously been presented for an award at this, or any other, University. All sources are acknowledged as references.

Parts of this thesis have been disseminated in the following publication and presentations:

Publication

Barker, M. M. Beresford B., Bland M. and Fraser L.K. (2019). Prevalence and Incidence of Anxiety and Depression among Children, Adolescents, and Young Adults with Life-Limiting Conditions: A Systematic Review and Meta-analysis. *JAMA Pediatrics*, American Medical Association, 173(9).

Conference Presentations

'Anxiety and depression in children and young people with life-limiting conditions'

Presented at:

- Association for Paediatric Palliative Medicine (APPM) Research Day, 14 November 2019, London

'Prevalence and incidence of anxiety and depression among children, adolescents and young adults with life-limiting conditions: a systematic review and meta-analysis'

Presented at:

- Fondazione Maruzza Lefebvre D'Ovidio Onlus 4th Maruzza Congress on Paediatric Palliative Care, 25 October 2018, Rome
- Nottingham Centre for the Advancement of Research into Supportive, Palliative and End-of-life Care (NCARE), 21 June 2018, Nottingham
- Martin House Research Centre 2018 Conference, 21 September 2018, York (poster)

Chapter 1: Background

This thesis reports an investigation into anxiety and depression in children and young people with life-limiting conditions. The studies included in this thesis assessed both the prevalence and incidence of anxiety and depression, and the factors associated with anxiety and depression in this population group. This chapter provides the contextual background, reporting existing evidence on the epidemiology of life-limiting conditions, anxiety, and depression. The potential vulnerability of children and young people with life-limiting conditions to anxiety and depression will then be explained, and the gaps in the existing evidence described. The aims and objectives of the research conducted for this thesis are set out at the end of the chapter. The term 'children and young people' will be used throughout this thesis to refer to children, adolescents and young adults, as outlined by the United Nations (United Nations, 2021).

1.1 Life-Limiting Conditions

The umbrella term 'life-limiting conditions' is used to describe both life-limiting conditions, where there is "no reasonable hope of cure and from which children or young people will die", for example Duchenne muscular dystrophy or Batten disease, and life-threatening conditions, those in which "curative treatment may be feasible but can fail", such as cancer or organ failure (Together for Short Lives, 2018, p.10). The important distinction between these conditions and other chronic physical illnesses diagnosed in childhood, such as diabetes or asthma, is the likelihood of death during childhood or young adulthood. The concept of life-limiting conditions was defined in 1997 by the Royal College of Paediatrics and Child Health and the Association for Children's Palliative Care by outlining four different types of life-limiting conditions (Hain et al., 2013). The definitions of these categories have more recently been updated and are displayed in Figure 1. In 2013, Hain et al. created a directory of life-limiting conditions by mapping these four categories to the diagnoses of patients who received care from hospices or palliative care services in the UK. This resulted in a list of 376 diagnoses classified as life-limiting conditions (Hain et al., 2013).

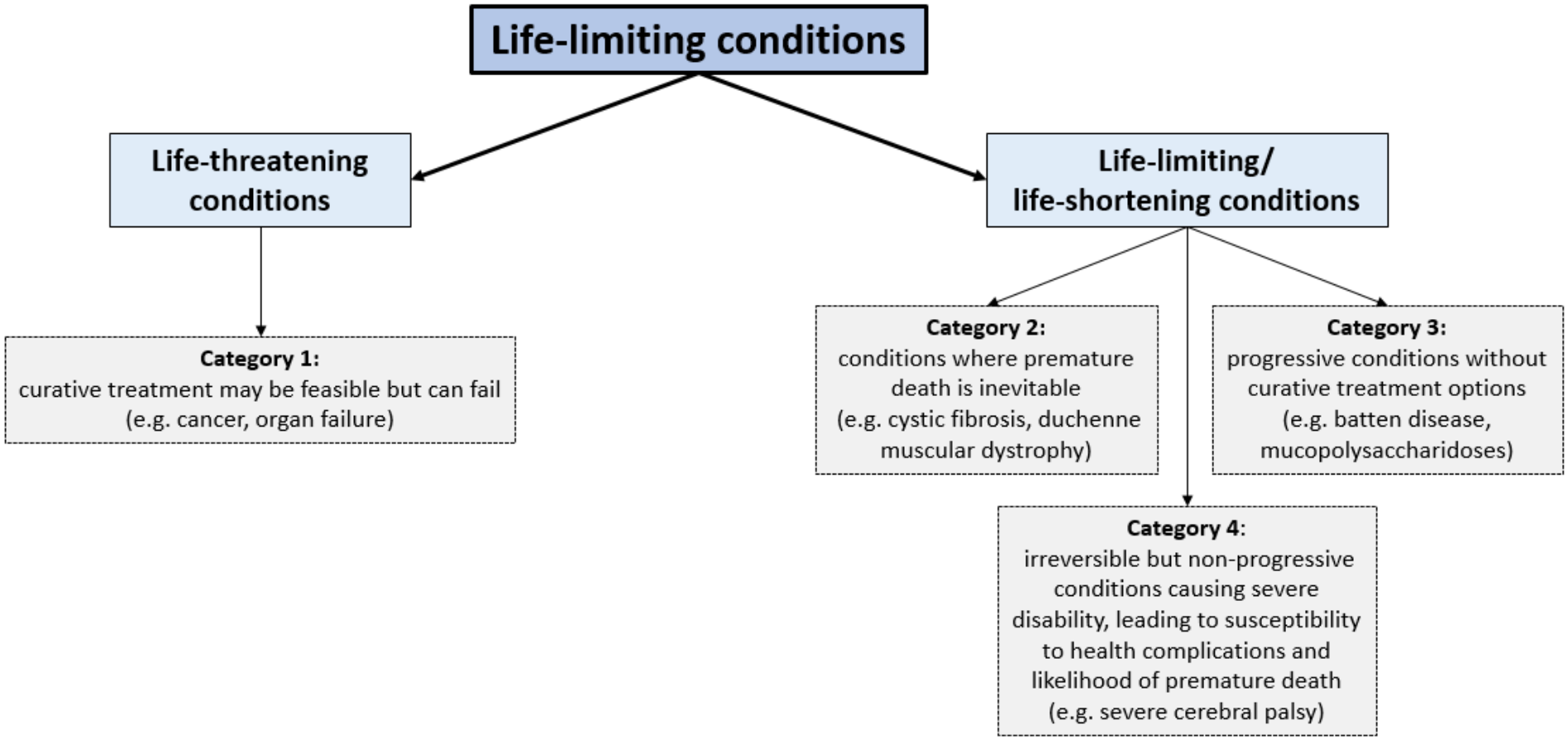

Figure 1. Categories of life-limiting conditions (Together for Short Lives, 2018)

Although the term ‘life-limiting conditions’ is widely used in the UK and will be used in the remainder of this thesis, it is worth noting that the terminology used to describe such conditions does vary by country. For example, ‘complex chronic conditions’ is used in countries such as the US, defined as (Feudtner, Christakis and Connell, 2000, p.206):

> any medical condition that can be reasonably expected to last at least 12 months (unless death intervenes) and to involve either several different organ systems or one organ system severely enough to require specialty pediatric care and probably some period of hospitalization in a tertiary care center.

This definition was used by Feudtner and colleagues to search death certificate data in order to generate a list of complex chronic conditions; many of the diagnoses in this list are also classified as life-limiting conditions in the UK (Feudtner, Christakis and Connell, 2000).

Over the last two decades, the prevalence of life-limiting conditions in the UK has greatly increased. In England, prevalence figures among 0 to 19 year olds increased from 26.7 per 10,000 in 2000/2001 to 66.4 per 10,000 in 2017/18 (Fraser et al., 2020a). The prevalence of life-limiting conditions among 0 to 21 year olds in Scotland also increased from 31.7 per 10,000 in 2003/04 to 44.3 per 10,000 in 2014/15 after which the increase in prevalence slowed, with a prevalence of 45.0 per 10,000 recorded in 2018/19 (Public Health Scotland, 2020). Although both countries saw an increase in prevalence across all life-limiting condition diagnostic groups, the largest increase in prevalence was observed for perinatal disorders in England and genitourinary diagnoses in Scotland (Fraser et al., 2020a, Public Health Scotland, 2020). Although increased survival may account for some of the observed increase in prevalence, data from England has shown an increased incidence in the recording of life-limiting conditions between 2001 and 2017 (Fraser et al., 2020a). However, it is unclear whether this increase in incidence translates to a true increase in the number of children and young people being diagnosed with a life-limiting condition or whether it reflects changes in coding practices, resulting in increased recording of life-limiting condition diagnoses (Fraser et al., 2020a).

All of the aforementioned studies from England and Scotland found congenital anomalies, structural or functional abnormalities that occur prenatally (e.g. congenital heart disease) to be the most prevalent life-limiting condition diagnosis (Fraser et al., 2020a, Fraser et al., 2015, Fraser et al., 2012, Public Health Scotland, 2020). This was also reported in a study examining referrals to paediatric palliative care in the US and Canada (Feudtner et al., 2011). A recent study of healthcare utilisation by children and young people with life-limiting conditions in South Korea, however, reported cancer to be the most common condition, accounting for over 25% of the identified sample (Friedel et al., 2019, Kim et al., 2020). These differences are likely to be the result of both the sampling strategy and data collection methods used in each study, in addition to international variations in the categorisation of life-limiting condition diagnoses. Importantly, the proportion of children with life-limiting conditions who are living with more than one life-limiting condition in the UK has increased over time from 15.6% in 2001/02 to 28.4% in 2017/18 (Fraser et al., 2020a). This trend has also been observed in the US (Bjur et al., 2019).

The prevalence of life-limiting conditions is highest among children under the age of one year; in 2017/18 in England the prevalence in this age group was 226.5 per 10,000 (Fraser et al., 2020a). The mortality rate is also highest in this age group, accounting for 45% of all deaths among children with life-limiting conditions in England (Fraser et al., 2020a). Boys have a significantly higher prevalence of life-limiting conditions than girls, as shown by prevalence figures from England and Scotland, in addition to a recent study conducted in South Korea (Fraser et al., 2020a, Kim et al., 2020, Public Health Scotland, 2020). Data from England and Scotland have also shown that children and young people of South Asian ethnicity, particularly those from Pakistani backgrounds, have the highest prevalence of life-limiting conditions (Fraser et al., 2020a, Fraser et al., 2012, Public Health Scotland, 2020). Furthermore, the prevalence of life-limiting conditions is higher in children and young people living in more deprived areas (Fraser et al., 2020a, Public Health Scotland, 2020).

1.2 The Mental Health of Children and Young People

The WHO (World Health Organization, 2018) defines mental health as:

> a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community.

Mental health conditions, therefore, can be defined as conditions which involve changes in an individual's thinking, emotions or behaviour which cause significant distress or impairment of functioning (American Psychiatric Association, 2018, NHS Digital, 2018b).

Mental health conditions are the leading cause of global disability (Whiteford et al., 2013). Childhood and adolescence represents a particularly high-risk period for the development of mental health conditions, which affect 10 to 20% of children and adolescents worldwide (Kieling et al., 2011). The potential impacts of mental health conditions in children and young people are wide-ranging, including impairments in life satisfaction, family functioning, social functioning, and academic performance (Agnafors, Barmark and Sydsjö, 2020, Swan and Kendall, 2016, Verboom et al., 2014). Importantly, these conditions can persist long into adulthood; 75% of long-term mental health conditions experienced by adults emerge before the age of 24 years (Jones, 2013, Kessler et al., 2005, Lahey et al., 2014). In addition to the disease burden faced by the individual and the associated increased mortality risk, the presence of mental health conditions also incurs great economic costs to the individual and wider society (Knapp et al., 2016, Walker, McGee and Druss, 2015, Whiteford et al., 2013). For example, young people with a mental health condition are significantly less likely to be in employment, education or training, and significantly more likely to be on welfare benefits (Knapp et al., 2016). Therefore, the prevention and treatment of these conditions, beginning in childhood, is both a moral and economic necessity for the individual and society as a whole (Knapp et al., 2016).

This thesis focuses on anxiety and depression, both of which are common among children and young people and rank in the top ten causes of global disability (NHS Digital, 2018b, World Health Organization, 2017).

1.2.1 Anxiety and Depression

The two main classification systems used by healthcare professionals to diagnose anxiety and depression are the International Classification of Diseases (ICD), and the Diagnostic and Statistical Manual of Mental Disorders (DSM). An understanding of both classification systems is important for this thesis, which includes reviews of international literature. The International Classification of Diseases (ICD) is used in numerous countries, including the UK, whereas the Diagnostic and Statistical Manual of Mental Disorders (DSM) is primarily used in the US. The Diagnostic and Statistical Manual of Mental Disorders (DSM) offers a definition common to all anxiety disorders, whereby these disorders involve *"excessive fear and anxiety and related behavioural disturbances"* and *"differ from developmentally normative fear or anxiety by being excessive or persisting beyond developmentally appropriate periods"* (American Psychiatric Association, 2013, p.189). Although both classification systems define each specific type of anxiety disorder, the International Classification of Diseases (ICD) also differentiates between two categories of anxiety disorders. These categories include "Phobic anxiety disorders", such as agoraphobia and social phobias, in which anxiety manifests in particular well-defined situations, and "Other anxiety disorders", such as generalised anxiety disorder, in which anxiety is persistent and not restricted to particular environmental situations (World Health Organization, 2019). Another difference between the two classification systems is the required time period that symptoms must have been present in order for a diagnosis of anxiety to be made. Whilst no such time period is defined in the International Classification of Diseases (ICD), according to the Diagnostic and Statistical Manual of Mental Disorders (DSM), in the case of most anxiety disorders, anxiety symptoms must have been present for at least six months in order for a diagnosis to be given (American Psychiatric Association, 2013).

The Diagnostic and Statistical Manual of Mental Disorders (DSM) defines depressive disorders as disorders characterised by *"the presence of sad, empty, or irritable mood, accompanied by somatic and cognitive changes that significantly affect the individual's capacity to function"* (American Psychiatric Association, 2013, p.155). The International Classification of Diseases (ICD) characterises "Depressive episodes", which can range from mild to severe, as episodes which include symptoms such as low mood, reduced

capacity for enjoyment, interest and concentration, reduced energy and activity, and disturbed sleep (World Health Organization, 2019). Repeated episodes of depression are defined in the International Classification of Diseases (ICD) as "Recurrent depressive disorder". The Diagnostic and Statistical Manual of Mental Disorders (DSM), however, uses the umbrella term "Major depressive disorder" to refer to all single and recurrent episodes of depression, regardless of severity (American Psychiatric Association, 2013).

Symptoms of both anxiety and depression can co-occur in children and young people, with comorbidity estimates of at least 15% (Cummings, Caporino and Kendall, 2014, Garber and Weersing, 2010). This is recognised by the International Classification of Diseases (ICD) using the term "mixed anxiety and depressive disorder". As the definitions for anxiety and depression in the International Classification of Diseases (ICD) and Diagnostic and Statistical Manual of Mental Disorders (DSM) are not specific to children, diagnosing clinicians must pay particular consideration to the developmental stage of the child and to what degree their emotional state aligns with this (American Psychiatric Association, 2013, World Health Organization, 1992).

1.2.2 Epidemiology of Anxiety and Depression

Studies of the epidemiology of anxiety and depression among children and young people in both the UK and internationally have consistently shown that the prevalence of anxiety is higher than the prevalence of depression (Ghandour et al., 2019, NHS Digital, 2018b, Polanczyk et al., 2015). A meta-analysis of 41 studies assessing anxiety and depression prevalence in children and young people aged 4 to 18 years from 27 countries, covering every world region, found the pooled prevalence of anxiety to be 6.5% (95% CI: 4.7%-9.1%), whilst the pooled prevalence of depression was 2.6% (95% CI: 1.7%-3.9%) (Polanczyk et al., 2015). These figures are also similar to the most up-to-date epidemiological data from England regarding the prevalence of anxiety and depression among 5 to 19 year olds, which come from the national 2017 Mental Health of Children and Young People Survey (NHS Digital, 2018a). This survey reported the prevalence of anxiety to be 7.2% (95% CI: 6.6%-7.9%) and the prevalence of depression to be 2.1% (95% CI: 1.7%-2.5%). The 2016 US National Survey of Children's Health (NSCH), which included 3 to 17 year olds also reported similar prevalence estimates; 7.1% for anxiety and 3.2% for depression (Ghandour et al., 2019). Both

surveys found substantial differences in anxiety and depression prevalence across different age groups, whereby prevalence increased with age. For example, the English 2017 Mental Health of Children and Young People Survey reported anxiety prevalence to be 3.9% in 5 to 10 year olds, 7.9% in 11 to 16 year olds, and 13.1% in 17 to 19 year olds (NHS Digital, 2018a). Data from this survey also found that depression prevalence increased from 0.3% in 5 to 10 year olds to 4.8% in 17 to 19 year olds (NHS Digital, 2018a).

Epidemiological data have shown an increase in the prevalence of anxiety and/or depression among children and young people in the last few decades (Bitsko et al., 2018, Bor et al., 2014, Mojtabai, Olfson and Han, 2016, NHS Digital, 2018c). However, it is unclear whether this reflects a true increase in the prevalence of these conditions or whether a greater understanding and awareness of these mental health conditions has increased the numbers of children and young people who report symptoms of anxiety or depression (Bor et al., 2014).

1.2.3 Recognition and Diagnosis of Anxiety and Depression in Children and Young People

In order for a diagnosis of anxiety or depression to be made these mental health symptoms must first be recognised. The recognition of such symptoms can involve multiple individuals such as family members, teachers, and the young person themselves. The next step towards a diagnosis is the involvement of a medical professional; in the UK this usually means visiting a GP (O'Brien et al., 2017). Finally, the GP must assess these symptoms and either give the appropriate diagnosis and treatment or provide a referral to more specialist psychological support. However, at each of these stages, challenges can be present, the most common of which have been identified by various systematic reviews.

A systematic review of the key barriers which can prevent parents from accessing psychological treatment for their child or young person reported that a parent's lack of knowledge or understanding of their child's symptoms, their severity or associated impacts can all act as barriers to seeking help (Reardon et al., 2017). Other barriers include a parent's lack of knowledge or understanding of where or how to access help for their child, the stigma that can be associated with mental health and mental health

services, as well as potential language or cultural barriers (Reardon et al., 2017). However, the recognition of anxiety or depressive symptoms by other family members, friends or teachers in schools can aid in the process of seeking mental health support (Reardon et al., 2017, Splett et al., 2019). Children and young people themselves can be reluctant to seek support, however, which can act as a further barrier to this process (Reardon et al., 2017). A recent systematic review identified the most common reasons for children and young people not wanting to seek psychological support, which included perceived stigma and embarrassment, confidentiality concerns, and doubts regarding the effectiveness of treatment (Radez et al., 2020).

GPs can also face challenges when attempting to diagnose and manage anxiety and depression in children and young people. These include a perceived lack of mental health training and knowledge, in addition to a lack of tools necessary to diagnose these mental health conditions (O'Brien et al., 2016). The National Institute for Health and Care Excellence in England and Wales (NICE) provides guidelines for the identification of mental health conditions in children and young people. However, aside from social anxiety disorders, for which detailed assessment recommendations are provided, no specific guidance for the detection of other anxiety disorders in children and young people is given (National Institute for Health and Care Excellence (NICE), 2013, 2014b). Similarly, no guidance is available regarding which screening tools are recommended for the assessment of depression in children and young people (National Institute for Health and Care Excellence (NICE), 2019a).

1.2.4 Risk Factors for Anxiety and Depression in Children and Young People

The development of anxiety and depression is influenced by various interdependent factors, including age, sex, parental mental health conditions, ethnicity, socioeconomic status, adverse childhood experiences, coping style and childhood temperament. These universal risk factors will be discussed in turn before considering risk factors specifically relevant to children and young people with chronic or life-limiting conditions.

The prevalence of anxiety and depression increases as children get older. For example, the 2017 English Mental Health of Children and Young People Survey found that the

prevalence of anxiety among 17 to 19 year olds (13.1%) was over three times higher than that observed among 5 to 10 year olds (3.9%). Similarly, the prevalence of depression increased from 0.3% in 5 to 10 year olds to 4.8% in 17 to 19 year olds (NHS Digital, 2018a). Overall, girls are at higher risk of experiencing anxiety or depression than boys, as shown by prevalence figures from the aforementioned survey which reported that 10.0% of girls experienced either anxiety or depression compared to 6.2% of boys. However, the effect of sex is moderated by age. Among children aged 5 to 10 years old, the prevalence of anxiety and depression is marginally higher in boys compared to girls. Above the age of 10, however, girls are more likely to experience anxiety or depression than boys, and by the age of 17 to 19 years, the prevalence of anxiety or depression is three times higher in girls (22.4%) compared to boys (7.9%) (NHS Digital, 2018a).

The presence of parental mental health conditions is another risk factor for anxiety and depression in children and young people, as shown by several meta-analyses (Goodman et al., 2011, Lawrence, Murayama and Creswell, 2019, Micco et al., 2009, Rasic et al., 2014). For example, a meta-analysis of 33 studies reported that offspring of parents with a severe mental illness (schizophrenia, bipolar disorder or major depressive disorder) had approximately double the risk of developing anxiety or depression compared to offspring of parents without a mental health condition (Rasic et al., 2014). Similarly, the risk of children and young people developing anxiety or depression was markedly increased if their parents had anxiety, as shown by two meta-analyses (Lawrence, Murayama and Creswell, 2019, Micco et al., 2009).

The prevalence of anxiety and depression has also been found to differ according to ethnicity. For example, the aforementioned English survey conducted in 2017 reported the prevalence of anxiety in White British children (8.1%) to be more than double the prevalence observed among Asian children (3.8%) (NHS Digital, 2018a). This large difference in prevalence between White and Asian children was also found in the earlier versions of the English survey in 1999 and 2004 (NHS Digital, 2005). However, it is unknown to what extent these figures represent a true difference in prevalence as opposed to differences in the reporting of symptoms due to cultural factors such as the high levels of stigma surrounding mental health in certain communities (Sharma, Shaligram and Yoon, 2020).

Socioeconomic disadvantage is another important risk factor for the development of anxiety and depression among children and young people. In fact, systematic reviews have shown that children and young people with low socioeconomic status are two-to-three times more likely to experience anxiety or depression than those with a higher socioeconomic status (Lemstra et al., 2008, Reiss, 2013). One of these reviews also investigated the effect of age and sex on the association between socioeconomic status and anxiety/depression. Sex was not found to affect the association, however the relationship between socioeconomic disadvantage and anxiety/depression was stronger among children aged 12 and younger, compared to older children (Reiss, 2013).

Adverse childhood experiences, such as child maltreatment or bullying, also greatly increase the risk of anxiety and depression in children and young people (Mills et al., 2013, Stapinski et al., 2014, Undheim, Wallander and Sund, 2016). For example, one large cohort study found that victims of frequent bullying had more than twice the risk of developing anxiety (Stapinski et al., 2014). A recent study of over 39,000 children and young people from the USA found that other adverse childhood experiences, namely parental separation/divorce/death, household dysfunction, exposure to violence or economic hardship also significantly increased the risk of anxiety and depression (Elmore and Crouch, 2020).

Coping style, the strategies used by individuals when responding to and managing stress, is an important psychological factor which can increase or decrease the risk of a child or young person developing anxiety or depression (Herres, 2015). More specifically, adaptive coping styles such as acceptance can act as a protective factor against the development of anxiety or depressive symptoms in children and young people, while maladaptive styles such as avoidance can increase the risk of these symptoms, as shown by a large systematic review (Schäfer et al., 2017). Importantly, coping style can also moderate the association between adverse childhood experiences and anxiety/depression (Evans et al., 2015, Lewis, Byrd and Ollendick, 2012, Undheim, Wallander and Sund, 2016).

Childhood temperament has also been found to be associated with the subsequent development of anxiety or depression (Davis, Votruba-Drzal and Silk, 2015, Forbes et

al., 2017, Letcher et al., 2012). For example, a large cohort study measured various temperamental characteristics in children aged 4 to 5 years, and symptoms of anxiety and depression when the children were 12 to 13 years of age. The findings revealed that children who displayed higher levels of 'negative reactivity', representing the intensity of a child's response to frustration, feelings of irritability and other negative emotions, reported significantly higher levels of anxiety and depressive symptoms in adolescence. In addition, children who were less outgoing in new situations and with new people also reported higher levels of anxiety symptoms in adolescence (Forbes et al., 2017).

In addition to these universal risk factors, there are also some risk factors that are particularly pertinent to this thesis, the first of which is the presence of chronic physical conditions. The largest meta-analysis investigating anxiety in children and young people with chronic physical conditions, which included 332 studies, found that these children and young people experienced higher levels of anxiety symptoms than those without a chronic condition (Pinquart and Shen, 2011a). A separate meta-analysis of 340 studies found similar results for symptoms of depression (Pinquart and Shen, 2011b). This has been further supported by a recent systematic review of anxiety prevalence in children and young people with chronic conditions (Cobham et al., 2020). However, only five of the 53 studies included in this review were longitudinal, all of which had very small sample sizes. Therefore, the temporality of the association between the diagnosis of a chronic condition and the development of anxiety could not be ascertained. However, two large longitudinal studies have recently been conducted, one in the US (n=48,572) and one in the UK (n=14,701), both of which showed that children and young people with chronic conditions were at increased risk of anxiety and depression (Adams, Chien and Wisk, 2019, Brady, Deighton and Stansfeld, 2020). The various potential reasons for the increased prevalence of anxiety and depression among children and young people with chronic conditions will be discussed in the next section.

A second additional risk factor relevant to children and young people with life-limiting conditions is intellectual disability. This is a core component of some life-limiting conditions, particularly neurological conditions (Astrea et al., 2016, Ekmekci, 2017, Feudtner et al., 2011, Rae and O'Malley, 2016). Findings from a systematic review

suggested a markedly higher prevalence of mental health conditions, such as anxiety and depression, among children and young people with intellectual disability compared to those without intellectual disability (Einfeld, Ellis and Emerson, 2011). The risk may be even higher if the child or young person also has a chronic physical condition (Oeseburg et al., 2010). However, severity of the intellectual disability may affect the observed prevalence of anxiety and depression. For example, a meta-analysis of 21 studies reported that children and young people with borderline intellectual disability had a significantly higher prevalence of depression than those with moderate or severe intellectual disability (Maiano et al., 2018). This may be due to the challenge of detecting mental health conditions in individuals with severe intellectual disability, who often do not have the cognitive and communicative capacity to self-report their emotions using normative methods. This is a very underdeveloped research area, therefore the ways in which parents, researchers and clinicians can reliably identify the individual's emotional needs through behavioural and physiological indicators needs further investigation (Vos et al., 2012).

1.3 The Mental Health of Children and Young People with Life-Limiting Conditions

As previously mentioned, existing evidence indicates that the presence of a chronic physical condition increases the likelihood of children and young people experiencing mental health conditions such as depression and anxiety. It is widely accepted that this is largely due to the numerous challenges that having a chronic condition brings, which are also experienced by children and young people with life-limiting conditions. For example, children and young people with either life-limiting or chronic conditions are likely to experience unpleasant and distressing symptoms such as pain and fatigue (Abbott and Carpenter, 2014, Chong et al., 2016, Greenley et al., 2010, Hedström, Ljungman and von Essen, 2005). Treatments for both chronic and life-limiting conditions may also have negative side effects including changes in physical appearance, such as changes in weight or hair growth, highlighting the differences between them and their peers (Greenley et al., 2010, McCaffrey, 2006). This can be particularly difficult during adolescence, when individuals can feel a strong necessity to 'fit in' with peers, and their self-esteem is largely predicted by the level of peer approval that they receive (Gruenenfelder-Steiger, Harris and Fend, 2016).

These feelings of being different to peers may be exacerbated in some children and young people with chronic or life-limiting conditions by frequent absences from school due to disease-related symptoms, treatment side-effects or hospitalisations (Hedström et al., 2003, Jamieson et al., 2014, Tjaden et al., 2012). Not only does this make it more difficult for friendships to be established and maintained, but it can also interfere with the child's academic progress, which may lead to feelings of frustration and embarrassment (Jamieson et al., 2014, Tjaden et al., 2012). Social isolation can also arise from children feeling different from their peers, who may not understand their disease experience (Chao et al., 2016, Knight et al., 2016). Indeed, loneliness has been found to be more commonly experienced by children and young people with chronic and life-limiting conditions compared to their 'well' peers (Maes et al., 2017).

Many chronic and life-limiting conditions necessitate complex and time-consuming disease management regimens (Bucks et al., 2009, Chao et al., 2016). The requirements of these regimens can impact how a child or young person is able to spend their free time, limiting opportunities for socialisation with friends, for example, and can interfere with the typical transition to independence and autonomy hoped for by many adolescents, as parents and carers may want or need to provide assistance by, for example, helping with chest physiotherapy or other treatment regimens (Epelman, 2013, Sawicki et al., 2015, Tjaden et al., 2012). Although some young people prefer to rely on their parents to help them manage their treatment regimens, others want to take more responsibility for their treatment and parental overprotectiveness may cause conflict in the parent-child relationship (Epelman, 2013, Jamieson et al., 2014, Tjaden et al., 2012). The reduced physical functioning associated with some conditions, such as cerebral palsy, may mean that children and young people are reliant on others for daily activities such as self-care and mobility which can lead to feelings of frustration and isolation (Lindsay, 2016).

Illness uncertainty is another major challenge experienced by children and young people with life-limiting or chronic conditions due to uncertainty surrounding the prognosis, treatment and the unpredictable nature of many of these conditions (Fortier et al., 2013, Knight et al., 2016). This uncertainty can also lead to feelings of worry and insecurity about career opportunities and the potential impact of their

condition on future romantic relationships and childbearing (Chao et al., 2016, Chong et al., 2016, Knight et al., 2016, Tunnicliffe et al., 2016).

Despite the existence of illness uncertainty in all of these conditions, a crucial difference in the experience of living with a life-limiting condition compared to a chronic condition is that children and young people with life-limiting conditions may be aware of the possibility or certainty of premature death. The fear of death reported by many children and young people with life-limiting conditions not only encompasses concerns of whether their death will involve pain and how long the suffering will last, but also existential worries such as questioning whether they will be remembered and what the meaning of their life has been (Garvie et al., 2012, Higham, Ahmed and Ahmed, 2013, Namisango et al., 2019). Similarly, the death of a friend with a similar condition can be particularly hard for these children and young people as it can remind them of their condition and shortened life-span (Abbott and Carpenter, 2014, Beerbower, Winters and Kondrat, 2018).

The presence of these additional challenges suggests that children and young people with life-limiting conditions may be even more vulnerable to anxiety and depression than those with chronic conditions. Indeed, the necessity of research examining the epidemiology of mental health conditions in children and young people with life-limiting conditions has been identified in England and Wales by the National Institute for Health and Care Excellence (NICE) recommendations for research regarding end of life care for infants, children and young people with life-limiting conditions (National Institute for Health and Care Excellence (NICE), 2019b). These recommendations highlight the need for research to enable a more comprehensive understanding of psychological issues in this population. The importance of this research to children and young people with life-limiting conditions, their families and professionals has also been reported in various research prioritisation exercises relating to the care of children and young people with life-limiting conditions (Booth et al., 2018, James Lind Alliance, 2020a, b).

Previous research investigating anxiety and depression in children and young people with life-limiting conditions is limited by the fact that studies have only focused on specific conditions, such as cystic fibrosis (Quittner et al., 2014) or cancer (Bemis et al.,

2015). Therefore, the epidemiology of anxiety and depression across the whole patient population is currently unknown. As paediatric palliative care services can support children and young people with any life-limiting condition, an understanding of the prevalence, incidence and risk factors for anxiety and depression among children and young people with life-limiting conditions as a whole population is crucial in order to inform service development and improvement (Hain et al., 2013).

1.4 Summary

The prevalence of children and young people with life-limiting conditions is increasing as individuals are living longer with these conditions. Mental health conditions, particularly anxiety and depression, are common among children and young people. Many interrelated factors are known to increase the risk of anxiety and depression in this age group, one of which is the presence of a chronic physical illness. This is likely to be due to several challenges that children and young people with a chronic condition may experience, such as distressing symptoms, treatment side-effects and complex treatment regimes, which can result in frequent absences from school. Consequently, children and young people with chronic conditions may find it difficult to maintain friendships, leading to feelings of frustration and isolation. Children and young people with life-limiting conditions can face all of these challenges, often to a greater degree, as well as living with the possibility of premature death. This has the potential to make them even more vulnerable to anxiety and depression. Previous research exploring anxiety and depression in this population has been limited to a small number of life-limiting conditions. Therefore, the epidemiology of anxiety and depression across the whole patient population is currently unknown, an understanding of which is important in order to inform the development of psychological care and preventative strategies for this population group.

1.5 Aims & Objectives

The aims of this thesis are as follows:

- To investigate the incidence and prevalence of anxiety and depression in children and young people with life-limiting conditions

- To examine what factors are associated with the incidence and prevalence of anxiety and depression in children and young people with life-limiting conditions

In order for this thesis to achieve these two aims, the following objectives will be met:

1. To conduct a systematic review and meta-analysis to estimate the prevalence and incidence of anxiety and depression in children and young people with life-limiting conditions from previously published literature (Chapter 2)

2. To conduct a systematic review to identify the factors that have been found to be associated with anxiety and depressive symptoms among children and young people with life-limiting conditions in previously published literature (Chapter 3)

3. To conduct a comparative cohort study using primary and secondary healthcare data from England to analyse the incidence of anxiety and depression in children and young people with life-limiting conditions and compare this to the incidence among those with chronic conditions and those with no long-term conditions (Chapters 4 and 5)

4. To conduct a comparative cohort study using primary and secondary healthcare data from England to examine what factors are associated with the incidence of anxiety and depression in children and young people with life-limiting conditions, and to explore whether these associations differ from those found among children and young people with chronic conditions and those with no long-term conditions (Chapters 4 and 5)

Chapter 2: Prevalence and Incidence of Anxiety and Depression Among Children and Young People with Life-Limiting Conditions: A Systematic Review and Meta-Analysis

2.1 Introduction

This chapter describes the research undertaken to meet the first objective outlined in Chapter 1:

- *To conduct a systematic review and meta-analysis to estimate the prevalence and incidence of anxiety and depression in children and young people with life-limiting conditions from previously published literature*

The review and meta-analysis described in this chapter was published in JAMA Pediatrics on 8th July, 2019 (Appendix 1) (Barker et al., 2019). The only modification to the chapter carried out after the publication of the meta-analysis was the removal of one study of depression prevalence (Andrinopoulos et al., 2011), as it was found that some of the participants included in this study were also included in a later study (Martinez et al., 2012).

2.2 Methods

This systematic review and meta-analysis is reported following the standards of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) and Meta-analysis of Observational Studies in Epidemiology (MOOSE) guidelines (Moher et al., 2010, Stroup et al., 2000). The systematic review protocol was registered on the PROSPERO database on 14th February 2018, prior to review initiation (identifier: CRD42018088795).

2.2.1 Search Strategy

The electronic databases EMBASE, Medline and PsycINFO were searched on 15th January 2018, identifying papers published from 1st January 2000 onwards. The search consisted of the following concepts: (children/adolescents/young adults) AND (anxiety/depression) AND (life-limiting conditions). All life-limiting condition diagnoses, as defined in the directory produced by Hain et al. in 2013, were included as search terms, using both subject headings and free text (Hain et al., 2013). The search strategy for Medline is displayed in Appendix 2. Reference lists of identified systematic reviews and all included articles were searched for additional eligible papers. Grey

literature was reviewed using an advanced Google search, utilising terms relating to the three concepts included in the database search strategy: (children/adolescents/young adults) AND (anxiety/depression) AND (life-limiting conditions). The first 50 PDFs identified by this search were screened for eligibility.

Studies were included if they:

1. provided primary data of anxiety or depression prevalence or incidence, measured using validated assessment tools or coded medical report data
2. included participants between the ages of 5-25 years
3. included participants diagnosed with a life-limiting condition
4. were published in English or subsequently translated into English
5. were conducted in a country within the Organisation for Economic Co-operation and Development (OECD)[1]

The following types of study designs were excluded:

1. case studies, case series, intervention studies, qualitative studies and systematic reviews
2. studies which included participants without life-limiting conditions, unless data was reported separately
3. studies of participants successfully treated for cancer

Studies investigating anxiety and depression in children and young people who were survivors of cancer were excluded, as set out in the exclusion criteria, as these individuals no longer face the likelihood of death at a young age, and therefore are not comparable to children and young people with existing life-limiting conditions.

2.2.2 Study Selection

The titles and abstracts of all studies were screened by the primary reviewer (MMB), with 20% also independently screened by a second reviewer (LR). Any discrepancies were resolved through discussion. Full texts of all studies deemed potentially eligible were retrieved and reviewed for eligibility by MMB, with the second reviewer independently reviewing 20%. For papers where key outcome data was missing, study

[1] OECD countries at time of search: Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States

authors were contacted. In the case of authors not replying to this request, the paper was not included. If more than one paper included the same study participants, the most recently published paper was kept in the review. Studies investigating the prevalence of anxiety or depression among children and young people with DiGeorge Syndrome were excluded as anxiety and depression are common components of this condition (Baker and Skuse, 2005).

2.2.3 Data Extraction

Data was extracted by MMB, using an extraction form piloted on three of the eligible studies (see Appendix 3 for data extraction form). Key study characteristics including country of study, study design, recruitment strategy, eligibility criteria, anxiety/depression assessment tool, age and sex were extracted. The number of participants fulfilling the study criteria for anxiety or depression was recorded, along with the study sample size, in order for the calculation of prevalence. For the calculation of incidence, the number of new cases was identified, and the person-time used was extracted.

2.2.4 Risk of Bias Assessment

The risk of bias of included studies was assessed using a tool specifically designed for assessing bias in prevalence studies (Hoy et al., 2012). This tool consists of ten questions, four of which assess external validity, focusing on aspects such as the study's sampling frame and sample selection. The second section of the tool, consisting of six questions, assesses internal validity, including the consistency of data collection methods and the reliability and validity of the study instrument used for measuring prevalence. All questions had two response options: 'low' or 'high' risk of bias. If a study did not report the information necessary to answer a particular question, then the study was assigned 'high' risk of bias for that question. Each study was then assigned a total score out of ten, corresponding to the number of 'high' risk of bias responses. Based on this score, each study was subsequently categorised as either *high* (total score $\geq$7), *moderate* (total score 4-6), or *low* (total score $\leq$3), as per previously published systematic reviews (Madigan et al., 2018, Taylor et al., 2014, Thomas et al., 2015).

2.2.5 Meta-Analyses

Meta-analyses were conducted to generate pooled anxiety and depression prevalence/incidence, using the *metaprop* command in STATA. Random effects meta-analyses were used due to high expected heterogeneity between studies. To stabilise variances, study data was first transformed using the double arcsine transformation (Barendregt et al., 2013). Study-specific confidence intervals were generated using the exact method. Heterogeneity was analysed using the I^2 statistic. When the results of a meta-analysis show heterogeneity, it is important to identify covariates that may explain this heterogeneity (Barendregt et al., 2013). This was first explored by conducting sub-group analysis, in which studies are stratified according to specific covariates that may be related to anxiety/depression prevalence, and each sub-group is analysed separately, in order to observe how the pooled prevalence differs in each stratified group. The following categorical covariates were used for sub-group analysis:

- life-limiting condition diagnostic group (cancer; cystic fibrosis; HIV; thalassemia; neurological conditions; chronic kidney disease)
- study location (Europe; USA)
- assessment tool (questionnaire; diagnostic interview)
- risk of bias (low; moderate)

Heterogeneity was further explored using univariate meta-regression models, whereby each covariate was entered as the independent variable, with the pooled prevalence as the dependent variable, in order to assess the association between the covariate and the pooled estimate. Models were generated for each of the aforementioned categorical study characteristics, in addition to the following quantitative study characteristics:

- sample size
- mean age
- percentage of female participants in the sample

Publication bias was assessed using funnel plots and Egger's test of bias. A significance level of $p<0.05$ was used throughout. STATA version 15.1 (StataCorp., College Station, TX, USA) was used for all analysis.

2.3 Results

The electronic search identified 21,305 articles, whilst four additional articles were identified through other sources. 14,866 of these articles were non-duplicates, as shown in the PRISMA flow diagram (Figure 2). Title and abstract screening resulted in the exclusion of 14,160 articles. The full texts of the remaining 706 articles were assessed for eligibility, with the exclusion of 670 studies. The most common reasons for exclusion of articles were:

- study population not in eligible range (n=248),
- no incidence/prevalence data provided (n=78),
- article not available in English (n=36)
- article format not eligible (e.g. conference abstract, dissertation etc.) (n=257)

The authors of three articles were contacted as the prevalence of anxiety in their articles included cases of Obsessive-Compulsive Disorder (OCD). OCD was not included as an anxiety disorder in this review, and overall thesis, as although anxiety can co-occur with OCD, obsessions and compulsions are the main feature of this condition (Stein et al., 2010). Accordingly, OCD is categorised separately from anxiety disorders in the International Classification of Diseases (World Health Organization, 2019). Therefore, studies that included cases of OCD when calculating the prevalence of anxiety could not be included in this review unless the author could provide the prevalence of anxiety without the inclusion of OCD cases. One of the three authors replied and their article was subsequently included (Adanır et al., 2017). The other two articles were excluded as no reply was provided; the reason for exclusion of these articles is displayed as 'no incidence/prevalence data provided' in Figure 2. This resulted in the inclusion of 36 articles, 19 reporting anxiety prevalence and 35 reporting depression prevalence. None of the included articles reported the incidence of anxiety or depression.

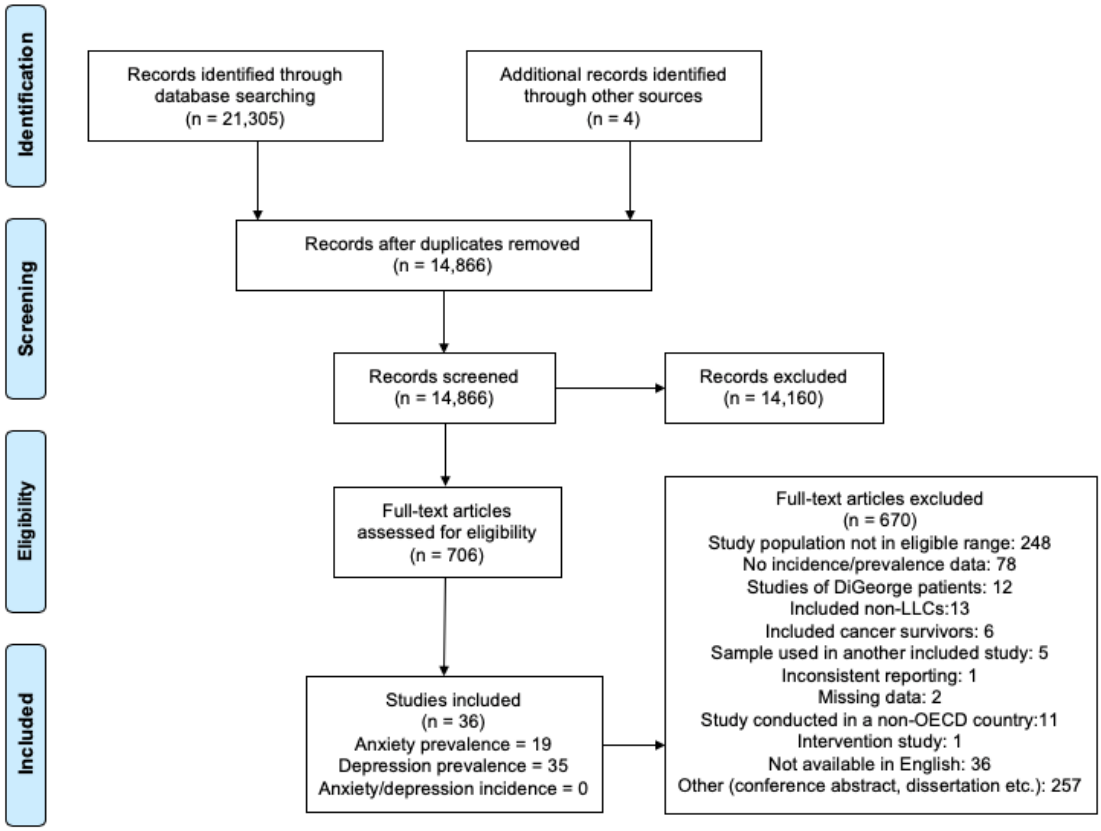

Figure 2. PRISMA Flow Diagram showing the inclusion of 36 studies from the 21,309 identified

2.3.1 Study Characteristics

The key characteristics of the 36 included studies are summarised in Table 1. A total of 5,876 participants were included. Study sample sizes ranged from 20-2,032 participants, with a median of 48 participants (Interquartile Range (IQR): 37.0-67.5). The age range of participants was reported in 30 studies and ranged from 6 to 25 years. The mean participant age, provided in 24 studies, was 15.4 years. The proportion of females in the study sample was reported in 31 studies, with a mean of 43.3%.

A total of 17 studies (47.2%) were conducted in the USA, and 15 (41.7%) were conducted in Europe, including one in the UK. In addition, one study was conducted in Canada, one study was conducted in Mexico, and two studies (5.6%) were multi-national; one of which was conducted in European countries and the USA, and one of which was conducted in European countries only.

Of the 36 included studies, six (16.7%) included children and young people with cancer, eight (22.2%) included children and young people with cystic fibrosis and a

further eight studies (22.2%) assessed children and young people with HIV. Children and young people with thalassemia were included in four studies (11.1%), while three studies (8.3%) included children and young people with chronic kidney disease. Seven studies (19.4%) assessed children and young people with neurological conditions; four of which included children and young people with paediatric multiple sclerosis. One of these studies was a multi-condition study, also assessing children and young people with acute disseminated encephalomyelitis (Parrish et al., 2013). Of the remaining three neurological studies, one included children and young people with spinal muscular atrophy, one included those with Duchenne muscular dystrophy, and one included those with juvenile neuronal ceroid lipofuscinosis.

Table 1. Key characteristics of the 36 studies included in the meta-analyses of anxiety and depression prevalence

Source	Location	Total Participants	Age, Mean (SD) [Range]	No. of Female Participants/No. of Total Participants (%)	Year of Data Collection	Anxiety Prevalence Reported	Depression Prevalence Reported	Risk of Bias
Cancer								
Hedström, Ljungman and von Essen, 2005	Sweden	56	NR (NR) [13-19]	24/56 (43)	1999-2003	✓	✓	Low
Matziou et al., 2008	Greece	80	11.2 (NR) [6-16]	35/80 (44)	2002-2005	×	✓	Low
Kersun et al., 2009	USA	41	15.2 (2.2) [12-19]	18/41 (44)	NR	✓	✓	Low
Durualp and Altay, 2012	Turkey	20	NR (NR) [6-12]	10/20 (50)	2010-2011	×	✓	Moderate
Bemis et al., 2015	USA	151	13.5 (2.4) [10-17]	77/151 (51)	NR	×	✓	Moderate
Rivas-Molina et al., 2015	Mexico	46	NR (NR) [7-15]	14/46 (30)	2012	×	✓	Moderate
Cystic Fibrosis								
Casier et al., 2008	Belgium	34	17.3 (3.1 [NR]	18/34 (53)	NR	✓	✓	Low
White et al., 2009	USA	53	12.4 (2.6) [9-17]	31/53 (58)	1995-1996	✓	✓	Moderate
Smith et al., 2010	USA	39	12.0 (3.1) [7-17]	20/39 (51)	NR	×	✓	Low
Casier et al., 2011	Belgium	40	18.4 (2.9) [NR]	17/40 (43)	NR	✓	✓	Low
Modi et al., 2011	USA	59	15.8 (2.5) [NR]	27/59 (46)	2006-2008	✓	✓	Low
Oliver et al., 2014	USA	72	19.1 (3.3) [14-25]	36/72 (50)	2010-2011	✓	✓	Low
Quittner et al., 2014	Multi-national (Europe & USA)	1286	14.8 (1.7) [NR]	669/1286 (52)	NR	✓	✓	Low
Askew et al., 2017	UK	45	20.7 (NR) [17-24]	18/45 (40)	NR	✓	✓	Low
HIV								
Pao et al., 2000	USA	34	18.5 (NR) [16-21]	27/34 (79)	NR	×	✓	Moderate
Murphy et al., 2001	USA	213	NR (NR) [12-18]	NR	1999-2000	×	✓	Low
Elliott-DeSorbo, Martin and Wolters, 2009	USA	55	12.9 (NR) [8-17]	25/55 (45)	2001-2005	✓	✓	Low
Mellins et al., 2009	USA	206	12.3 (2.2) [NR]	105/206 (51)	NR	✓	✓	Low
Martinez et al., 2012	USA	60	20.6 (2.0) [15-24]	60/60 (100)	2003-2005	×	✓	Low
Nachman et al., 2012	USA	313	NR (NR) [6-17]	NR	2007	✓	✓	Low
Salama et al., 2013	USA	59	18.8 (NR) [14-23]	36/59 (61)	2002-2003	×	✓	Low
Brown et al., 2015	USA	2032	20.3 (2.1) [NR]	662/2032 (33)	2009-2012	✓	✓	Low

Source	Location	Total Participants	Age, Mean (SD) [Range]	No. of Female Participants/No. of Total Participants (%)	Year of Data Collection	Anxiety Prevalence Reported	Depression Prevalence Reported	Risk of Bias
Thalassemia								
Sadowski et al., 2002	Multi-national (Europe)	38	NR (NR) [6-18]	NR	1994-1996	✓	✓	Low
Aydinok et al., 2005	Turkey	38	12.2 (3.3) [6-18]	20/38 (53)	NR	✓	✓	Moderate
Cakaloz et al., 2009	Turkey	20	11.1 (3.0) [7-18]	13/20 (65)	NR	✓	✓	Moderate
Adanır et al., 2017	Turkey	24	13.6 (2.1) [12-18]	11/24 (46)	NR	✓	✓	Moderate
Neurological Conditions								
Laufersweiler-Plass et al., 2003	Germany	96	11.2 (NR) [6-18]	49/96 (51)	NR	✓	✓	Moderate
Bäckman et al., 2005	Finland	27	NR (NR) [9-21]	14/27 (52)	NR	×	✓	Moderate
Amato et al., 2008	Italy	63	15.3 (2.5) [8-17]	33/63 (52)	NR	×	✓	Low
Amato et al., 2010	Italy	39	NR (NR) [12-20]	NR	NR	✓	×	Low
Till et al., 2012	Canada	31	16.1 (NR) [12-19]	23/31 (74)	NR	×	✓	Moderate
Elsenbruch et al., 2013	Germany	50	15.4 (0.6) [8-23]	0/50 (0)	2009-2011	×	✓	Moderate
Parrish et al., 2013	USA	36	NR (NR) [NR]	NR	NR	×	✓	Moderate
Chronic Kidney Disease								
Kogon et al., 2013	USA	44	NR (NR) [7-18]	13/44 (30)	2011-2012	×	✓	Moderate
Kogon et al., 2016	USA	344	NR (NR) [6-17]	142/344 (41)	2005-2008	×	✓	Low
Kilicoglu et al., 2016	Turkey	32	NR (NR) [8-18]	19/32 (59)	2014	×	✓	Low

NR: Not reported

2.3.2 Risk of Bias Assessment

No studies were deemed to be at high risk of bias, 14 studies (38.9%) were at moderate risk of bias, and 22 studies (61.1%) were at low risk of bias (Table 2). Most studies were scored as 'low' risk of bias for questions relating to internal validity. Importantly, all of the studies used acceptable case definitions and valid and reliable prevalence measurement tools, with appropriate numerators and denominators. In addition, of the 36 included studies, 33 studies (91.7%) used the same mode of data collection for all subjects, and 33 studies (91.7%) collected data from the subjects directly. However, many studies were scored as 'high' risk of bias for questions relating to external validity. For example, of the 36 included studies, only 16 (44.4%) used a target population which was representative of the national population regarding relevant variables, whilst 21 (58.3%) used a sampling frame which was a true or close representation of the target population. Finally, only one study was deemed to have a low likelihood of non-response bias.

Table 2. Risk of bias assessment for the 36 studies included in the meta-analyses of anxiety and depression prevalence

Author & Publication Date	External Validity Questions				Internal Validity Questions						Total Score	Overall Risk of Bias
	1	2	3	4	5	6	7	8	9	10		
Cancer												
Hedström, Ljungman and von Essen, 2005	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	0	Low
Matziou et al., 2008	High	Low	High	High	Low	Low	Low	Low	Low	Low	3	Low
Kersun et al., 2009	High	High	Low	High	Low	Low	Low	Low	Low	Low	3	Low
Durualp and Altay, 2012	High	High	High	High	Low	Low	Low	Low	Low	Low	4	Moderate
Bemis et al., 2015	High	Low	High	High	Low	Low	Low	Low	High	Low	4	Moderate
Rivas-Molina et al., 2015	High	High	High	High	Low	Low	Low	Low	Low	Low	4	Moderate
Cystic Fibrosis												
Casier et al., 2008	High	High	Low	High	Low	Low	Low	Low	Low	Low	3	Low
White et al., 2009	High	Low	High	High	Low	Low	Low	Low	High	Low	4	Moderate
Smith et al., 2010	High	High	Low	High	Low	Low	Low	Low	Low	Low	3	Low
Casier et al., 2011	Low	High	Low	High	Low	Low	Low	Low	Low	Low	2	Low
Modi et al., 2011	High	Low	High	High	Low	Low	Low	Low	Low	Low	3	Low
Oliver et al., 2014	High	Low	High	High	Low	Low	Low	Low	Low	Low	3	Low
Quittner et al., 2014	Low	Low	High	High	Low	Low	Low	High	Low	Low	3	Low
Askew et al., 2017	High	High	Low	High	Low	Low	Low	Low	Low	Low	3	Low
HIV												
Pao et al., 2000	High	High	High	High	Low	Low	Low	Low	High	Low	5	Moderate
Murphy et al., 2001	Low	Low	High	High	Low	Low	Low	Low	Low	Low	2	Low
Elliott-DeSorbo, Martin and Wolters, 2009	Low	Low	High	High	Low	Low	Low	Low	High	Low	3	Low
Mellins et al., 2009	Low	Low	Low	High	High	Low	Low	High	Low	Low	3	Low
Martinez et al., 2012	Low	Low	High	High	Low	Low	Low	Low	Low	Low	2	Low
Nachman et al., 2012	Low	Low	High	High	Low	Low	Low	Low	High	Low	3	Low
Salama et al., 2013	High	Low	High	High	Low	Low	Low	Low	Low	Low	3	Low
Brown et al., 2015	Low	Low	Low	High	Low	Low	Low	Low	Low	Low	1	Low

Author & Publication Date	External Validity Questions				Internal Validity Questions						Total Score	Overall Risk of Bias
	1	2	3	4	5	6	7	8	9	10		
Thalassemia												
Sadowski et al., 2002	Low	High	Low	High	Low	Low	Low	Low	Low	Low	2	Low
Aydinok et al., 2005	High	High	High	High	Low	Low	Low	Low	High	Low	5	Moderate
Cakaloz et al., 2009	High	High	High	High	Low	Low	Low	Low	High	Low	5	Moderate
Adanir et al., 2017	High	High	High	High	Low	Low	Low	Low	Low	Low	4	Moderate
Neurological Conditions												
Laufersweiler-Plass et al., 2003	Low	Low	High	High	High	Low	Low	Low	High	Low	4	Moderate
Backman et al., 2005	High	High	High	High	Low	Low	Low	Low	Low	Low	4	Moderate
Amato et al., 2008	Low	Low	Low	High	Low	Low	Low	Low	Low	Low	1	Low
Amato et al., 2010	Low	High	Low	High	Low	Low	Low	Low	Low	Low	2	Low
Till et al., 2012	High	High	High	High	High	Low	Low	Low	High	Low	6	Moderate
Elsenbruch et al., 2013	High	Low	Low	High	Low	Low	Low	High	High	Low	4	Moderate
Parrish et al., 2013	High	Low	High	High	Low	Low	Low	Low	High	Low	4	Moderate
Chronic Kidney Disease												
Kogon et al., 2013	High	High	High	High	Low	Low	Low	Low	Low	Low	4	Moderate
Kogon et al., 2016	Low	Low	High	High	Low	Low	Low	Low	Low	Low	2	Low
Kilicoglu et al., 2016	High	High	Low	High	Low	Low	Low	Low	Low	Low	3	Low

High = high risk of bias; Low = low risk of bias

External Validity Questions:

1. Was the study's target population a clear representation of the national population in relation to relevant variables, e.g. age, sex, occupation?
2. Was the sampling frame a true or close representation of the target population?
3. Was some form of random selection used, OR was a census undertaken?
4. Was the likelihood of non-response bias minimal?

Internal Validity Questions:

5. Were data collected directly from the subjects (as opposed to a proxy)?
6. Was an acceptable case definition used in the study?
7. Was the study instrument that measured the parameter of interest (e.g. prevalence) shown to have reliability and validity (if necessary)?
8. Was the same mode of data collection used for all subjects?
9. Was the length of the shortest prevalence period for the parameter of interest appropriate?
10. Were the numerator(s) and denominator(s) for the parameter of interest appropriate?

2.3.3 Anxiety & Depression Assessment Tools

A total of 10 assessment tools were used to measure the prevalence of anxiety, whilst 15 assessment tools were used to assess depression prevalence in the included studies (Table 3). The most common assessment tool for measuring anxiety was the anxiety subscale of the Hospital Anxiety and Depression Scale (HADS), which was used in 7 of the 19 studies assessing anxiety prevalence. The Children's Depression Inventory (CDI) was the most common depression assessment tool, having been used in 9 of the 35 studies investigating depression prevalence. Parent-report measures were used in three studies (Laufersweiler-Plass et al., 2003, Mellins et al., 2009, Till et al., 2012).

Table 3. Anxiety and depression assessment tools used in the 36 included studies

Assessment Tool	Frequency of Use	
	Anxiety Studies	Depression Studies
Questionnaires:		
Hospital Anxiety and Depression Scale (HADS)	7	7
The Behavior Assessment Scale for Children (BASC) (self-/parent-completed)[b]	1	3
Brief Symptom Inventory (BSI)	1	1
Beck Youth Inventory (BYI)	1	3
Youth Self Report (YSR)	0	1
The Youth's Inventory-4	1	1
Children's Depression Inventory (CDI)	NA	9
The Center for Epidemiological studies Depression Scale (CES-D)	NA	3
Depression Inventory for Children and Adolescents (DIKJ)	NA	1
Diagnostic Interviews:		
Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS)	3	2
DSM-based Psychiatric Interview	2	2
Structured Clinical Interview for DSM-IV Axis I Disorders (SCID)	0	1
Computerised Diagnostic Interview Schedule for Children (CDISC)	1	1
Diagnostic Interview Schedule for Children (DISC) (self- and parent-completed)[a]	1	1
Kinder-DIPS[a]	1	1

[a] Measures were completed by parents
[b] Measure was completed by parents in one study of depression prevalence
NA: Not Applicable

2.3.4 Prevalence of Anxiety

The prevalence of anxiety was reported in 19 studies, with a total of 4,547 participants. Anxiety prevalence ranged from 3.6% (95% Confidence Interval (CI) 0.4%-12.5%) to 58.3% (95% CI: 36.6%-77.9%). The pooled anxiety prevalence estimate from the random-effects meta-analysis was 19.1% (95% CI: 14.1%-24.6%). The level of heterogeneity in the analysis was high (I^2=92.2%, p<0.001) (Figure 3).

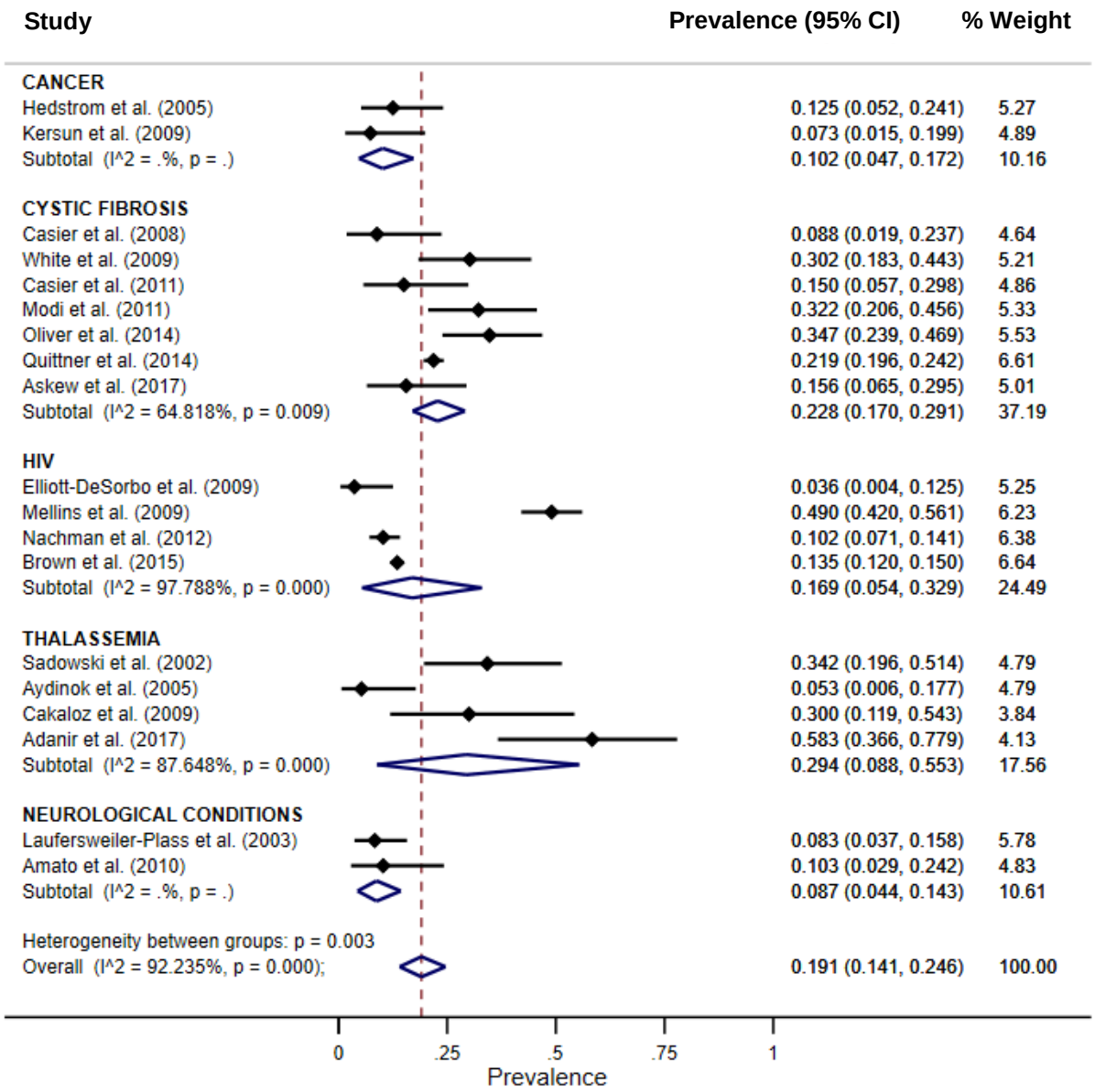

Figure 3. Forest plot of 19 studies included in the meta-analysis of anxiety prevalence

Although visual inspection of the funnel plot for the anxiety meta-analysis suggests the presence of publication bias, with fewer small studies reporting high anxiety prevalence, this was not found to be significant by Egger's test of bias (p=0.406) (Figure 4).

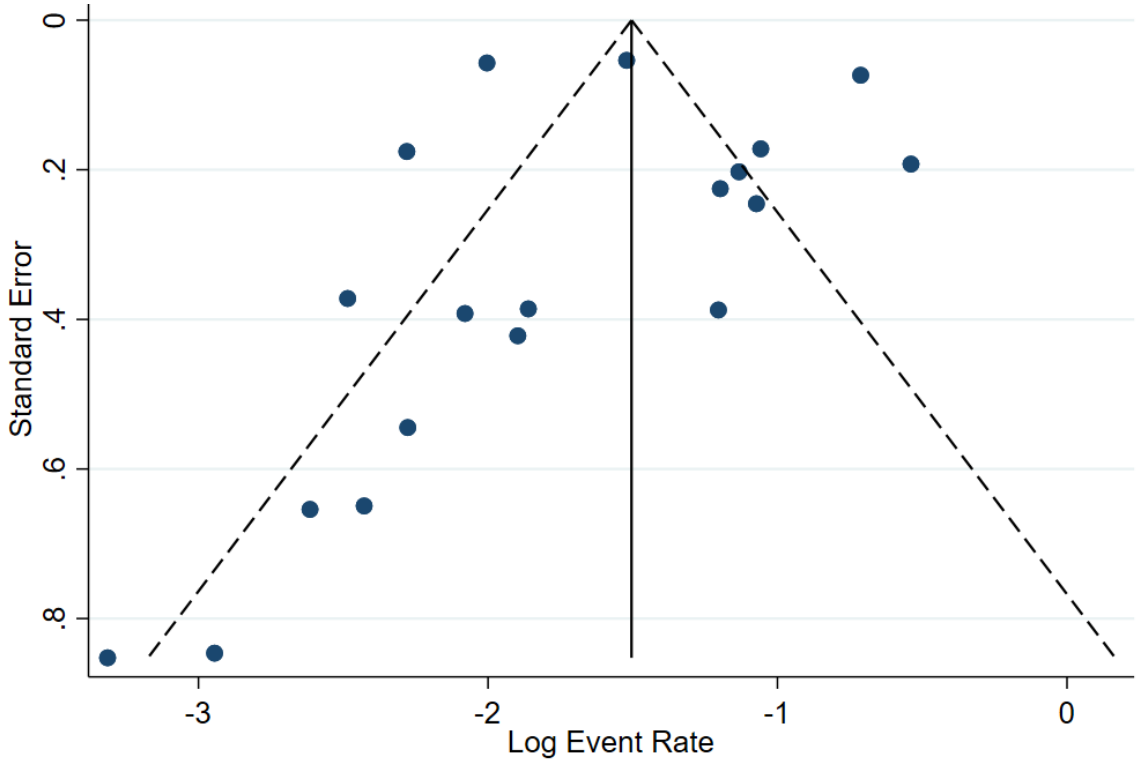

Figure 4. Funnel plot for anxiety meta-analysis, with pseudo 95% confidence limits

Sub-group analysis revealed differences in anxiety prevalence by diagnostic group. Children and young people with thalassemia were reported to have the highest pooled anxiety prevalence estimate (29.4%, 95% CI: 8.8%-55.3%), followed by children and young people with cystic fibrosis (22.8%, 95% CI: 17.1%-29.1%). The lowest pooled anxiety prevalence estimate was found for children and young people with neurological conditions (8.7%, 95% CI: 4.4%-14.3%). Pooled anxiety prevalence was also found to differ by study location; studies conducted in the USA were found to report a higher prevalence (20.8%, 95% CI: 11.3%-32.1%) than European studies (17.2%, 95% CI: 9.9%-26.0%). Differences in pooled anxiety prevalence were also found by assessment tool, with a lower prevalence reported from studies using self-/parent-completed questionnaires (14.9%, 95% CI: 10.9%-19.4%) compared to studies utilising diagnostic interviews (28.5%, 95% CI: 13.2%-46.8%). Finally, prevalence varied by the risk of bias; studies at moderate risk of bias reported a higher prevalence (23.1%, 95% CI: 7.8%-43.0%), compared to studies at low risk of bias (18.2%, 95% CI: 12.8%-24.3%) (Table 4).

Table 4. Sub-group analysis of pooled anxiety prevalence

Subgroups	Number of Studies	Number of Participants	Pooled Anxiety Prevalence Estimate (95% CI)	I^2	*p* Value
Diagnostic Group					
Cancer	2	97	10.2% (4.7%-17.2%)	-	-
Cystic fibrosis	7	1,589	22.8% (17.1%-29.1%)	64.8%	0.009
HIV	4	2,606	16.9% (5.4%-32.9%)	97.8%	<0.001
Thalassemia	4	120	29.4% (8.8%-55.3%)	87.6%	<0.001
Neurological Conditions	2	135	8.7% (4.4%-14.3%)	-	-
Study Location[a]					
Europe	10	430	17.2% (9.9%-26.0%)	78.0%	<0.001
USA	8	2,831	20.8% (11.3%-32.1%)	95.9%	<0.001
Assessment Tool					
Self/parent-completed questionnaire	12	4,072	14.9% (10.9%-19.4%)	87.0%	<0.001
Diagnostic interview	7	475	28.5% (13.2%-46.8%)	93.0%	<0.001
Risk of Bias					
Low	14	4,316	18.2% (12.8%-24.3%)	93.3%	<0.001
Moderate	5	231	23.1% (7.8%-43.0%)	89.2%	<0.001

I^2 statistic could not be generated for groups containing <=3 studies

[a] Excluded: Multi-national studies containing sites in both Europe and the USA excluded

Meta-regression analysis showed that only the differences by assessment tool were statistically significant (β=0.15, 95% CI: 0.01-0.30, *p*=0.04). Pooled anxiety prevalence was also not significantly associated with sample size, mean age or percentage of females in the sample (Table 5).

Table 5. Meta-regression analysis of pooled anxiety prevalence

Covariate	Number of Studies	Beta (95% CI)	*p* Value	Adj. R^2
Study Location[a]	18	0.05 (-0.12-0.22)	0.53	-4.89%
Assessment Tool	19	0.15 (0.01-0.30)	0.04	43.36%
Risk of Bias	19	0.02 (-0.18-0.21)	0.84	-10.16%
Sample Size	19	-0.00 (-0.00-0.00)	0.60	-11.44%
Mean Age	15	-0.01 (-0.04-0.02)	0.50	-1.09%
% Female	16	0.01 (-0.00-0.02)	0.25	11.01%

[a] Excluded: multi-national studies containing sites in both Europe and the USA, and studies from Mexico excluded due to insufficient numbers

2.3.5 Prevalence of Depression

The prevalence of depression was reported in 35 studies, with a total of 5,934 participants. Depression prevalence ranged from 0.0% (95% CI: 0.0%-0.7%) to 50.0% (95% CI: 34.9%-65.1%). The pooled depression prevalence estimate from the random-effects meta-analysis was 13.8% (95% CI: 10.0%-18.2%). Substantial heterogeneity was found in the analysis (I^2=93.2%, p<0.001) (Figure 5).

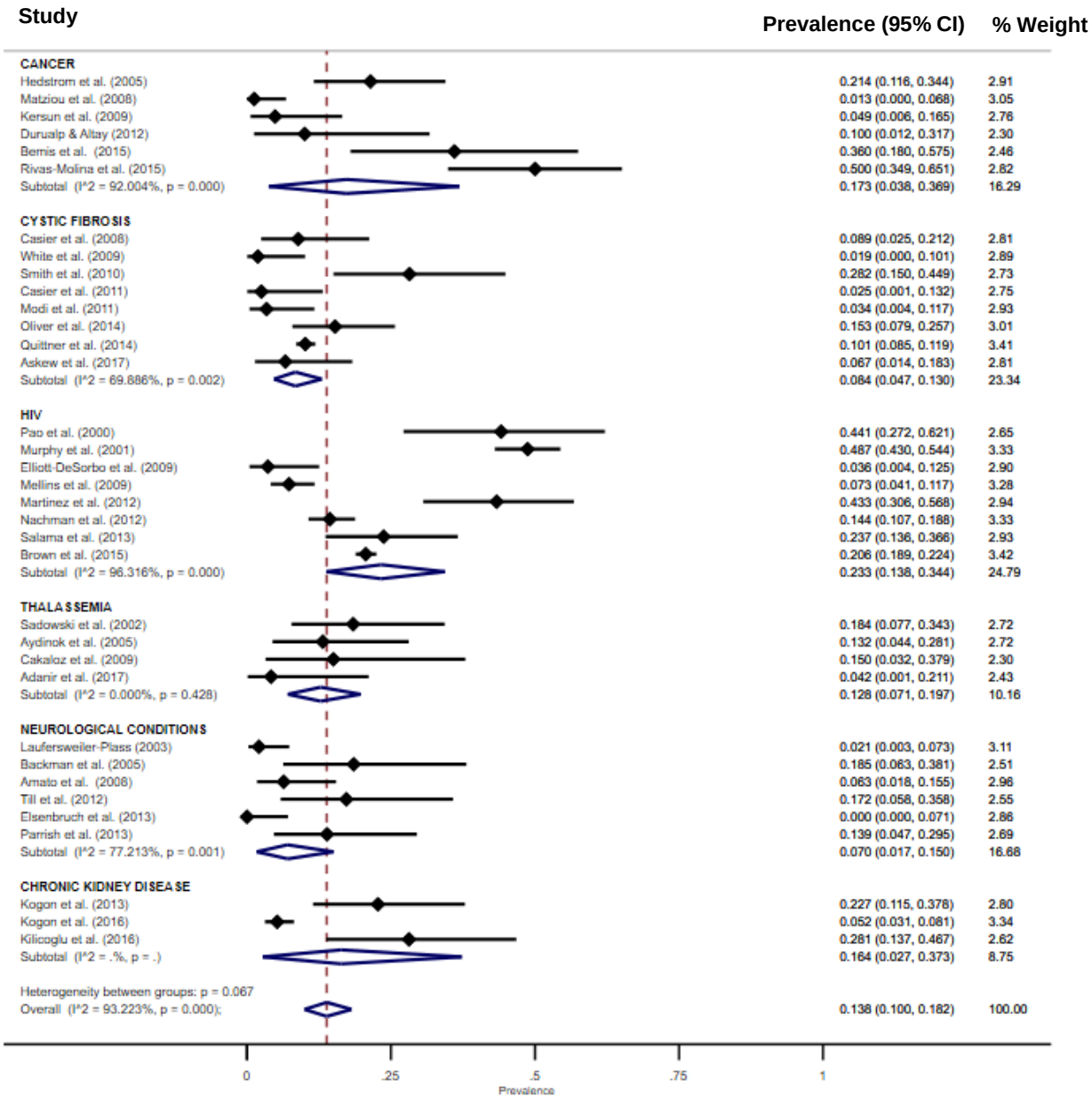

Figure 5: Forest plot of 35 studies included in the meta-analysis of depression prevalence.

Although visual inspection of the funnel plot for the depression meta-analysis suggested some publication bias, due to a lack of published studies with large standard errors reporting high depression prevalence, this was not found to be statistically significant by Egger's test of bias (p=0.81) (Figure 6).

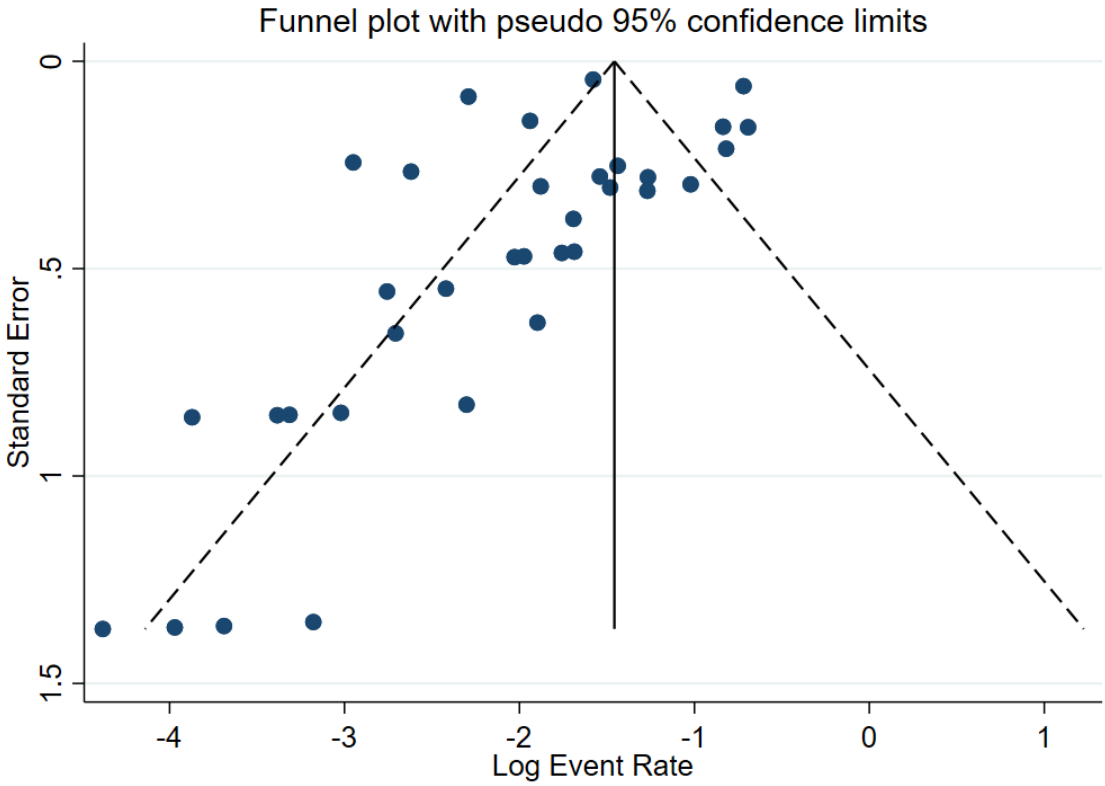

Figure 6. Funnel plot for depression meta-analysis, with pseudo 95% confidence limits

Sub-group analysis found that the pooled prevalence of depression differed by diagnostic group. Children and young people with HIV reported the highest pooled depression prevalence (24.2%, 95% CI: 15.4%-34.2%), whilst those with neurological conditions had the lowest prevalence (7.0%, 95% CI: 1.7%-15.0%). US studies reported higher depression prevalence (18.8%, 95% CI: 12.6%-25.8%) compared to European studies (9.5%, 95% CI: 5.0%-15.1%). Differences in pooled depression prevalence were also found by assessment tool; studies that used self-/parent-completed measures had a higher pooled prevalence (15.4%, 95% CI: 11.0%-20.4%) than studies using diagnostic interviews (10.5%, 95% CI: 4.0%-19.3%). Variations in depression prevalence according to the risk of bias assigned to the study were very small; studies at moderate risk of

bias reported a slightly higher prevalence (14.8%, 95% CI: 6.7%-25.0%) compared to studies at low risk of bias (14.2%, 95% CI: 9.7%-19.4%) (Table 6).

Table 6. Sub-group analysis of pooled depression prevalence

Subgroups	Number of Studies	Number of Participants	Pooled Depression Prevalence Estimate (95% CI)	I^2	*p* Value
Diagnostic Group					
Cancer	6	268	17.3% (3.8%-36.9%)	92.0%	<0.001
Cystic fibrosis	8	1,628	8.4% (4.7%-13.0%)	69.9%	0.002
HIV	8	3,071	23.3% (13.8%-34.4%)	96.3%	<0.001
Thalassemia	4	120	12.8% (7.1%-19.7%)	0.0%	0.43
Neurological Conditions	6	261	7.0% (1.7%-15.0%)	77.2%	0.001
Chronic kidney disease	3	420	16.4% (2.8%-37.3%)	-	-
Study Location[a]					
Europe	16	699	9.5% (5.0%-15.1%)	78.0%	<0.001
USA	17	3,805	18.0% (11.7%-25.4%)	95.2%	<0.001
Assessment Tool					
Self/parent-completed questionnaire	27	5,310	14.8% (10.4%-19.8%)	94.0%	<0.001
Diagnostic interview	8	509	10.5% (4.0%-19.3%)	83.9%	<0.001
Risk of Bias					
Low	21	5,277	13.4% (8.9%-18.6%)	94.9%	<0.001
Moderate	14	542	14.8% (6.7%-25.0%)	88.0%	<0.001

I^2 statistic could not be generated for groups containing <=3 studies

[a] Excluded: Multi-national studies containing sites in both Europe and the USA, and studies from Mexico or Canada excluded

Meta-regression analysis found only sample mean age (β=0.02, 95% CI: 0.01-0.03, *p*=0.001) to be significantly associated with pooled depression prevalence (Table 7).

Table 7. Meta-regression analysis of pooled depression prevalence

Covariate	Number of Studies	Beta (95% CI)	*p* Value	Adj. R^2
Study Location[a]	33	0.10 (-0.02-0.21)	0.11	9.78%
Assessment Tool	35	-0.06 (-0.20-0.08)	0.37	2.12%
Risk of Bias	35	0.01 (-0.11-0.13)	0.87	-4.65%
Sample Size	35	0.00 (-0.00-0.00)	0.86	-9.29%
Mean Age	24	0.02 (0.01-0.03)	0.001	100.00%
% Female	31	0.00 (-0.00-0.00)	0.58	-33.62%

[a] Excluded: multi-national studies containing sites in both Europe and the USA, and studies from Mexico excluded due to insufficient numbers

2.4 Discussion

2.4.1 Key Findings

This chapter describes the systematic review and meta-analysis conducted to assess the prevalence and incidence of anxiety and depression in children and young people with life-limiting conditions. This review identified 19 studies of anxiety prevalence, 35 studies of depression prevalence and no studies of anxiety or depression incidence. Meta-analyses of anxiety and depression prevalence from the included studies found a pooled anxiety prevalence of 19.1% (95% CI: 14.1%-24.6%) and a pooled depression prevalence of 13.8% (95% CI: 10.0%-18.2%). These findings indicate a substantially higher prevalence of anxiety and depression in children and young people with life-limiting conditions compared to those reported by epidemiological studies of anxiety and depression prevalence in the general population of children and young people (Ghandour et al., 2019, NHS Digital, 2018b).

Sub-group analysis was conducted by diagnostic group, study location, anxiety/depression assessment tool and risk of bias. The prevalence of both anxiety and depression was found to vary by diagnostic group; the highest pooled prevalence of anxiety (29.4%) was reported for children and young people with thalassemia, while the highest pooled prevalence of depression (24.2%) was found among children and young people with HIV. It was also observed that the prevalence of anxiety and depression differed by the type of assessment tool used, with diagnostic interviews associated with higher anxiety prevalence. This was also found in a systematic review of anxiety prevalence in children and young people with autistic spectrum disorders (Van Steensel, Bögels and Perrin, 2011). Conversely, higher depression prevalence was associated with the use of self-/parent-report questionnaires, a finding previously reported by a systematic review of the prevalence of depression among adults with chronic kidney disease (Palmer et al., 2013). These findings may be partially accounted for by the diagnostic groups studied. For example, over half of the studies which used diagnostic interviews concerned children and young people with thalassemia and the pooled anxiety prevalence for this group was very high, whereas in the case of depression, the highest pooled prevalence was found for HIV studies, most of which used self-/parent-report measures.

Meta-regression analysis was also conducted, finding that age was significantly associated with depression prevalence. This trend is consistent with that found among the general population of children and young people with anxiety or depression (NHS Digital, 2018a). Although sex was not found to be associated with depression prevalence, and neither sex nor age were associated with anxiety prevalence, these findings should be treated with caution given that many studies could not be included in the meta-regression model due to a lack of reported age and sex data.

2.4.2 Strengths & Limitations

This review has a number of strengths. Importantly, this is the first systematic review and meta-analysis of anxiety and depression prevalence among children and young people with life-limiting conditions to have been conducted. Given the increasing numbers of children and young people living with life-limiting conditions, and recent calls to recognise and address the mental health needs of this population, a comprehensive picture of the existing evidence regarding the prevalence of depression and anxiety across this population is extremely valuable. In addition, the comprehensive search strategy utilised in this review resulted in the inclusion of a total of 36 studies in the meta-analyses, from more than ten countries, covering five condition types. This improves the robustness of the pooled prevalence estimates, offering a more accurate description of the epidemiology of anxiety and depression in this patient group than is afforded by single studies.

However, weaknesses in the review methodology must be noted. As such, only studies written in English were eligible for inclusion, limiting the generalisability of the prevalence estimates. In addition, very high levels of heterogeneity were observed in both meta-analyses, as has been observed in other meta-analyses of disease prevalence (Catalá-López et al., 2012, Mansfield et al., 2016, Noubiap et al., 2017). Although sub-group analysis was conducted to explore this, the level of heterogeneity found within each of the sub-groups analysed (diagnostic group, study location, assessment tool, risk of bias) was still high. Univariate meta-regression was also used to further explore the heterogeneity. However, most of the results from these models were not statistically significant, indicating that the predictor variables included in these models did not significantly explain the variation in prevalence estimates. This suggests that the heterogeneity observed may have been a result of the interplay

between the various factors such as age, sex, diagnostic group. However, due to the relatively small number of studies in each sub-group and the resulting low power, it was not possible to conduct multivariable meta-regression models to explore the combined effects of these factors on the prevalence of anxiety or depression.

This review is also limited by the available dataset. As such, the coverage of life-limiting conditions is far from exhaustive. Importantly, of the 5,876 participants included in the review, only 342 (5.8%) had neurological conditions, yet over 8% of children and young people with a life-limiting condition in England have a neurological diagnosis (Fraser et al., 2020a). Intellectual disability is a common comorbidity among this group (Julian et al., 2013, Robinson et al., 2014, Stadskleiv, 2020). However, the identification of mental health problems or emotional distress in children and young people with intellectual disability can be complex due to communication limitations (Vos et al., 2012). Whilst greater efforts should be made to improve the accessibility and suitability of self-/parent-report measures, for some the detection of emotional distress will rely on methods such as the interpretation of non-verbal behaviours, utterances, and physiological responses.

There are also some broader limitations in terms of the characteristics of the included studies. First, many of the studies had very small sample sizes. When combined with the relatively narrow range of life-limiting conditions represented, this limits the ability of any analysis to produce results that are representative of the whole population of children and young people with life-limiting conditions. In addition, some of the studies did not report key study data, such as the age and sex characteristics of their samples. For example, only 15 (78.9%) of the included studies reporting anxiety prevalence and 24 (66.7%) of the studies reporting depression prevalence provided the mean age of the study sample. This greatly reduced the number of studies that could be included in the meta-regression models.

Importantly, the majority of the screening tools used in the studies have not been validated in children and young people with life-limiting conditions, thereby reducing the validity of the studies' findings (Thabrew et al., 2017). In fact, the Hospital Anxiety and Depression Scale (HADS), the most commonly used assessment tool in the included studies, is designed to only be used by young people aged 17 years or over

(Thabrew et al., 2017). The Hospital Anxiety and Depression Scale (HADS) has also been shown to have significant issues, including the underestimation of anxiety and depressive symptoms, and therefore is not recommended for use as a screening tool (Abbott et al., 2019, Quittner et al., 2014). Subsequently, the prevalence of anxiety and depression reported in the studies using the Hospital Anxiety and Depression Scale (HADS) may be underestimates of the true prevalence.

Finally, as no studies reported longitudinal data, the incidence of anxiety and depression in children and young people with life-limiting conditions could not be assessed. Consequently, the temporality of the association between the diagnosis of a life-limiting condition and the development of anxiety or depression could not be explored. Therefore, a longitudinal study investigating the incidence of anxiety and depression among children and young people with a wide range of life-limiting conditions is required in order to fully understand the epidemiology of these mental health conditions in this population group (Chapters 4 & 5).

2.5 Chapter Summary

This chapter has outlined the systematic review and meta-analysis conducted to estimate the prevalence and incidence of anxiety and depression in children and young people with life-limiting conditions from previously published literature, as set out in the first objective of this thesis. This review found that the prevalence of anxiety and depression in children and young people with the specific life-limiting conditions investigated in the literature was higher than that found in the general population. However, the range of life-limiting conditions studied was narrow and no studies of anxiety or depression incidence have been conducted in this population. The next chapter will describe the second review undertaken for this thesis, investigating the risk and protective factors for anxiety and depressive symptoms in children and young people with life-limiting conditions.

Chapter 3: Risk and Protective Factors For Anxiety and Depressive Symptoms in Children and Young People with Life-Limiting Conditions: A Systematic Review and Best Evidence Synthesis

3.1 Introduction

Chapter 2 described the systematic review and meta-analysis conducted to investigate the incidence and prevalence of anxiety and depression in children and young people with life-limiting conditions. Although the range of life-limiting conditions studied in previous research has been narrow, the results of this review indicated that the prevalence of anxiety and depression among children and young people with the life-limiting conditions that have been assessed is higher than that found in the general population. In order to understand more about anxiety and depression in children and young people with life-limiting conditions, it is important to explore the factors that are associated with anxiety and depression in this group. Therefore, this chapter describes the research undertaken to achieve the second objective outlined in Chapter 1:

- *To conduct a systematic review to identify the factors that have been found to be associated with anxiety and depressive symptoms among children and young people with life-limiting conditions in previously published literature*

3.2 Methods

This systematic review was reported according to the standards of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2010). The systematic review protocol generated for both this review and the review described in Chapter 2 was registered on the PROSPERO database on 14th February 2018, prior to review initiation (identifier: CRD42018088795).

3.2.1 Search Strategy

This review used the same search strategy as the meta-analysis described in the previous chapter. Hereby, EMBASE, Medline and PsycINFO were searched on 15th January 2018, identifying papers published from 1st January 2000 onwards. The search consisted of the following concepts: (children/adolescents/young adults) AND (anxiety/depression) AND (life-limiting conditions). All life-limiting condition diagnoses, as defined in the directory produced by Hain et al. in 2013, were included as search

terms, using both subject headings and free text (Hain et al., 2013). The search strategy for Medline is displayed in Appendix 2.

Reference lists of identified systematic reviews and all included articles were searched for additional eligible papers. Grey literature was reviewed using an advanced Google search, with the first 50 PDFs screened for eligibility.

The eligibility criteria were similar to those utilised in the meta-analysis, with two key differences. First, although symptoms of anxiety and depression must have been measured using validated assessment tools or coded medical report data, it was not essential that studies reported an estimate of prevalence or incidence. Therefore, the outcome studied in this systematic review was the level of anxiety/depressive symptoms experienced by the children and young people (measured as a continuous variable) rather than anxiety/depression diagnoses. Second, one or all of the aims of the included studies must have been to quantitatively analyse the association of one or more factors with the level of anxiety or depressive symptoms.

The remaining eligibility criteria were identical to those in the previous chapter. Therefore, in order for studies to be included, they must have:

1. included participants between the ages of 5-25 years
2. included participants diagnosed with a life-limiting condition
3. been published in English or subsequently translated into English
4. been conducted in a country within the Organisation for Economic Co-operation and Development (OECD)

The following types of study designs were excluded:

1. case studies, case series, intervention studies, qualitative studies and systematic reviews
2. studies which included non-life-limiting condition diagnoses and did not report data separately
3. studies of participants successfully treated for cancer

3.2.2 Study Selection

As in the previous chapter, titles and abstracts of all studies were screened by the primary reviewer (MMB), with 20% also independently screened by a second reviewer

(LR). Any discrepancies were resolved through discussion. Full texts of all studies deemed potentially eligible were retrieved and reviewed for eligibility by MMB, with the second reviewer (LR) also independently reviewing 20%. Studies investigating anxiety or depressive symptoms among children and young people with DiGeorge Syndrome were excluded at this stage as mental health problems are a component of this condition, meaning that the risk and protective factors for anxiety/depressive symptoms identified among these children and young people may differ to those observed in the rest of the life-limiting condition population (Baker and Skuse, 2005).

3.2.3 Data Extraction

Data were extracted by MMB, using an extraction form piloted on three of the eligible studies (see Appendix 4 for data extraction form). Key study characteristics including country of study, study design, recruitment and eligibility criteria, anxiety/depression assessment tool, age, and sex were extracted. Data relating to each risk/protective factor were analysed. This data included: data collection and/or measurement tool, statistical analysis methods, and outputs.

3.2.4 Best Evidence Synthesis Methods

Studies assessing factors associated with anxiety and depressive symptoms among children and young people with life-limiting conditions are highly heterogeneous. Most of this heterogeneity is due to variations in the statistical analyses used in the studies; more specifically, the adjustment for different covariates in the multivariable models conducted in different studies. Although meta-analyses of the univariate results for each factor could have been performed, the lack of independence of the factors would compromise the validity of such meta-analyses. An alternative synthesis methodology is a best evidence synthesis, which combines the quantitative analysis of study results; a key feature of meta-analyses, with the analysis of study methodologies; an important aspect of narrative syntheses, using the best available evidence, subsequently allowing the strength of evidence to be graded (Slavin, 1986). When grading the strength of the evidence, a best evidence synthesis must consider three key domains; quality, quantity, and consistency (West et al., 2002). However, the exact methods used to grade the evidence according to these domains varies between different best evidence syntheses.

3.2.5 Study Quality

As the factors associated with anxiety and depression are not independent of each other, multivariable analysis was deemed to be of higher validity. Therefore, it was important that the results of multivariable analysis were given more weighting than those of univariate analysis when the evidence was graded. In order to achieve this, a two-stage method was used to assess study quality, based on a previously published best evidence synthesis, which incorporated both the study's general methodological quality and the presence or absence of multivariable analysis in the study's quality classification (Xing et al., 2013).

First, a quality score was assigned using the Appraisal Tool for Cross-Sectional Studies (AXIS tool) and the Newcastle Ottawa Scale (NOS) for cohort studies (Downes et al., 2016, Wells et al., 2017). The AXIS tool was published in 2016 and assesses 20 components of study design and execution such as the aims/objectives, sample selection and recruitment, reporting of statistical methods, likelihood of non-response bias, consistency of results, authors' conclusions, and any possible conflicts of interest (Downes et al., 2016). For each component, a response of 'yes' 'no' or 'don't know' was recorded, and a total score out of a possible 20 was assigned based on the number of 'yes' responses. As the tool does not specify what cut-off values should be used to categorise studies as high, moderate, and low quality categories, the following values were chosen: ≥15 for high quality, 10-14 for moderate quality, and <10 for low quality. These categories align with those used in previously published systematic reviews (Marzi, Demetriou and Reimers, 2018, Moor and Anderson, 2019).

The Newcastle Ottawa Scale (NOS) for cohort studies consists of three sections; selection, comparability, and outcome (Wells et al., 2017). The selection section assesses aspects such as representativeness of the exposed cohort, selection of the non-exposed cohort, and measurement of the exposure. The comparability section focuses on statistical adjustment for potential confounders. Finally, the outcome section assesses measurement of the outcome, whether the follow-up period was long enough for the occurrence of the outcome, and whether follow-up was completed by all participants. A star grading system is used, whereby a star is assigned for each desirable response, up to a total of four stars for the selection section, two stars for the comparability section, and three stars for the outcome section. The criteria

outlined in Table 8 were used to convert scores into quality categories, based on previous literature (McPheeters et al., 2012).

Table 8. Newcastle Ottawa Scale quality categories

Quality Category	Criteria		
	Selection	**Comparability**	**Outcome**
Good	≥3	2	≥2
Fair	2	≥1	≥2
Poor	0-1	0	0-1

The second stage of study quality assessment involved assigning an overall quality classification to each study based on the quality score from either the AXIS tool or the Newcastle Ottawa Scale, and the presence or absence of multivariable analysis, using the criteria outlined in Table 9.

Table 9. Criteria for overall quality level classifications

Quality Classification	Criteria for cross-sectional analyses	Criteria for cohort analyses
High	Multivariable analysis conducted and AXIS score of ≥15	Multivariable analysis conducted and NOS category "good"
Moderate	Multivariable analysis conducted but quality score <15, or no multivariable analysis conducted and quality score ≥10	Multivariable analysis conducted but NOS category "fair", or no multivariable analysis conducted and NOS category "fair" or "good"
Low	Quality score <10	NOS category "poor"

3.2.6 Level of Evidence

Using the three key domains of a best evidence synthesis (quality, quantity, and consistency), the level of evidence identified for each factor was categorised as strong, moderate, limited, no evidence of an association, or conflicting, according to the criteria outlined in Table 10 (Lievense et al., 2002, O'neil et al., 2014, Urquhart et al., 2010). A best evidence synthesis was conducted for all factors which were assessed in three or more analyses. A minimum of three analyses assessing each factor were needed in order to assess the consistency of the evidence. Each best evidence synthesis only included analyses of the direct effects of the factor in question. Additionally, if conflicting results were found within papers from multivariable and univariate analysis, the multivariable result was used for the best evidence synthesis.

Table 10. Criteria for assessing evidence level of factors in each best evidence synthesis

Evidence Level for Significant Association	Criteria
Strong evidence	≥3 analyses from high/moderate quality cohort studies, of which ≥75% find a significant association in the same direction
Moderate evidence	2 analyses from high/moderate quality cohort studies and 1 analysis from high/moderate quality cross-sectional studies, >3 analyses from high quality cross-sectional studies or ≥ analyses from 4 moderate quality cross-sectional studies, of which ≥75% find a significant association in the same direction
Limited evidence	1 analysis high/moderate quality cohort study and 2 analyses from moderate quality cross-sectional study, 3 analyses from high/moderate quality cross-sectional studies, or >3 analyses from low quality studies, of which ≥75% find a significant association in the same direction
No evidence	≥3 analyses, of which ≥75% find no association
Conflicting evidence	≥3 analyses, of which <75% show consistent findings

Significant association defined as $p<0.05$

3.3 Results

3.3.1 Study Characteristics

From the database search and additional searches, 14,866 non-duplicate articles were identified, of which 706 were full-text screened for eligibility (Figure 7). This resulted in the inclusion of 22 studies, one of which assessed anxiety symptoms only, seven assessed depressive symptoms only, and 14 assessed both anxiety and depressive symptoms. Key characteristics of the included studies are displayed in Table 11. The total number of participants included in the review was 3,284. Sample sizes of the included studies ranged from 29-1,286 participants, with a median of 59 participants (IQR: 42-125). The age range of participants was reported in 18 studies, and the overall age range of included studies was 5 to 25 years. Mean age was reported in 15 studies, with an overall mean of 16.2 years (SD±2.4). The proportion of females included in the sample was reported in 21 studies, ranging from 30% to 77%, and the overall mean percentage was 51.5%. In total, 13 (59.1%) studies were from the USA, five (22.7%) were from Europe, and two (9.1%) were from Australia. In addition, one study was from Canada and one study was multinational, including both European countries and the USA. None of the included studies were conducted in the UK. Of the 22 included studies, 19 used cross-sectional analyses, two used cohort analyses, and one used both cross-sectional and cohort analyses.

Five condition types were assessed in the included studies: three (13.6%) studies included children and young people with cancer, nine (40.9%) included children and young people with cystic fibrosis, four (18.2%) studied children and young people with HIV, four (18.2%) studied children and young people with chronic kidney disease (CKD), and a further two studies (9.1%) included children and young people with neurological conditions. One of these neurological studies included children and young people with paediatric multiple sclerosis and the other included children and young people with cerebral palsy. One study of cystic fibrosis was not included in the best evidence synthesis as none of the factors it assessed were studied in three or more analyses (Beinke, O'Callaghan and Morrissey, 2015).

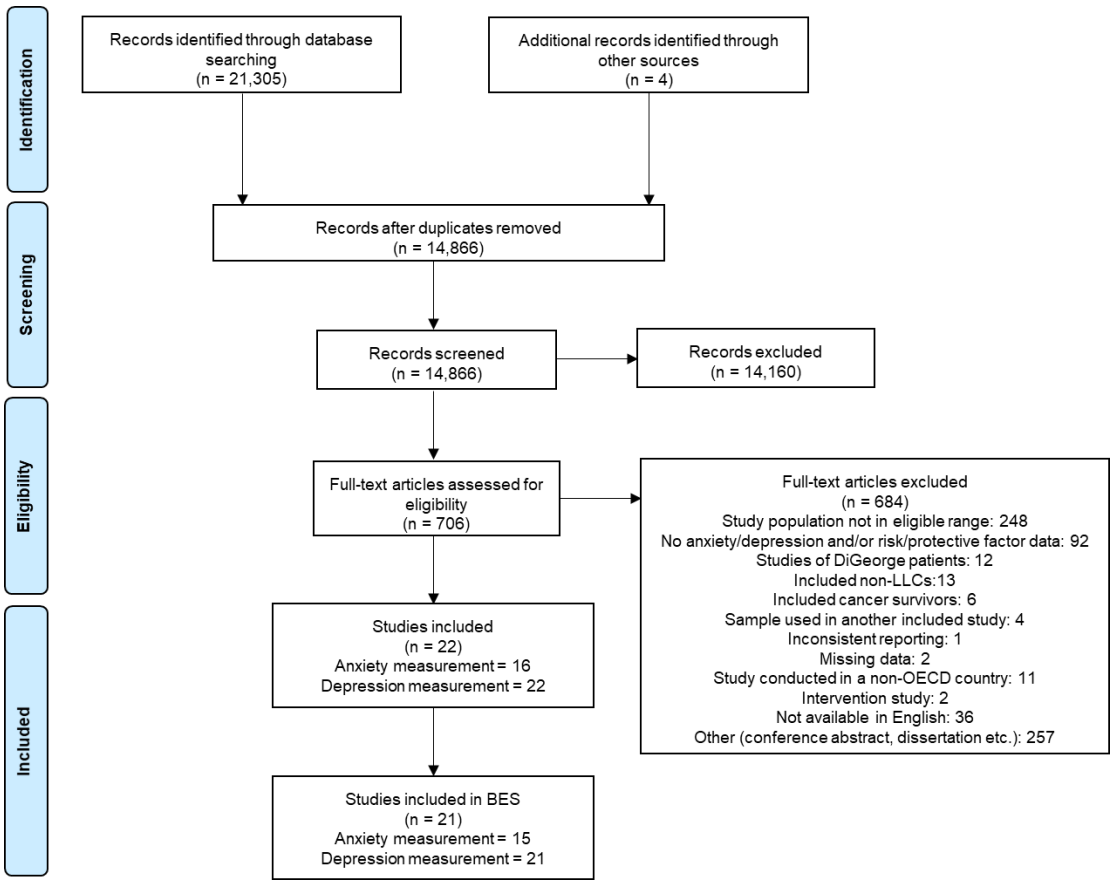

Figure 7. PRISMA Flow Diagram showing the inclusion of 22 studies from the 21,309 identified

Table 11. Key characteristics of the 22 studies included in the systematic review

Author & Publication Date	Location	Sample Size	Age Range, years (Mean ±SD)	No. of Females/Sample Size (%)	Year of Data Collection	Anxiety Measurement	Depression Measurement	Risk/Protective Factor Categories Studied	AXIS Tool Quality Assessment Score	Newcastle-Ottawa Quality Assessment Score
Cancer										
(Bemis et al., 2015)	USA	151	10-17 (13.5±2.4)	77/151 (51)	NR	×	✓	• Sociodemographic* • Clinical* • External stressors • Caregiver/family	11	NA
(Hedström, Ljungman and von Essen, 2005)	Sweden	56	13-19	24/56 (43)	1999-2003	✓	✓	• Sociodemographic* • Clinical • External stressors	13	NA
(Dobrozsi et al., 2017)	USA	29	8-21 (13.4)	12/29 (41)	2013-2014	✓	✓	• Sociodemographic* • Clinical*	NA	Fair
Cystic Fibrosis										
(Beinke, O'Callaghan and Morrissey, 2015)	Australia	49	16-25 (19.41±2.84)	30/49 (61)	NR	✓	✓	• Coping mechanisms • Caregiver/family	13	NA
(Bennett et al., 2008)	USA	87	7-18 (13.1±3.8)	49/87 (56)	NR	✓	✓	• Sociodemographic* • Clinical* • Coping mechanisms*	12	NA
(Bennett et al., 2015)	USA	44	9-23 (15.7±3.7)	23/44 (52)	NR	✓	✓	• Coping mechanisms*	NA	Poor
(Casier et al., 2008)	Belgium	34	(17.31±3.05)	18/34 (53)	NR	✓	✓	• Sociodemographic* • Clinical* • Coping mechanisms*	12	Fair

Author & Publication Date	Location	Sample Size	Age Range, years (Mean ±SD)	No. of Females/Sample Size (%)	Year of Data Collection	Anxiety Measurement	Depression Measurement	Risk/Protective Factor Categories Studied	AXIS Tool Quality Assessment Score	Newcastle-Ottawa Quality Assessment Score
(Casier et al., 2011)	Belgium	40	(18.40±2.87)	17/40 (43)	NR	✓	✓	• Sociodemographic* • Clinical* • Coping mechanisms*	17	NA
(Modi et al., 2011)	USA	59	(15.77±2.5)	27/59 (46)	2006-2008	✓	✓	• Sociodemographic* • Clinical*	14	NA
(Oliver et al., 2014)	USA	72	14-25 (19.1±3.3)	36/72 (50)	2010-2011	✓	✓	• Clinical* • Coping mechanisms*	13	NA
(Quittner et al., 2014)	Multi-national (Europe & USA)	1286	(14.84±1.69)	669/1286 (52)	NR	✓	✓	• Sociodemographic* • Clinical*	13	NA
(Smith, Cogswell and Garcia, 2014)	USA	38	7-17 (12.1±3.1)	20/38 (53)	2007	×	✓	• Sociodemographic* • Clinical*	13	NA
HIV										
(Bennett et al., 2016)	USA	88	12-24 (18.3±3.0)	39/88 (44)	NR	✓	✓	• Sociodemographic* • Clinical • Coping mechanisms	12	NA
(Murphy et al., 2001)	USA	230	13-19 (16.9±1.2)	177/230 (77)	NR	×	✓	• Sociodemographic* • Coping mechanisms • External stressors	11	NA
(Nachman et al., 2012)	USA	313	6-17	NR	2007	✓	✓	• Sociodemographic* • Clinical* • External stressors	16	NA

Author & Publication Date	Location	Sample Size	Age Range, years (Mean ±SD)	No. of Females/Sample Size (%)	Year of Data Collection	Anxiety Measurement	Depression Measurement	Risk/Protective Factor Categories Studied	AXIS Tool Quality Assessment Score	Newcastle-Ottawa Quality Assessment Score
(Salama et al., 2013)	USA	59	14-23 (18.8)	36/59 (61)	2002-2003	×	✓	• Sociodemographic* • Clinical* • Coping mechanisms	15	NA
Neurological Conditions										
(Till et al., 2012)	Canada	31	12-19 (16.1)	23/31 (74)	NR	×	✓	• Sociodemographic* • Clinical* • External stressors • Parental/family	14	NA
(Yamaguchi, Nicholson Perry and Hines, 2014)	Australia	61	5-15	23/61 (38)	NR	✓	✓	• Sociodemographic* • Clinical	14	NA
Chronic Kidney Disease										
(Kiliś-Pstrusińska et al., 2013)	Poland	137	8-18	57/137(42)	NR	✓	×	• Sociodemographic* • Clinical*	13	NA
(Kogon et al., 2013)	USA	44	7-18	13/44 (30)	2011-2012	×	✓	• Sociodemographic* • Clinical*	18	NA
(Kogon et al., 2016)	USA	344	6-17	142/344 (41)	2005-2008	×	✓	• Sociodemographic* • Clinical*	14	NA
(Kilicoglu et al., 2016)	Turkey	32	8-18	19/32 (59)	2014	✓	✓	• Clinical*	15	NA

*Factor(s) included in best evidence synthesis
NR: not reported

3.3.2 Study Quality

Cross-sectional Studies

Of the 20 studies with cross-sectional analysis, 14 (70.0%) were scored between 10-14 (moderate quality), and six (30.0%) were given a score of ≥15 (high quality) by the AXIS tool (Table 12). All studies had clear aims/objectives and used an appropriate design for the study aim(s), however none justified the sample size used. Regarding the study population, all of the studies clearly defined the target population, however only half used a representative sampling frame. In fact, seven studies (35.0%) selected their study population from only one medical facility. Of the 11 studies that reported the selection process used, nine (81.8%) used a method that was likely to produce a representative sample. However, 11 (55.0%) studies did not categorise non-responders. Although all studies measured the risk factor and outcome measures with appropriate tools which had been validated or used in previous publications, the poor and/or incomplete reporting of statistical methods meant that many studies are not replicable using the information provided in the methods section.

Basic descriptive analyses of the sample characteristics and relevant measurements were described adequately in the majority (80.0%) of studies. However, issues arose surrounding non-responders; of the ten studies which categorised non-responders, the low response rate in six studies raised concerns regarding non-response bias. Additionally, as only one of these studies provided information about non-responders, the extent of non-response bias could not be determined. Although 18 (90.0%) of the studies had internally consistent results, for three (15.0%) studies it was not possible to determine whether all planned analyses were reported in the results, as no analyses were described in the methods. The discussions and conclusions in all of the studies were justified by the results, and all studies discussed limitations. Of the 16 (80.0%) studies which provided information on conflicts of interest and funding sources, no conflicts were reported. Finally, 19 (95.0%) of the studies provided information on ethical approval or consent of participants, all of which reported undertaking one or both of these.

Table 12. Quality assessment of the 20 included cross-sectional studies using the AXIS tool

Author & Publication Date	Question Number																				Total	Quality Category
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Cancer																						
Bemis et al., 2015	✓	✓	×	✓	×	NR	×	✓	✓	✓	×	×	NR	NR	✓	✓	✓	✓	×	✓	12	Moderate
(Hedström, Ljungman and von Essen, 2005)	✓	✓	×	✓	✓	✓	×	✓	✓	×	×	✓	NR	NR	✓	✓	✓	✓	×	✓	15	High
Cystic Fibrosis																						
Beinke et al., 2015	✓	✓	×	✓	✓	✓	×	✓	✓	✓	×	✓	NR	NR	✓	NR	✓	✓	×	✓	14	Moderate
Bennett et al., 2008	✓	✓	×	✓	×	✓	✓	✓	✓	×	×	✓	×	×	✓	NR	✓	✓	NR	NR	12	Moderate
Casier et al., 2008	✓	✓	×	✓	×	✓	✓	✓	✓	×	×	✓	✓	×	✓	NR	✓	✓	NR	✓	12	Moderate
Casier et al., 2011	✓	✓	×	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	✓	✓	×	✓	17	High
Modi et al., 2011	✓	✓	×	✓	×	×	✓	✓	✓	×	×	✓	×	×	✓	✓	✓	✓	×	✓	14	Moderate
Oliver et al., 2014	✓	✓	×	✓	×	NR	×	✓	✓	×	×	✓	×	×	✓	✓	✓	✓	×	✓	13	Moderate
Quittner et al., 2014	✓	✓	×	✓	✓	NR	×	✓	✓	×	×	✓	NR	NR	✓	✓	✓	✓	×	✓	13	Moderate
(Smith, Cogswell and Garcia, 2014)	✓	✓	×	✓	×	✓	×	✓	✓	×	×	✓	NR	NR	×	✓	✓	✓	×	✓	13	Moderate
HIV																						
Bennett et al., 2016	✓	✓	×	✓	×	NR	✓	✓	✓	✓	×	×	✓	×	✓	✓	✓	✓	NR	✓	12	Moderate
Murphy et al., 2001	✓	✓	×	✓	✓	NR	×	✓	✓	×	×	×	NR	×	×	✓	✓	✓	×	✓	11	Moderate
Nachman et al., 2012	✓	✓	×	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	×	✓	✓	✓	✓	×	✓	16	High
Salama et al., 2013	✓	✓	×	✓	✓	NR	✓	✓	✓	×	×	✓	×	✓	✓	✓	✓	✓	NR	✓	15	High
Neurological Diseases																						
Till et al., 2012	✓	✓	×	✓	×	×	×	✓	✓	✓	✓	✓	NR	NR	✓	✓	✓	✓	×	✓	14	Moderate
(Yamaguchi, Nicholson Perry and Hines, 2014)	✓	✓	×	✓	NR	NR	✓	✓	✓	✓	×	✓	✓	×	✓	✓	✓	✓	×	✓	14	Moderate
CKD																						
Kilis-Pstrusinska et al., 2013	✓	✓	×	✓	✓	NR	×	✓	✓	✓	×	✓	NR	NR	✓	✓	✓	✓	×	✓	14	Moderate
Kogon et al., 2013	✓	✓	×	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	×	18	High
Kogon et al., 2016	✓	✓	×	✓	✓	NR	×	✓	✓	✓	×	✓	NR	NR	✓	✓	✓	✓	×	✓	14	Moderate
Kilicoglu et al., 2016	✓	✓	×	✓	×	✓	×	✓	✓	✓	✓	✓	NR	×	✓	✓	✓	✓	×	✓	15	High

NR: not reported *: not included in best evidence synthesis

Questions:

1) Were the aims/objectives of the study clear?
2) Was the study design appropriate for the stated aim(s)?
3) Was the sample size justified?
4) Was the target/reference population clearly defined? (Is it clear who the research was about?)
5) Was the sample frame taken from an appropriate population base so that it closely represented the target/reference population under investigation?
6) Was the selection process likely to select subjects/participants that were representative of the target/reference population under investigation?
7) Were measures undertaken to address and categorise non-responders?
8) Were the risk factor and outcome variables measured appropriate to the aims of the study?
9) Were the risk factor and outcome variables measured correctly using instruments/measurements that had been trialled, piloted or published previously?
10) Is it clear what was used to determine statistical significance and/or precision estimates? (eg, p values, CIs)
11) Were the methods (including statistical methods) sufficiently described to enable them to be repeated?
12) Were the basic data adequately described?
13) Does the response rate raise concerns about non-response bias?
14) If appropriate, was information about non-responders described?
15) Were the results internally consistent?
16) Were the results for the analyses described in the methods, presented?
17) Were the authors' discussions and conclusions justified by the results?
18) Were the limitations of the study discussed?
19) Were there any funding sources or conflicts of interest that may affect the authors' interpretation of the results?
20) Was ethical approval or consent of participants attained?

Total = number of positive responses (questions 13 and 19 negatively scored)

Cohort Studies

Of the three studies which used cohort analyses, two were classified by the Newcastle-Ottawa Scale as being fair quality, while one was rated as poor quality (Table 13). All of the studies gained the same score for the selection section of the scale, gaining stars for their somewhat representative samples, selection of non-exposed cohorts, and losing stars for assessing the exposures by written self-report measures, and not demonstrating that the outcome of interest was absent at study start. All three studies also received the maximum number of stars in the comparability section of the scale, as they all adjusted for multiple important confounders in their statistical analysis. Therefore, the only difference between the studies regarding study quality was reported in the outcome section of the scale. Although all of the studies lost a star for assessing the outcome by self-report measures, and gained a star by using a sufficient follow-up period to allow outcomes to occur, Dobrozsi et al. (2016) and Casier et al. (2011) provided a description of participants who were lost to follow up, whereas Bennett et al. (2015) did not.

Table 13. Quality assessment of the three included cohort studies using the Newcastle-Ottawa Scale

A study can be awarded a maximum of one star for each numbered item within the Selection and Outcome categories. A maximum of two stars can be given for Comparability.	**Author Name & Publication Date**		
	Dobrozsi et al. (2016)	Bennett et al. (2015)	Casier et al. (2011)
SELECTION			
1) Representativeness of the exposed cohort			
a) truly representative of the average _____ (describe) in the community*			
b) somewhat representative of the average _____ in the community*	✓*	✓*	✓*
c) selected group of users eg nurses, volunteers			
d) no description of the derivation of the cohort			
2) Selection of the non-exposed cohort			
a) drawn from the same community as the exposed cohort*	✓*	✓*	✓*
b) drawn from a different source			
c) no description of the derivation of the non-exposed cohort			
3) Ascertainment of exposure			
a) secure record (eg surgical records)*			

b) structured interview*			
c) written self-report	✓	✓	✓
d) no description			
A study can be awarded a maximum of one star for each numbered item within the Selection and Outcome categories. A maximum of two stars can be given for Comparability.	**Author Name & Publication Date**		
	Dobrozsi et al. (2016)	Bennett et al. (2015)	Casier et al. (2011)
SELECTION			
4) Demonstration that outcome of interest was not present at start of study			
a) yes*			
b) no	✓	✓	✓
Score	2	2	2
COMPARABILITY			
1) Comparability of cohorts on the basis of the design or analysis			
a) study controls for _____ (select the most important factor)*	✓*	✓*	✓*
b) study controls for any additional factor*	✓*	✓*	✓*
c) no description of the derivation of the non-exposed cohort			
Score	2	2	2
OUTCOME			
1) Assessment of outcome			
a) independent blind assessment*			
b) record linkage*			
c) self-report	✓	✓	✓
d) no description			
2) Was follow-up long enough for outcomes to occur?			
a) yes (select an adequate follow up period for outcome of interest)*	✓*	✓*	✓*
b) no			
3) Adequacy of follow up of cohorts			
a) complete follow up - all subjects accounted for*			
b) subjects lost to follow up unlikely to introduce bias - small number lost - > ____ % (select an adequate %) follow up, or description provided of those lost)*	✓*		✓*
c) follow up rate < ____% (select an adequate %) and no description of those lost		✓	
d) no statement			
Score	2	1	2
TOTAL SCORE	6	5	6
QUALITY RATING	Fair	Poor	Fair

✓*: star awarded for response
✓: no star awarded for response

3.3.3 Anxiety & Depression Assessment Tools

In total, six assessment tools were used to measure symptoms of anxiety, and nine assessment tools were used to measure depressive symptoms (Table 14). The most common tool used to measure anxiety symptoms was the anxiety subscale of the Hospital Anxiety and Depression Scale (HADS), which was used in five of the 15 studies measuring symptoms of anxiety. The Hospital Anxiety and Depression Scale (HADS) and the Children's Depression Inventory (CDI) were the most commonly used tools for measuring depressive symptoms, both of which were used in six of the included studies. Parent-report measures were used in three studies (Nachman et al., 2012, Till et al., 2012, Yamaguchi, Nicholson Perry and Hines, 2014).

Table 14. Anxiety and depression assessment tools used in the 22 included studies

Assessment Tool	Frequency of Use	
	Anxiety Studies	Depression Studies
Hospital Anxiety and Depression Scale (HADS)	6	6
Revised Child Anxiety and Depression Scale[a]	1	1
The Child and Adolescent Symptom Inventory-4R[a]	1	1
Patient-Reported Outcome Measurement Information System (PROMIS)	1	1
Depression Anxiety and Stress Scale (DASS)	1	1
The Behavior Assessment Scale for Children[a]	0	1
Youth Self-Report (YSR)	0	1
The State-Trait Anxiety Inventory for Children (STAI-C)	4	NA
Multidimensional Anxiety Scale for Children-10 (MASC-10)	1	NA
Children's Depression Inventory (CDI)	NA	6
The Center for Epidemiological studies Depression Scale (CES-D)	NA	3
Beck Depression Inventory (BDI)	NA	1

[a] parent-report used

3.3.4 Best Evidence Synthesis Results

A total of 78 factors were analysed in the included studies (Table 15). These were categorised into **sociodemographic** factors (n=8), **clinical** factors related to the child or young person's diagnosis, treatment or disease severity (n=44), factors related to **coping style** (n=10), factors which represented **stressors** (n=4), factors related to a child or young person's **social environment** (n=4), and factors related to a child or young person's **caregiver/family** (n=7).

Table 15. Categorisation of factors analysed in the 22 included studies

Category	Factor	Number of Analyses – Anxiety Symptoms	Number of Analyses – Depressive Symptom
Sociodemographic	Age	8♦	12♦
	Sex	12♦	14♦
	Socioeconomic status (SES)	3♦	6♦
	Academic functioning	1	3♦
	Intelligence	1	3♦
	Intellectual impairment	1	1
	Need for additional school support	0	1
	Ethnicity	0	2
Clinical	Age at diagnosis	4♦	3♦
	Time since diagnosis	7♦	8♦
	Current psychiatric medication	1	1
	Current psychotherapy	1	1
	Disability status	2	2
	Fatigue	1	1
	Health-related quality of life	0	1
	History of surgery	1	1
	History of psychiatric diagnosis	0	1
	Hypertension status	0	1
	Intravenous antibiotics	1	1
	Medication use	0	2
	Number of disabilities	1	1
	Number of hospitalisations	2	0
	Pain	1	1
	Pain anxiety	1	1
	Pain frequency	1	1
	Pain intensity	1	1
	Place of treatment	1	1
	Presence of epilepsy	1	1
	Presence of hearing impairment	1	1
	Presence of visual impairment	1	1
	Presence of speech impairment	1	1
	Recent surgery	1	1
	Systolic blood pressure	0	1
	Weight loss/gain	1	1
Clinical Factors – Cystic Fibrosis	Respiratory function (FEV1%)	6♦DS	7♦DS
	Recent haemoptysis/pneumothorax	1	1
	Vitamin D	0	1
Clinical Factors - HIV	HIV viral load	6♦DS	7♦DS
	Nadir CD4%	1♦DS	1♦DS
	Age at nadir CD4%	1	1
	Age at peak HIV RNA viral load	1	1
	CDC class	1	2
	Mode of HIV transmission	1	1
Clinical – Neurological Conditions	Total brain lesion volume	1♦DS	1♦DS

Category	Factor	Number of Analyses – Anxiety Symptoms	Number of Analyses – Depressive Symptom
Clinical – Chronic Kidney Disease	Creatinine level	2♦DS	1♦DS
	Glomerular filtration rate (GFR)	2♦DS	3♦DS
	Haemoglobin level	4♦DS	1♦DS
	CKD treatment type	2	0
	Aetiology of CKD/ESRD	2	1
	Renal replacement status	0	1
Clinical - Cancer	Cancer diagnostic group	1	1
	Intensity of cancer therapy	1	1
Coping Style	Acceptance	3♦	3♦
	Blunting	3♦	2
	Monitoring	3♦	2
	Optimism	3♦	2
	Abstract reasoning	0	1
	Approach/adaptive coping	0	2
	Avoidant coping	1	2
	Cognitive inflexibility	0	1
	Guilt-proneness	1	1
	Shame-proneness	1	1
Stressors	Cancer-related stress	0	1
	Cancer-related distress	1	1
	Social stress	1	1
	Stressful life events	0	1
Social Environment	Stigma	1	1
	HIV-related stigma	1	1
	Satisfaction with social support	0	1
	Social functioning	0	1
Caregiver/Family	Caregiver anxiety	1	1
	Caregiver depression	1	2
	Family structure	2	0
	Maternal cancer-related stress	0	1
	Maternal stress	0	1
	Relations with parents	1	1
	Social constraints with parents	1	1

♦ Factor independently included in best evidence synthesis

♦DS Factor included as part of the disease severity best evidence synthesis

For anxiety symptoms, a best evidence synthesis was performed for three sociodemographic factors (sex, age, socioeconomic status), three clinical factors (age at diagnosis, time since diagnosis, disease severity) and four factors regarding coping style (optimism, acceptance, monitoring, blunting). For depressive symptoms, a best evidence synthesis was conducted for five sociodemographic factors (sex, age, socioeconomic status, intelligence, academic functioning), five clinical factors (age at diagnosis, BMI, height, time since diagnosis, disease severity) and one factor regarding coping style (acceptance). For the best evidence syntheses assessing the associations between disease severity and anxiety/depressive symptoms, condition-specific severity measures (e.g. forced expiratory volume (FEV) for cystic fibrosis and HIV RNA viral load) were combined.

The results of the best evidence syntheses are summarised in Figure 8. Tables 16-23 are colour-coded in accordance to Figure 8, whereby pink is used to highlight factors for which no evidence for a significant association with anxiety/depressive symptoms was found, orange is used to highlight factors for which conflicting evidence for a significant association with anxiety/depressive symptoms was found, and green is used to highlight factors for which limited evidence for a significant association with anxiety/depressive symptoms was found.

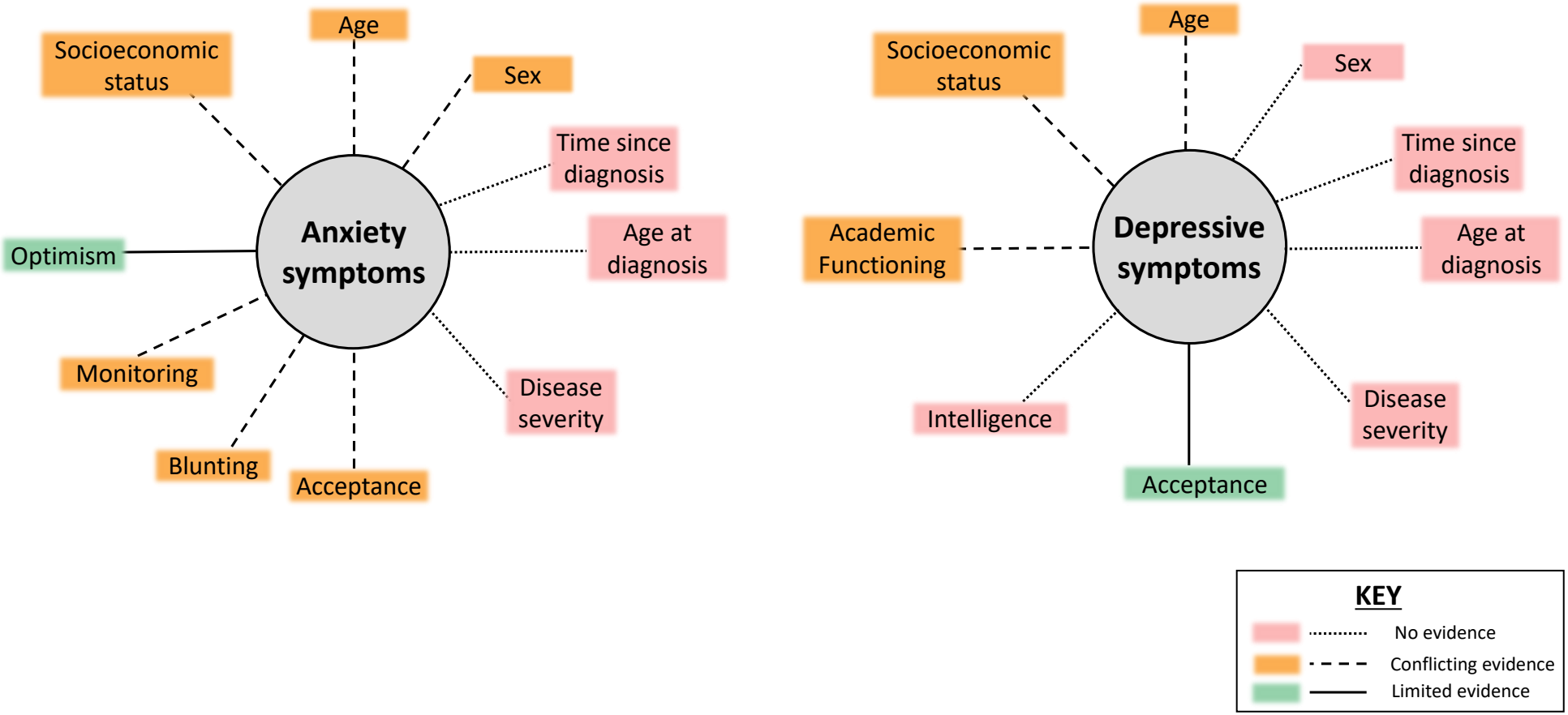

Figure 8. Diagram displaying the results for the best evidence synthesis of each factor and anxiety/depressive symptoms

Sociodemographic Factors

Conflicting evidence was found for the associations between anxiety symptoms and sex, age, and socioeconomic status (SES) (Table 16). The association between sex and anxiety symptoms was assessed in 12 analyses (n=2,092) from ten studies. Four analyses (33.3%) found a significant positive association between female sex and anxiety symptoms, while eight analyses (66.7%) found no significant association. The association between age and anxiety symptoms was assessed in eight analyses (n=1,710) from seven studies, two (25.0%) of which found a significant positive association, two (25.0%) found a significant negative association, and four (50.0%) found no significant association. The association between socioeconomic status (SES) and anxiety symptoms was assessed in three analyses (n=262) from two studies, one of which found a significant negative association, while the remaining two analyses found no significant association.

Table 16. Level of evidence for associations between sociodemographic factors and anxiety symptoms

Evidence Level	Factor	Author Name & Date	Sample Size	Life-limiting condition	Study Design	Study Quality	Type of Association Found
Conflicting evidence	Female Sex	Dobrozsi et al. (2016)	29	Cancer	CO	Moderate	None
		Hedstrom et al. (2005	56	Cancer	CS	Moderate	Positive
		Bennett et al. (2008)	87	Cystic fibrosis	CS	Moderate	None (state)
							None (trait)
		Casier et al. (2008)	34	Cystic fibrosis	CS	Moderate	None
		Modi et al. (2011)	59	Cystic fibrosis	CS	Moderate	Positive
		Quittner et al. (2014)	1286	Cystic fibrosis	CS	Moderate	Positive
		Bennett et al. (2016)	88	HIV	CS	Moderate	Positive
		Kilis-Pstrusinka et al. (2013)	137	Chronic kidney disease	CS	Moderate	None (state)
							None (trait)
		Till et al. (2011)	31	Neurological condition	CS	Moderate	None
		Yamaguchi et al. (2013)	61	Neurological condition	CS	Moderate	None
	Age	Dobrozsi et al. (2016)	29	Cancer	CO	Moderate	Negative
		Bennett et al. (2008)	87	Cystic fibrosis	CS	Moderate	None (state)
							Negative (trait)
		Casier et al. (2008)	34	Cystic fibrosis	CS	Moderate	None
		Casier et al. (2011)	40	Cystic fibrosis	CS	Moderate	None
		Modi et al. (2011)	59	Cystic fibrosis	CS	Moderate	Positive
		Quittner et al. (2014)	1286	Cystic fibrosis	CS	Moderate	None
		Bennett et al. (2016)	88	HIV	CS	Moderate	Positive
	SES	Bennett et al. (2008)	87	Cystic fibrosis	CS	Moderate	None (state)[a]
							None (trait)[a]
		Bennett et al. (2016)	88	HIV	CS	Moderate	Negative [b]

CO = cohort, CS = cross-sectional
SES = socioeconomic status [a] parental education and occupation, [b] maternal education

Conflicting evidence was also found for associations between depressive symptoms and age, socioeconomic status (SES), and academic functioning (Table 17). The association between age and depressive symptoms was measured in 12 analyses (n=2,449) from 12 studies, two (16.7%) of which found a significant positive association, one found a significant negative association, and nine (75.0%) found no significant association. The association between socioeconomic status (SES) and depressive symptoms was studied in six analyses (n=972) from four studies, two (33.3%) of which found a significant negative association while four (66.7%) found no significant association. The association between academic functioning and depressive symptoms was explored in three analyses from three studies, with a total of 716 participants. One analysis found a significant negative association, while two (66.7%) found no significant association.

There was no evidence for a significant association between sex and depressive symptoms. This was measured in 14 analyses (n=2,446) from 14 studies, one of which found a significant positive association between female sex and depressive symptoms, while 13 (92.9%) found no significant association. There was also no evidence for a significant association between intelligence and depressive symptoms, which was analysed in three analyses from three studies (n=688), none of which found a significant association.

Table 17. Level of evidence for associations between sociodemographic factors and depressive symptoms

Evidence Level	Factor	Author Name & Date	Sample Size	Life-limiting condition	Study Design	Study Quality	Type of Association Found
Conflicting evidence	Age	Dobrozsi et al. (2016)	29	Cancer	CO	Moderate	Negative
		Bemis et al. (2015)	151	Cancer	CS	Moderate	None
		Bennett et al. (2008)	87	Cystic fibrosis	CS	Moderate	None
		Casier et al. (2008)	34	Cystic fibrosis	CS	Moderate	None
		Modi et al. (2011)	59	Cystic fibrosis	CS	Moderate	Positive
		Quittner et al. (2014)	1286	Cystic fibrosis	CS	Moderate	None
		Smith et al. (2014)	38	Cystic fibrosis	CS	Moderate	None
		Bennett et al. (2016)	88	HIV	CS	Moderate	Positive
		Murphy et al. (2000)	230	HIV	CS	Moderate	None
		Salama et al. (2013)	59	HIV	CS	Moderate	None
		Kogon et al. (2013)	44	Chronic kidney disease	CS	High	None
		Kogon et al. (2016)	344	Chronic kidney disease	CS	Moderate	None
	SES	Bemis et al. (2015)	151	Cancer	CS	Moderate	None[a]
							None[b]
							None[c]
		Bennett et al. (2008)	87	Cystic fibrosis	CS	Moderate	None[d]
		Bennett et al. (2016)	88	HIV	CS	Moderate	Negative[b]
		Kogon et al. (2016)	344	Chronic kidney disease	CS	Moderate	Negative[b]
	Academic functioning	Nachman et al. (2012)	313	HIV	CS	High	Negative
		Salama et al. (2013)	59	HIV	CS	Moderate	None
		Kogon et al. (2016)	344	Chronic kidney disease	CS	Moderate	None
No evidence	Female Sex	Dobrozsi et al. (2016)	29	Cancer	CO	Moderate	None

Evidence Level	Factor	Author Name & Date	Sample Size	Life-limiting condition	Study Design	Study Quality	Type of Association Found
		Hedstrom et al. (2005)	56	Cancer	CS	Moderate	None
		Bennett et al. (2008)	87	Cystic fibrosis	CS	Moderate	None
		Casier et al. (2008)	34	Cystic fibrosis	CS	Moderate	None
		Modi et al. (2011)	59	Cystic fibrosis	CS	Moderate	None
		Quittner et al. (2014)	1286	Cystic fibrosis	CS	Moderate	None
		Smith et al. (2014)	38	Cystic fibrosis	CS	Moderate	None
		Bennett et al. (2016)	88	HIV	CS	Moderate	Positive
		Murphy et al. (2000)	230	HIV	CS	Moderate	None
		Salama et al. (2013)	59	HIV	CS	Moderate	None
		Till et al. (2011)	31	Neurological conditions	CS	Moderate	None
		Yamaguchi et al. (2013)	61	Neurological conditions	CS	Moderate	None
		Kogon et al. (2013)	44	Chronic kidney disease	CS	High	None
		Kogon et al. (2016)	344	Chronic kidney disease	CS	Moderate	None
	Intelligence	Nachman et al. (2012)	313	HIV	CS	High	None
		Till et al. (2011)	31	Neurological conditions	CS	Moderate	None
		Kogon et al. (2016)	344	Chronic kidney disease	CS	Moderate	None

CO = cohort, CS = cross-sectional
SES = socioeconomic status [a]annual family income [b]maternal education [c]single parenthood [d]parental education and occupation

Clinical Factors

No evidence was found for significant associations between anxiety symptoms and age at diagnosis or time since diagnosis, with none of the analyses finding a significant association (Table 18). There was also no evidence for a significant association between disease severity and anxiety symptoms, which was assessed in 26 analyses, including a total of 4,833 children and young people with either cystic fibrosis, HIV, neurological conditions, or chronic kidney disease (Table 19).

Table 18. Level of evidence for associations between general clinical factors and anxiety symptoms

Evidence Level	Factor	Author Name & Date	Sample Size	Life-limiting condition	Study Design	Study Quality	Type of Association Found
No evidence	Age at diagnosis	Kilicoglu et al. (2016)	32	Chronic kidney disease	CS	Moderate	None (state) None (trait)
		Kilis-Pstrusinka et al. (2013)	137	Chronic kidney disease	CS	Moderate	None (state) None (trait)
	Time since diagnosis	Dobrozsi et al. (2016)	29	Cancer	CO	Moderate	None
		Casier et al. (2008)	34	Cystic fibrosis	CS	Moderate	None
		Casier et al. (2011)	40	Cystic fibrosis	CS	Moderate	None
		Kilicoglu et al. (2016)	32	Chronic kidney disease	CS	Moderate	None (state) None (trait)
		Kilis-Pstrusinka et al. (2013)	137	Chronic kidney disease	CS	Moderate	None (state) None (trait)

CO = cohort, CS = cross-sectional

Table 19. Level of evidence for associations between disease severity markers and anxiety symptoms

Evidence Level	Author Name & Date	Sample Size	Study Design	Study Quality	Disease Severity Marker	Type of Association Found
No evidence	**Cystic Fibrosis**					
	Bennett et al. (2008)	87	CS	Moderate	FEV1%	None (state)
						None (trait)
	Casier et al. (2008)	34	CS	Moderate	FEV1%	None
	Casier et al. (2011)	40	CS	Moderate	FEV1%	None
	Modi et al. (2011)	59	CS	Moderate	FEV1%	None
	Oliver et al. (2014)	72	CS	Moderate	FEV1%	None
	Quittner et al. (2014)	1286	CS	Moderate	FEV1%	None
	HIV					
	Mellins et al. (2012)	196 (BL), 166 (FU)	CS	Moderate	CD4+ cell count	None (BL)
						None (FU)
					HIV RNA viral load >100,000	None (BL)
						None (FU)
					Undetectable viral load	None (BL)
						None (FU)
	Nachman et al. (2012)87	313	CS	High	CD4% at study entry	None
					HIV RNA viral load at study entry	None
					Nadir CD4%	None
					Peak HIV RNA viral load	None
	Neurological Conditions					
	Till et al. (2011)	31	CS	Moderate	Total brain lesion volume	None
	Chronic Kidney Disease					
	Kilicoglu et al. (2016)	32	CS	Moderate	Haemoglobin	None (state)
						None (trait)
	Kilis-Pstrusinka et al. (2013)	137	CS	Moderate	eGFR	None (state)
						None (trait)
					Haemoglobin	None (state)
						None (trait)
					Serum creatine	None (state)
						None (trait)

CO = cohort, CS = cross-sectional
BL = baseline, FU = follow-up
eGFR = estimated glomerular filtration rate

Similarly, no evidence was found for a significant association between depressive symptoms and any of the clinical factors (age at diagnosis, time since diagnosis, disease severity) (Table 20 & 21). The association between disease severity and depressive symptoms was studied in 25 analyses (n=5,211), two of which found a significant positive association between disease severity and depressive symptoms, while the remaining analyses found no significant association.

Table 20. Level of evidence for associations between general clinical factors and depression

Evidence Level	Factor	Author Name & Date	Sample Size	Life-limiting condition	Study Design	Study Quality	Type of Association Found
No evidence	Age at diagnosis	Kilicoglu et al. (2016)	32	Chronic kidney disease	CS	Moderate	None
		Kogon et al. (2013)	44	Chronic kidney disease	CS	High	None
		Kogon et al. (2016)	344	Chronic kidney disease	CS	Moderate	None
	Time since diagnosis	Dobrozsi et al. (2016)	29	Cancer	CO	Moderate	None
		Bemis et al. (2015)	151	Cancer	CS	Moderate	None
		Casier et al. (2008)	34	Cystic fibrosis	CS	Moderate	None
		Casier et al. (2011)	40	Cystic fibrosis	CS	Moderate	None
		Salama et al. (2013)	59	HIV	CS	Moderate	None
		Kilicoglu et al. (2016)	32	Chronic kidney disease	CS	Moderate	None
		Kogon et al. (2013)	44	Chronic kidney disease	CS	High	None
		Kogon et al. (2016)	344	Chronic kidney disease	CS	Moderate	None

CO = cohort, CS = cross-sectional

Table 21. Level of evidence for associations between disease severity markers and depressive symptoms

Evidence Level	Author Name & Date	Sample Size	Study Design	Study Quality	Disease Severity Marker	Type of Association Found
No evidence	**Cystic Fibrosis**					
	Bennett et al. (2008)	87	CS	Moderate	FEV1%	None
	Casier et al. (2008)	34	CS	Moderate	FEV1%	None
	Casier et al. (2011)	40	CS	Moderate	FEV1%	None
	Modi et al. (2011)	59	CS	Moderate	FEV1%	None
	Oliver et al. (2014)	72	CS	Moderate	FEV1%	None
	Quittner et al. (2014)	1286	CS	Moderate	FEV1%	None
	Smith et al. (2014)	38	CS	Moderate	FEV1%	None
	HIV					
	Mellins et al. (2012)	196 (baseline) 166 (follow-up)	CS	Moderate	CD4+ cell count	None (BL)
						None (FU)
					HIV RNA viral load >100,000	None (BL)
						None (FU)
					Undetectable viral load	None (BL)
						None (FU)
	Nachman et al. (2012)	313	CS	High	CD4%	Positive
					HIV RNA viral load	Positive
					Nadir CD4%	None
					Peak HIV RNA viral load	None
	Salama et al. (2013)	59	CS	Moderate	Recent HIV RNA viral load	None
					CD4+ cell count	None
	Neurological Conditions					
	Till et al. (2011)	31	CS	Moderate	Total brain lesion volume	None
	Chronic Kidney Disease					
	Kilicoglu et al. (2016)	32	CS	Moderate	Haemoglobin	None
	Kogon et al. (2013)	44	CS	High	GFR	None
	Kogon et al. (2016)	344	CS	Moderate	GFR	None
					Longitudinal GFR	None
				Moderate	Urine protein: creatinine ratio	None

CO = cohort, CS = cross-sectional
BL = baseline, FU = follow-up
GFR = glomerular filtration rate

Coping Style

Limited evidence was found for an association between optimism and anxiety symptoms, which was measured in three analyses (n=246) from two studies, all of which found a significant negative association (Table 22). Conflicting evidence was found for associations between anxiety symptoms and acceptance, monitoring, and blunting. The association between acceptance and anxiety symptoms was assessed in three analyses (n=102) from two studies, two (66.7%) of which found a significant negative association, while one analysis found no significant association. The association between monitoring and anxiety symptoms was measured in three analyses (n=218) from two studies; one analysis found a significant positive association, while two analyses (66.7%) found no significant association. The association between blunting and anxiety symptoms was measured in three analyses (n=218); one found a significant positive association, one found a significant negative association, and one found no significant association.

Table 22. Level of evidence for associations between coping style and anxiety symptoms

Evidence Level	Factor	Author Name & Date	Sample Size	Life-limiting condition	Study Design	Study Quality	Type of Association Found
Limited evidence	Optimism	Bennett et al. (2008)	87	Cystic fibrosis	CS	Moderate	Negative (state)
							Negative (trait)
		Oliver et al. (2014)	72	Cystic fibrosis	CS	Moderate	Negative
Conflicting evidence	Acceptance	Casier et al. (2008)	34	Cystic fibrosis	CS	Moderate	Negative
		Casier et al. (2011)	40	Cystic fibrosis	CS	Moderate	Negative
			28		CO	Moderate	None
	Monitoring	Bennett et al. (2008)	87	Cystic fibrosis	CS	Moderate	None (state)
							Positive (trait)
		Bennett et al. (2015)	44	Cystic fibrosis	CO	Low	None
	Blunting	Bennett et al. (2008)	87	Cystic fibrosis	CS	Moderate	None (state)
							Positive (trait)
		Bennett et al. (2015)	44	Cystic fibrosis	CO	Low	Negative

CO = cohort, CS = cross-sectional

Limited evidence was found for an association between acceptance and depressive symptoms, which was assessed in three analyses (n=102) from two studies, all of which found a significant negative association (Table 23).

Table 23. Level of evidence for associations between coping style and depressive symptoms

Evidence Level	Factor	Author Name & Date	Sample Size	Life-limiting condition	Study Design	Study Quality	Type of Association Found
Limited evidence	Acceptance	Casier et al. (2008)	34	Cystic fibrosis	CS	Moderate	Negative
		Casier et al. (2011)	40	Cystic fibrosis	CS	Moderate	Negative
			28		CO	Moderate	Negative

CO = cohort, CS = cross-sectional

3.4 Discussion

3.4.1 Key Findings

This chapter describes the systematic review and best evidence synthesis conducted to explore the factors that have been found to be associated with symptoms of anxiety and depression in children and young people with life-limiting conditions. This review included 22 studies; one assessed anxiety symptoms, seven assessed depressive symptoms, and 14 assessed anxiety and depressive symptoms.

Findings from the best evidence synthesis indicated that there was conflicting evidence for an association between the majority of sociodemographic factors, such as age and socioeconomic status, and symptoms of anxiety or depression. In addition, whilst conflicting evidence was found for a significant association between sex and anxiety symptoms, no evidence was found for an association between sex and symptoms of depression. These results are unexpected given the strong associations between sociodemographic factors and both anxiety and depression found among children and young people in the general population and those with chronic conditions (Adams, Chien and Wisk, 2019, Lemstra et al., 2008, NHS Digital, 2018a).

No evidence was found for an association between disease severity and anxiety or depressive symptoms. Previous studies have found an inconsistent relationship between disease severity and measures of psychological functioning (Bennett, 1994). Interestingly, a study of adolescents with chronic illnesses found no association

between depressive symptoms and disease severity rated by clinicians, however an association was found between depressive symptoms and patient-rated disease severity (Key et al., 2001). This suggests that a child's perception of their illness may be more crucial to their psychological functioning than clinical disease severity, and that any impact of disease severity on mental health may be moderated or mediated by other factors such as coping style. Indeed, the importance of coping style was highlighted in this review, which found limited evidence for the protective roles of optimism and acceptance in the development of anxiety and depressive symptoms, respectively. This aligns with the substantive body of evidence regarding the relationship between coping styles and psychological adjustment among children and young people with chronic conditions (Compas et al., 2012). Additionally, limitations to a child or young person's ability to participate in activities associated with a normal life, such as school, work or recreation, and peer victimisation have been found to mediate the association between the presence of a chronic condition and anxiety or depression (Adams, Chien and Wisk, 2019, Brady, Deighton and Stansfeld, 2020). Therefore, it is possible that the social isolation and alienation resulting from the presence of a chronic or life-limiting condition has more of an influence on a child or young person's mental health than the severity of the symptoms associated with the condition.

3.4.2 Strengths & Limitations

There are a number of strengths of this review. Namely, it is the first systematic review to assess factors associated with anxiety and depression in children and young people with life-limiting conditions. In addition, the comprehensive search strategy used allowed for the identification and inclusion of all relevant studies. Although a meta-analysis was not possible, the use of best evidence synthesis methodology allowed for a comprehensive review of the evidence base, using the key domains required to rate the strength of evidence (West et al., 2002).

It is important to note, however, that limitations in the research base limited the strength of the conclusions which could be drawn from this review. First, the range of life-limiting conditions which have been studied is narrow, and there is a significant under-representation of studies assessing children and young people with neurological conditions. This limits the ability to generalise the results of this review to children and

young people with other life-limiting conditions. Additionally, it means that some factors, or categories of factors, have only been investigated in one diagnostic group, such as coping style, which has only been explored in cystic fibrosis.

The methodological limitations of the included studies further limit the conclusions that can be drawn from the review. Many of the studies had very small sample sizes, and none justified the sample sizes that were used. Therefore, these studies may have been underpowered to detect existing associations. Several studies also did not justify the rationale for investigating certain factors as risk or protective factors for anxiety or depressive symptoms, limiting the understanding of the results from such analyses. Many of the included studies also did not use multivariable analysis, reducing the validity of their findings, particularly given the interdependence of the factors associated with anxiety and depressive symptoms. In addition, most of the studies used a cross-sectional design, therefore the temporality of the associations could not be explored in these studies. Finally, most of the assessment tools used in the studies have not been validated for use in children and young people with life-limiting conditions, thereby potentially reducing the validity of the findings reported by the studies (Thabrew et al., 2017).

3.5 Chapter Summary

This chapter has outlined the systematic review and best evidence synthesis conducted to identify the factors that have been found to be associated with anxiety and depressive symptoms among children and young people with life-limiting conditions, as set out in the second objective of this thesis. This review found conflicting evidence for associations between some sociodemographic factors, such as age and socioeconomic status, and symptoms of anxiety or depression. Conflicting evidence was also shown for an association between sex and anxiety symptoms, whereas no evidence was found for an association between sex and depressive symptoms. In addition, no evidence was found for associations between disease severity and symptoms of anxiety and depression. Limited evidence was shown for the protective roles of optimism and acceptance in the development of anxiety and depressive symptoms, respectively. However, many of the studies included in the review had very small sample sizes and therefore may have been underpowered to detect existing associations. Furthermore, the range of life-limiting conditions studied was narrow. The next chapter will describe the methods used to conduct a comparative cohort study, in order to explore the incidence of anxiety and depression, and the associated risk and protective factors, among children and young people with life-limiting conditions, chronic conditions or no long-term conditions.

Chapter 4: The Incidence of Anxiety and Depression in Children and Young People with Life-Limiting Conditions, Chronic Conditions or No Long-Term Conditions: A Comparative Cohort Study – Methods

4.1 Introduction

The systematic reviews described in Chapters 2 and 3 demonstrated the limitations of the existing research into the epidemiology of anxiety and depression among children and young people with life-limiting conditions, which has focused on a narrow range of life-limiting conditions using mainly small cross-sectional studies. Consequently, the results of these studies cannot reliably be generalised to the whole population of children and young people with life-limiting conditions, and therefore the epidemiology of anxiety and depression in this population cannot reliably be compared to that observed among the general population of children and young people. Therefore, this chapter describes the methods used to conduct a longitudinal, comparative cohort study in order to address objectives 3 and 4 as outlined in Chapter 1:

- *To use primary and secondary healthcare data from England to analyse the incidence of anxiety and depression in children and young people with life-limiting conditions and compare this to the incidence among those with chronic conditions and those with no long-term conditions*
- *To use primary and secondary healthcare data from England to examine what factors are associated with the incidence of anxiety and depression in children and young people with life-limiting conditions, and to explore whether these associations differ from those found among children and young people with chronic conditions and those with no long-term conditions*

These objectives were met by answering the following research questions:

1. What is the incidence of anxiety in children and young people with life-limiting conditions and how does this compare to the incidence in children and young people with chronic conditions or no long-term conditions?
2. What is the incidence of depression in children and young people with life-limiting conditions and how does this compare to the incidence in children and young people with chronic conditions or no long-term conditions?

3. What is the incidence of anxiety and/or depression in children and young people with life-limiting conditions and how does this compare to the incidence in children and young people with chronic conditions or no long-term conditions?
4. What factors are associated with the incidence of anxiety in children and young people with life-limiting conditions and how do these compare to the factors associated with the incidence of anxiety in children and young people with chronic conditions or no long-term conditions?
5. What factors are associated with the incidence of depression in children and young people with life-limiting conditions and how do these compare to those associated with the incidence of depression in children and young people with chronic conditions or no long-term conditions?
6. What factors are associated with the incidence of anxiety and/or depression in children and young people with life-limiting conditions and how do these compare to those associated with the incidence of anxiety and/or depression in children and young people with chronic conditions or no long-term conditions?

The results of these analyses are described in Chapter 5.

4.2 Data Sources

4.2.1 Clinical Practice Research Datalink (CPRD)

Data for this study was sourced from the Clinical Practice Research Datalink (CPRD) and linked datasets. The CPRD is one of the largest longitudinal primary care databases in the world, with data from over 50 million patients registered at over 1,900 primary care practices in the UK (CPRD, 2020c). Patients within CPRD are broadly representative of the UK population regarding age, sex, and ethnicity (Herrett et al., 2015). Furthermore, the validity of recorded diagnoses in CPRD has been found to be very high (Herrett et al., 2010).

The current study used data from CPRD GOLD, which contains data from practices that use Vision® software. In order to access CPRD data, approval must first be gained from CPRD's Independent Scientific Advisory Committee (ISAC). The ISAC application for this study was submitted as part of a wider study investigating the health of mothers of

children and young people with a life-limiting condition (CPRD ISAC reference number 16_877) (Fraser et al., 2020b).

After approval has been obtained from ISAC, the data from CPRD is provided to researchers as a set of ten pseudonymised data files, whereby each patient in the dataset is assigned a unique patient identifier by CPRD, which allows their information to be linked across the data files. The last three numbers of the patient identifier indicate the pseudonym of the practice at which the patient is registered. An overview of the data contained in each file is shown in Table 24.

Table 24. Summary of data included in CPRD data files

File Name	Data Included in File
Patient	Patient identifier, registration information and basic demographic data
Practice	Practice identifier, practice region, last collection date and up to standard date for the practice
Staff	Details of staff at practice
Consultation	Details regarding type of consultation
Clinical	Medical data, including diagnoses and symptoms, coded using Read codes
Additional Clinical Details	Additional information regarding medical data
Referral	Information regarding patient referral to external care centres
Immunisation	Details of immunisations
Test	Details of medical tests
Therapy	Prescription details including product name and British National Formulary code

Registration Information

Two registration dates are provided for each patient in the dataset. The 'First Registration Date' refers to the date at which the patient first registered with the practice. However, as patients can transfer out of the practice and then later re-register at the practice, the 'Current Registration Date' is also important as this refers to the date at which the patient's current period of registration with the practice began. If a patient does not have any 'transfer out periods' then their Current Registration Date is the same as their First Registration Date (Figure 9).

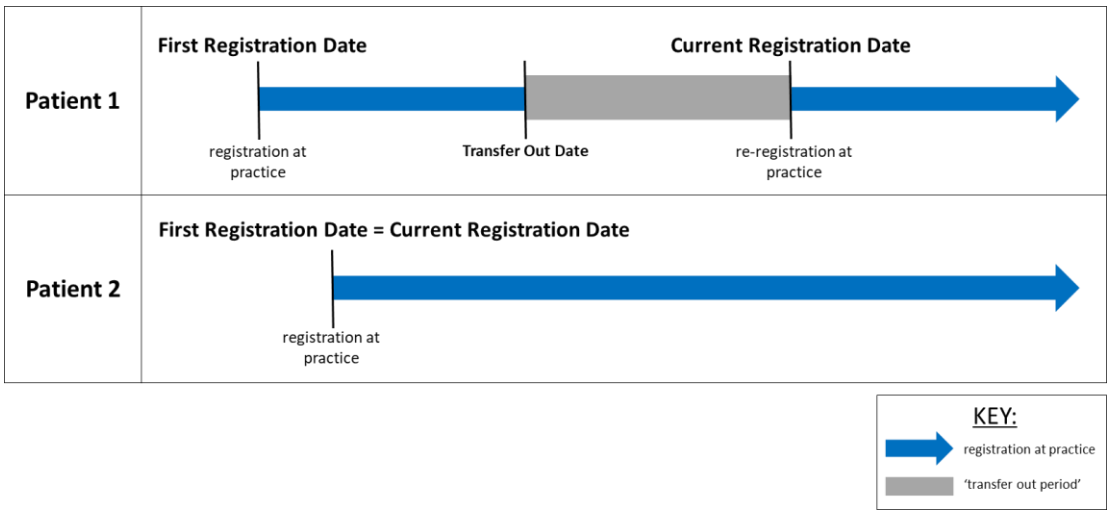

Figure 9. Diagram displaying registration scenarios for two patients within CPRD
Patient 1 registers at practice, transfers out and then re-registers, therefore their Current Registration Date is different to their First Registration Date. Patient 2 registers at practice and does not transfer out, therefore their Current Registration is the same as their First Registration Date.

Practice Data Collection Information

For each practice an 'Up To Standard Date' is provided, which is the date at which the practice data is deemed to be of research quality, and is derived using an algorithm that primarily assesses the recording of deaths and gaps in the data at the practice. The last data collection date for each practice is also provided, named the 'Last Collection Date'.

Medical information

In primary care, medical information is recorded using the Read coding system, which was developed by Dr James Read in the 1980s and is now used by GPs throughout the UK (Booth, 1994). Each Read code maps to a health-related concept such as a diagnosis or symptom, and forms a hierarchical structure (Booth, 1994). Each Read code has been mapped to a 'medcode', a numeric identifier, by CPRD which is provided in the clinical file (Figure 10).

Medcode	Readcode	Description
636	E200.00	Anxiety states
4069	E200100	Panic disorder

Figure 10. Example of medcodes mapped to Read codes by CPRD, as shown by red arrows

4.2.2 Linked Data

The CPRD can also provide linkage to other health-related and demographic datasets for patients from consenting practices. Currently, approximately 74% of CPRD GOLD practices in England consent to these linkages (CPRD, 2020a). The actual linkage is performed by NHS Digital, who identify matches using a combination of NHS number, sex, date of birth, and postcode (Padmanabhan et al., 2019). The following linked datasets were available for use in this study (Figure 11).

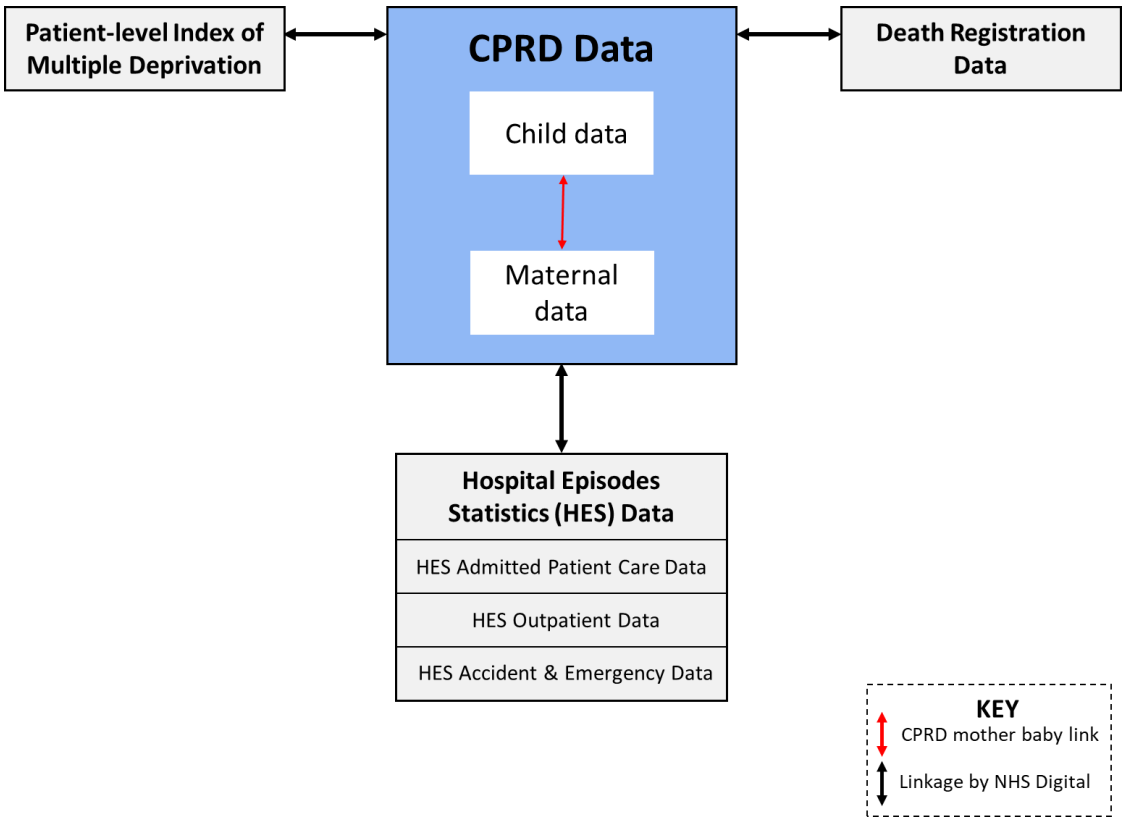

Figure 11. Diagram showing data sources – CPRD data plus linked datasets

Hospital Episode Statistics (HES) Data

Hospital Episode Statistics (HES) contain data on all NHS hospital admissions (HES Admitted Patient Care data), outpatient appointments (HES Outpatient data), and attendances to Accident and Emergency (HES A&E data) in England. The quality of HES data has been assessed in two systematic reviews, which found a high level of coding accuracy in HES data, supporting its use in epidemiological research (Burns et al., 2012, Campbell et al., 2001).

HES Admitted Patient Care data contain information on NHS hospital admissions. A hospital admission is defined as "any secondary care-based activity that requires a

hospital bed, thereby including both emergency and planned admissions, day cases, births and associated deliveries" (Herbert et al., 2017). Each row within the HES APC data file represents a 'Finished Consultant Episode' (FCE), which indicates a continuous period under the care of one consultant. For each FCE, key clinical and admission data is available such as diagnoses, procedures, and episode start and end dates. Diagnostic information in HES is recorded using ICD-10 (International Statistical Classification of Diseases and Related Health Problems – 10th revision) codes.

HES Outpatient data contain details of outpatient appointments, including dates, type of consultation, referral source, waiting time, treatment speciality, and some diagnostic information. HES A&E data contain information regarding accident and emergency care, such as diagnostic type, treatment waiting time, and referral source.

Death Registration Data

Death registration data from the Office for National Statistics (ONS) contain information on the date and place of death, in addition to the cause of death, which is coded using ICD-10 codes (CPRD, 2020b).

Index of Multiple Deprivation 2010

The Index of Multiple Deprivation 2010 (IMD 2010) is a composite measure of seven types of neighbourhood deprivation; income, employment, health, education, housing and services, living environment, and crime (Department for Communities and Local Government, 2011). England is divided into over 30,000 Lower Layer Super Output Areas (LSOA), representing geographical areas which each have a minimum population of 1,000 persons (NHS, 2020, Office for National Statistics, 2011). An IMD score is calculated for each LSOA, meaning each LSOA can be ranked by relative deprivation. This IMD data is provided by CPRD as a linked patient-level dataset, based on the LSOA corresponding to the last known address of the patient.

Maternal Data

CPRD has also enabled the linkage of child data to maternal data using the CPRD Mother Baby Link. Family members can be identified in CPRD using the practice-specific family number. This number, in combination with the practice number, is used by CPRD to match babies to their mothers. In order to reduce misclassification bias,

maternal and child records are only retained within the CPRD Mother Baby Link if the birth date recorded in the child's data occurred within 60 days of the delivery date recorded in the mother's data (CPRD, 2017).

4.3 Cohort Identification

4.3.1 Original Cohort

The original cohort was obtained primarily for the aforementioned wider study investigating maternal health (Fraser et al., 2020b). This section describes the cohort identification process performed by CPRD to create the original cohort, whilst the next section describes the modifications made to the original cohort in order to make it suitable for the current study. Children and young people were grouped into three categories: those with a life-limiting condition, those with a chronic physical or mental condition that is not life-limiting, such as diabetes or asthma, and those with no long-term physical or mental condition. Assignment to groups was based on data in either primary or secondary care; children and young people with life-limiting conditions and those with chronic conditions were identified using previously developed Read code and ICD-10 code lists, the development of which is described elsewhere (Fraser et al., 2012, Hardelid, Dattani and Gilbert, 2014). The code lists used can be found in Appendix 5 (life-limiting condition codes) and Appendix 6 (chronic condition codes). Children and young people in the life-limiting condition group (cases) were matched to one child or young person in the chronic condition group and up to two children or young people in the no long-term condition group (controls) by sex, year of birth, and region.

The first step of the cohort identification process was the creation of a source population, by CPRD. Children and young people were included in the source population if they met the following criteria:

- Child or young person had eligibility for HES, death registration data, and patient-level Index of Multiple Deprivation data linkage
- Included as babies in the CPRD Mother Baby link
- Mother had eligibility for HES, death registration data, and patient-level Index of Multiple Deprivation data linkage
- Child or young person and mother were registered at a CPRD practice during the study period (1st April 2007 to 31st December 2017)

- Mother had at least one year of up-to-standard data records within the study period

Children and young people were then allocated to each of the condition groups, as per the identification process displayed in Figure 12.

The sample size calculation performed was primarily for the aforementioned maternal health study, based on 80% power and 5% significance to detect an incidence rate ratio of 1.4, with the mean incidence rate of maternal anxiety/depression reported to be 0.03. This indicated that each condition group must include a minimum of 3260 children or young people (Fraser et al., 2020b). As the incidence of anxiety and depression in children and young people is also reported to be approximately 0.03, this sample size calculation is also valid for the current study (Walters et al., 2012, Wijlaars, Nazareth and Petersen, 2012).

4.3.2 Modified Cohort (Study Sample)

Some modifications were needed in order for the cohort to be suitable for use in the current study. First, the original cohort included children from birth, however the identification of mental health conditions in preschool children is challenging due to the lack of appropriate diagnostic systems for children in this age range, who typically experience rapid developmental changes (Egger and Angold, 2006). Therefore, children were only included in the study when they reached five years of age. This is in line with the age ranges of the included studies in the meta-analysis (Chapter 2), none of which included pre-school children.

Additionally, diagnoses of anxiety and depression were categorised as chronic conditions in the original cohort. As anxiety and depression were the outcomes of interest in the current study, they needed to be removed from the chronic condition list used in this study. Therefore, any children or young people originally in the chronic condition group who did not have chronic conditions other than anxiety or depression were moved to the no long-term condition group. This modified cohort made up the study sample for the current study.

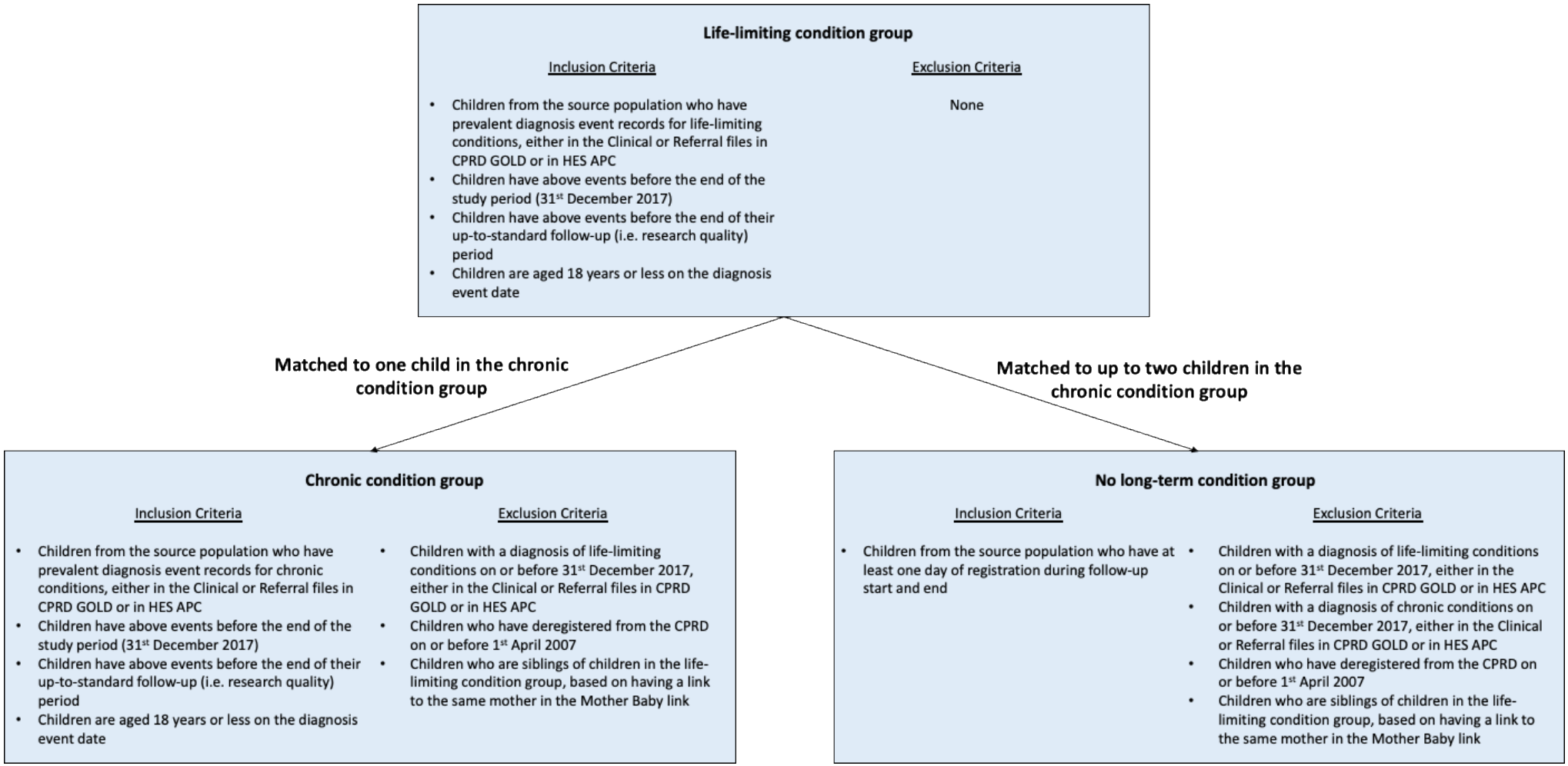

Figure 12. Diagram showing the process used to identify the original cohort

Matching based on sex, year of birth and region.

4.3.3 Entry & Exit Dates

Children and young people became eligible for the study at the latest of the following dates, which was termed their 'entry date':

- Practice up-to-standard date
- Month after first/current registration date
- Study start date (1st April 2007)
- Date child turned five years old
- Date of diagnosis of life-limiting condition/chronic condition (if appropriate)

The first month of registration was excluded from the follow-up time, as it has been shown that incidence rates can be overestimated during this period due to patients seeking medical care for prevalent conditions that are not yet recorded in their clinical records (Wijlaars, Nazareth and Petersen, 2012).

Children and young people became ineligible for the study at the earliest of the following dates, termed their 'exit date':

- Practice last collection date
- Date child or young person transferred out of practice
- Date of death
- Study end date (31st September 2017)
- Date child or young person turned 19 years old

Therefore, although the children and young people in the life-limiting condition group (cases) were matched by year of birth to those in the chronic condition and no long-term condition groups (controls), the entry and exit dates for cases may differ from those of their controls (Figure 13). This in turn meant that the age distributions for the three condition groups could differ. As shown in Figure 13, although the study started on 1st April 2007, all CPRD and HES data were available for each child or young person, including data from before their CPRD registration date. Therefore, these data could be used to ascertain the date of life-limiting/chronic condition diagnosis even if this occurred before the child or young person registered with CPRD.

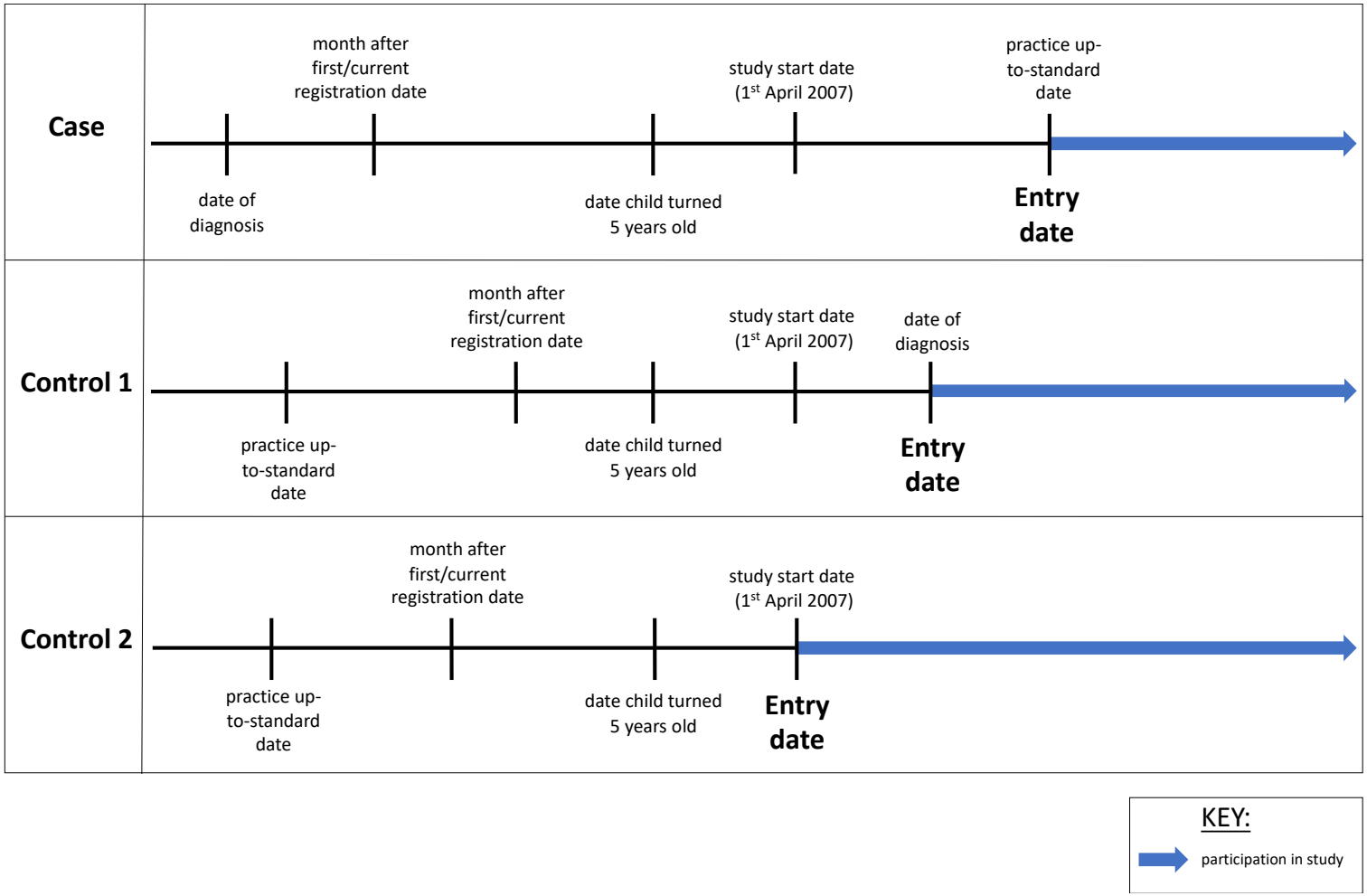

Figure 13. Diagram showing difference in start dates between a case and their matched controls

Case enters study on the date that data from their practice becomes up-to-standard (after study start date). Control 1 enters study on the date that their chronic condition was diagnosed (after study start date). Control 2 enters study on the study start date.

4.4 Identification of Anxiety and Depression

Anxiety and depression among children and young people have been found to be under-reported in primary care (Sheldrick, Merchant and Perrin, 2011). Therefore, it was important that various indicators of anxiety and depression from the primary and secondary care datasets were included in order to detect as many true cases of anxiety and depression as possible. Three broad types of codes were used to identify anxiety and depression in this study: diagnostic, symptom, and prescription codes. Therefore, code lists for each of these types of codes needed to be generated for this study.

4.4.1 Read Code Lists

Each Read code within CPRD maps to a single medical construct such as a diagnostic term or symptom. However, for any given condition, such as anxiety, numerous Read codes are used. These range from specific diagnostic codes, for example in the case of anxiety, referring to "generalised anxiety disorder", to more nuanced symptoms such as "fear". Therefore, in order to identify all potential cases of depression or anxiety in the dataset, a highly comprehensive code list for each condition was required. The Read code lists for depression and anxiety used in this study were generated using STATA, following a previously published method (Davé and Petersen, 2009).

To produce the anxiety Read code list, first a list of words associated with anxiety was created, including terms such as 'anxiety' 'panic', 'phobia', and 'worry'. The full list of existing Read codes was then mined for codes which included these terms in their descriptors, identifying 434 codes. However, some Read codes relating to anxiety do not include any of the selected key words in their descriptors, such as "tenseness". Therefore, common stems in the identified codes were explored. For example, 1B12.11 is the code for 'nerves', so by searching for other codes beginning with 1B1, the code for tenseness (1B14.00) could be identified. Finally, irrelevant codes were excluded; these were codes which contained the key words but did not relate to anxiety, such as "tympanic membrane perforation". In addition, any codes relating to a history of anxiety, or anxiety in remission were removed, and any codes relating to mixed anxiety and depression were moved to the co-morbid code list. Codes relating to specific phobias such as animal phobias were also excluded, as without knowing the context and severity of the phobia it could have been problematic to assume that they

constituted an anxiety disorder, especially given the young age of some study participants. This resulted in the inclusion of 113 anxiety codes.

The depression Read code list was created using the same method, by first mining the full list of Read codes for codes including terms such as 'depression' and 'mood', identifying 228 codes. Common code stems were then explored, which resulted in the inclusion of additional codes such as "complaining of feeling unhappy". Irrelevant codes were removed, in addition to codes describing a history of depression or depression in remission, and co-morbid anxiety and depression codes were again moved to a separate list. Codes relating to perinatal depression were also removed, as it could not be determined whether these codes referred to the mother or the child/young person themselves. After the exclusion of these codes, 172 depression codes remained.

The anxiety and depression lists were then checked against lists generated by authors of previously published papers in order to identify any additional codes (Baker et al., 2017, Cornish et al., 2016, Prady et al., 2016, Rait et al., 2009, Smith et al., 2019, Wijlaars, Nazareth and Petersen, 2012). This led to the inclusion of five additional anxiety codes and six additional depression codes. Each code list was then split into three separate lists according to the type of code; diagnostic, symptom or screening tool code. A list of generic mental health Read codes, such as "seen by child and adolescent mental health service", was also collated from the codes used in the aforementioned published papers. Finally, a list of suicide-related codes was created using the STATA method, in order to aid in the identification of depression cases. The code lists were subsequently checked by a GP, to ensure the validity of the included codes in the identification of anxiety and depression, and all codes were deemed to be appropriate.

4.4.2 ICD-10 & Other HES Code Lists

ICD-10 code lists for anxiety and depression were also generated in order to identify diagnoses in HES. Unlike the Read coding system, which contains codes referring to symptoms and screening tools as well as diagnoses, ICD-10 only contains diagnostic codes. Both anxiety and depression are contained within ICD-10 Chapter V: mental and behaviour disorders. Each chapter of ICD-10 contains several *blocks* which in turn

contain numerous diagnostic codes, or *categories*. The blocks containing depression and anxiety diagnostic codes are “Mood [affective] disorders” and “Neurotic, stress-related and somatoform disorders”, respectively. However, as each block refers to a broader set of disorders than depression and anxiety, some diagnostic categories had to be excluded. For example, the ‘’Mood [affective] disorders” block also includes diagnostic categories which refer to an elation-related mood change. In addition, although the majority of diagnoses in the “Phobic anxiety disorders” category were included, “Specific (isolated) phobias” were excluded as per the anxiety Read code list. One code in the “Other anxiety disorders” category refers to “Mixed anxiety and depression disorder”, therefore this was placed in the separate list for co-morbid depression and anxiety. Figure 14 shows the included and excluded diagnostic categories from ICD-10. These code lists were used to identify depression and anxiety diagnoses in both the HES APC and HES OP datasets, as although diagnoses in HES OP are poorly completed, the high level of under-reporting of anxiety and depression among children and young people in primary care meant that it was important to identify as many true cases as possible in the secondary care datasets. A list of suicide-related ICD-10 codes was also compiled, which included all of the codes contained within the block named “Intentional self-harm”.

HES OP also provides information on the treatment speciality related to each patient visit. Therefore, a list of mental health-related treatment speciality codes was compiled. Although full diagnostic information is not available in the HES A&E data, information on the type of diagnosis is available; “psychiatric conditions” is the only diagnostic type in the dataset which relates to mental health conditions, so only this code was included. All code lists used for the identification of anxiety and depression can be found in Appendix 7.

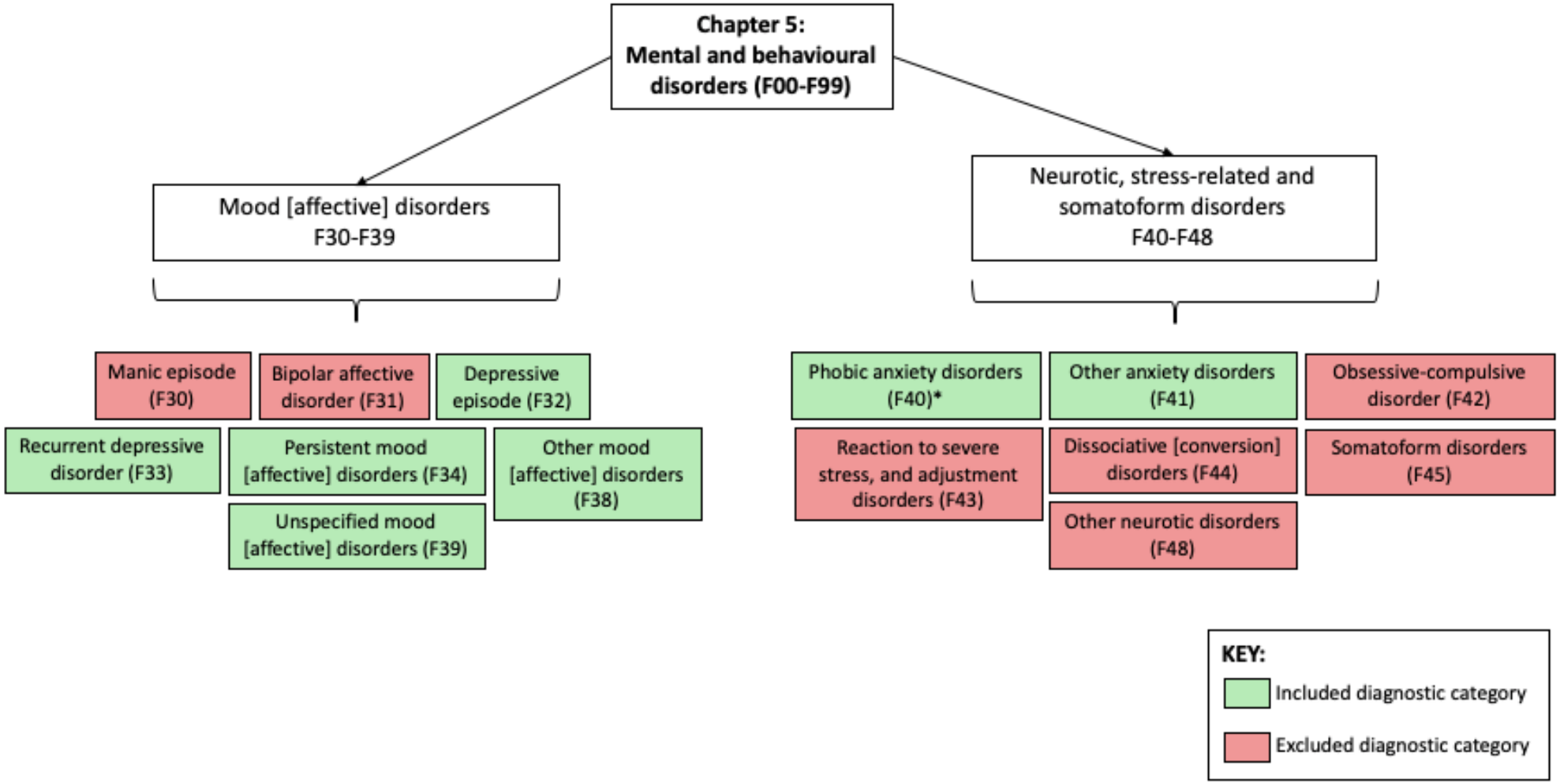

Figure 14. Included and excluded ICD-10 diagnostic categories for identification of anxiety and depression from HES APC and HES OP data
*excluding F40.2 – Specific (isolated) phobias

4.4.3 Prescription Code Lists

Code lists were also generated to identify prescriptions of antidepressants, anxiolytics, and hypnotics in CPRD, utilising a similar method to that used to create the anxiety and depression code lists (Davé and Petersen, 2009). Prescriptions in CPRD are recorded using product codes, however each drug substance can have multiple product codes relating to different product names and dosages. For example, citalopram, a common antidepressant, has 70 different product codes.

To overcome the issue of multiple product codes, the British National Formulary (BNF) coding system was used to identify drugs. BNF codes are categorised into BNF chapters according to the specific bodily system that the drug is used to treat; BNF chapter 4 contains all drugs relating to the central nervous system. Within this chapter, each section relates to a specific drug type; section 4.3 contains antidepressants, section 4.1.2 contains anxiolytics, and section 4.1.1 contains hypnotics. Therefore, STATA was used to search the CPRD product dictionary for all of the drugs contained within each of the three chapters, along with their respective product codes. However, antidepressants, anxiolytics and hypnotics can also be prescribed for conditions other than depression and anxiety, such as neuropathic pain, especially in children and young people with life-limiting conditions. As such, including all prescription records for these drugs could have dramatically reduced the specificity of the study's results, hence it was important to understand what additional indications each drug can be used for.

Therefore, the current British National Formulary (BNF) NICE guidelines for both children and adults were searched to create a list of indications for each of these drugs (National Institute for Health and Care Excellence (NICE), 2020a, 2020b) (Appendix 8). Indications for adults were included in this list as many drugs that are only indicated in adults are prescribed 'off-label' to children and young people (Allen et al., 2018). An important consideration that needed to be taken into account, however, was that many of the indications other than anxiety and depression for which some of these drugs are used, such as neuropathic pain, muscle spasms, and seizures, are far more likely to occur in children and young people with life-limiting conditions. Therefore, the likelihood of a drug being prescribed for anxiety or depression, rather than another indication, differs between the groups for some of the drugs, and thus including

prescriptions for these drugs in the analysis could have resulted in biased estimates which were not comparable across the three groups of children and young people. Consequently, the following analysis was conducted in order to generate a drug inclusion list for the study.

First, the number of children and young people prescribed each antidepressant, anxiolytic or hypnotic drug during the study period was calculated, by condition group. The records of these children and young people were then searched in order to identify how many of them had a recorded diagnosis or symptom of depression (or anxiety, if applicable) before the drug was prescribed. Drugs were subsequently excluded if one or more of the following applied:

- The drug was predominantly prescribed for children and young people with life-limiting conditions
- The proportion of children and young people prescribed the drug who also had a diagnosis or symptom of depression/anxiety was very low
- The drug had multiple indications other than anxiety/depression

In order to further improve the specificity of the analysis, a list of exclusion Read and ICD-10 codes was then generated for each included drug, relating to its main indications other than depression (if included in the analysis of depression) or anxiety (if included in the analysis of anxiety). Code lists for these indications were generated using the previously described STATA method. Therefore, the following conditions must have been met in order for an antidepressant prescription code to be defined as a case of depression:

- Antidepressant prescription code AND no exclusion diagnostic codes before or within one month of the prescription AND no exclusion symptom codes within one month of the prescription

Similarly, for an antidepressant/anxiolytic/hypnotic code to be defined as a case of anxiety, the following conditions must have been met:

- Antidepressant/anxiolytic/hypnotic prescription code AND anxiety symptom code within one month AND no exclusion diagnostic codes before/within one month AND no exclusion symptom codes within one month

4.5 Anxiety and Depression Identification Algorithms

Varying levels of specificity regarding the three types of codes used (diagnostic, symptom, and prescription codes) necessitated the development of comprehensive algorithms in order to define when a case of anxiety or depression would be assigned (Figure 15, Figure 16).

4.5.1 Code Types

Diagnostic Codes

Diagnostic codes for anxiety or depression are specific, and therefore it can be assumed with some certainty that the recording of one of these codes represents a case of anxiety or depression. Referrals for anxiety or depression, identified by the appearance of a diagnostic or symptom code in the CPRD Referral file, were also assumed to represent a true case of anxiety or depression. Both diagnostic and referral codes were named 'diagnostic codes' for simplicity.

Symptom Codes

Symptom codes are more ambiguous, with anxiety symptom codes including symptoms such as "nerves" and "fear" and depressive symptom codes including symptoms such as "low mood" or "complaining of feeling unhappy". Therefore, it cannot be assumed with the same degree of certainty that the recording of these symptom codes represents a case of anxiety or depression, and subsequently the inclusion of single symptoms may have reduced the specificity of the analysis. However, it is very important that symptom codes are used in the detection of these mental health conditions as symptom codes have increasingly been utilised in favour of diagnostic codes to record anxiety and depression (Rait et al., 2009, Walters et al., 2012). This is likely to be even more important when assessing mental health conditions in children and young people as GPs can be unwilling to label them with mental health diagnoses (Sayal, 2006).

Previous studies analysing the incidence of anxiety or depression using Read codes have used different restrictions to specify when a symptom of anxiety or depression would be considered to indicate a case of anxiety or depression. For example, Smith et al., (2019) stated that for patients with a recorded symptom code but no recorded diagnostic code, the symptom code must have been coupled with a code indicating the

prescription of an antidepressant or anxiolytic in order for a case of anxiety or depression to be assigned (Smith et al., 2019). However, as the prescription of antidepressants for children and young people is cautioned, this method could have resulted in a large degree of undercounting in this study population (National Institute for Health and Care Excellence (NICE), 2019a).

Instead, this study used a method employed in a previous study of adolescent depression, whereby a case of depression was assigned if an adolescent had at least two recorded depressive symptoms within one month (Wijlaars, 2014). NICE guidelines for the management of mild depression in children and young people recommend that if a child or young person presents with depression that is not severe enough to warrant treatment in the first instance, a subsequent assessment is arranged after a two week 'watchful waiting' period (National Institute for Health and Care Excellence (NICE), 2019a). Accordingly, if a depressive symptom is recorded in a child or young person's records then it is likely that another appointment would have been scheduled soon after in order to further assess their symptoms. If depression was still apparent at this second appointment then another symptom would have been recorded. Therefore, by ensuring that only children and young people who had two recorded depressive symptoms were included as depression cases, the specificity of the analysis was increased. As, in reality, the period of time between the two appointments may exceed two weeks, given the long waiting times experienced in primary care during the study period, a maximum time period of a month between the two recorded symptom codes was allowed in this study (Kelly and Stoye, 2014). The same logic was assumed for the identification of anxiety cases.

Anxiety and depression screening tool codes were also used in the identification of these conditions, however the dataset did not provide the results of these screening assessments. Therefore, the presence of a screening tool code must have been coupled with a symptom code within one month in order for a case of anxiety or depression to be assigned. Similarly, if a symptom of anxiety or depression was recorded within the same month as a generic psychological code then this was defined as a case of anxiety or depression, respectively. Generic psychological codes included the aforementioned generic mental health Read codes, the mental health-related treatment specialities in HES OP, and the "psychiatric conditions" diagnostic type in

HES A&E. Although these codes contain no information about the specific mental health condition involved, if they were recorded within the same month as a symptom code for anxiety or depression it was assumed that the generic code was relating to anxiety or depression, respectively. Suicide codes were also analysed, as depression is a key risk factor for suicide. However, as other mental health conditions such as bipolar disorder are also associated with suicide, a suicide code needed to be coupled with a depression symptom code within the same month in order for a case of depression to be assigned (Turecki and Brent, 2016). All of the above examples were categorised as 'symptom codes' for simplicity.

Prescription Codes

Prescription codes were also used for the identification of anxiety and depression, as per the conditions specified in section 4.4.3.

4.5.2 'Anxiety and/or Depression' Outcome

Due to the high level of anxiety and depression co-morbidity in children and young people, which can often go unnoticed by healthcare practitioners, a third outcome was assessed: 'anxiety and/or depression' (Garber and Weersing, 2010, Melton et al., 2016). Cases of 'anxiety and/or depression' included children and young people specifically labelled with a comorbid anxiety and depression code, in addition to children and young people with one anxiety symptom code and one depressive symptom code recorded within one month. Cases of anxiety or depression, as defined in the algorithms displayed in Figure 15 and Figure 16 were also included as cases of 'anxiety and/or depression' as comorbidity could have been present but not recognised or recorded by the GP. The algorithm used to assign cases of 'anxiety and/or depression' is shown in Figure 17.

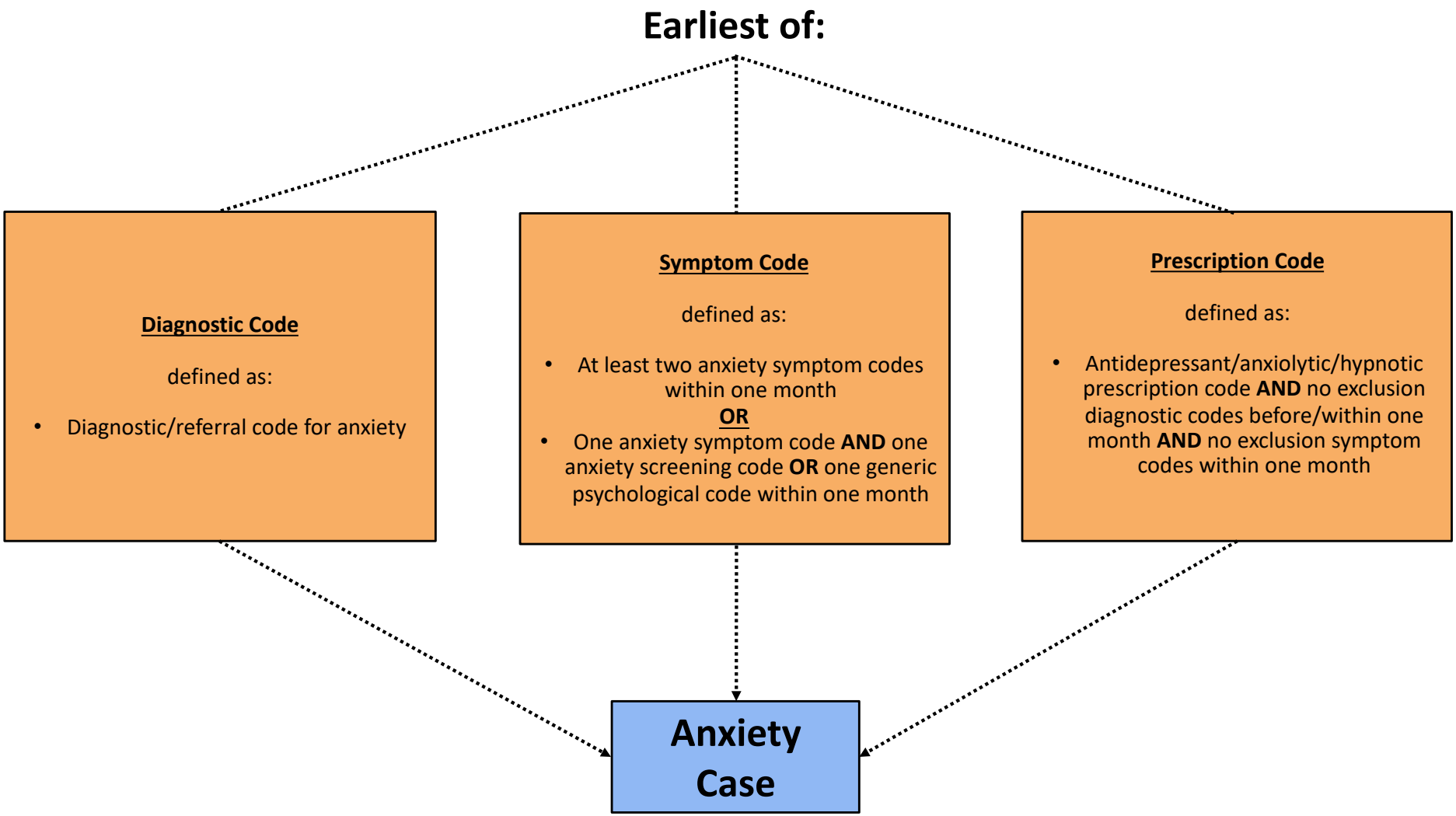

Figure 15. Algorithm showing the codes/combinations of codes and associated time restrictions used to define a case of anxiety

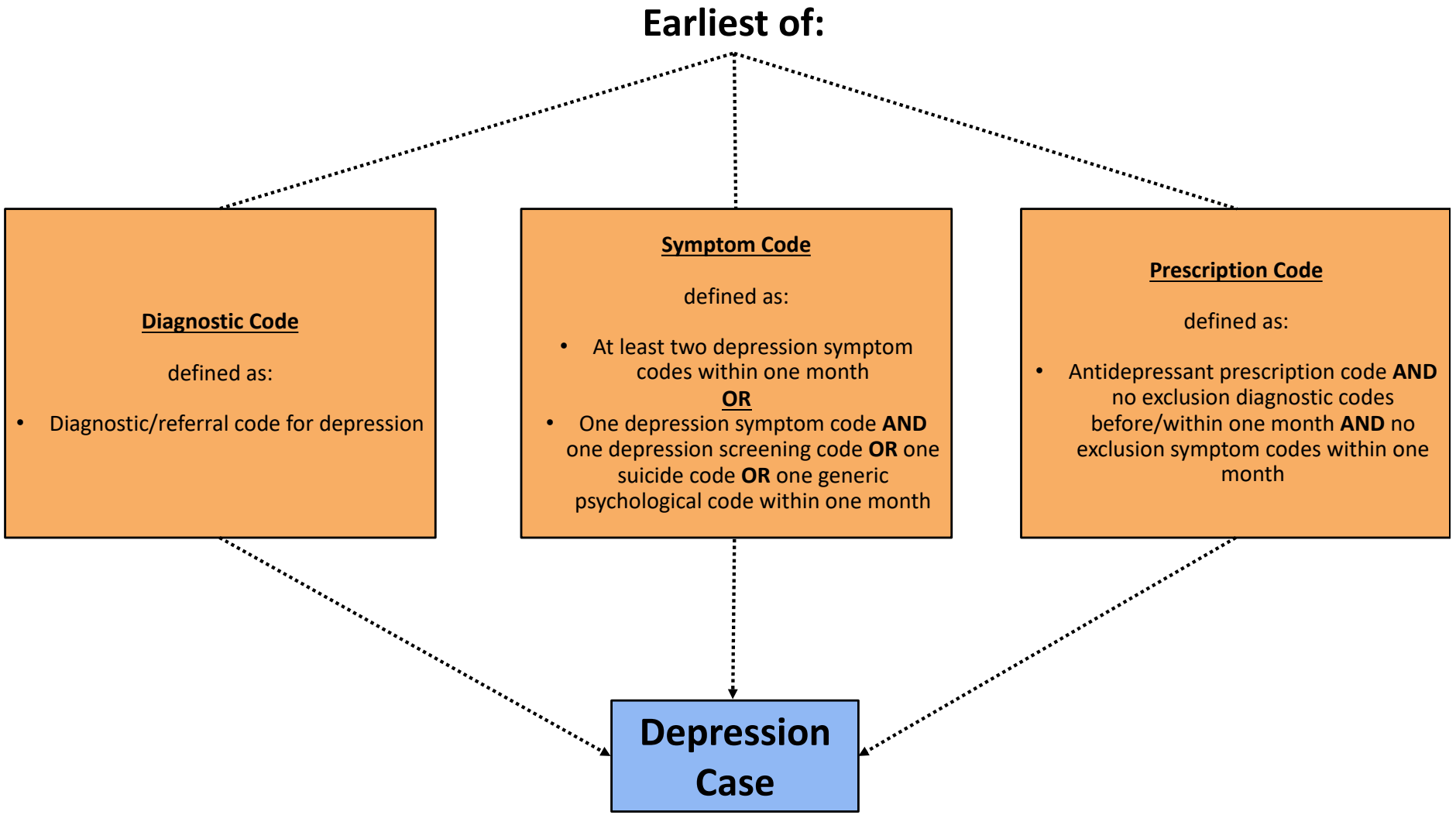

Figure 16. Algorithm showing the codes/combinations of codes and associated time restrictions used to define a case of depression

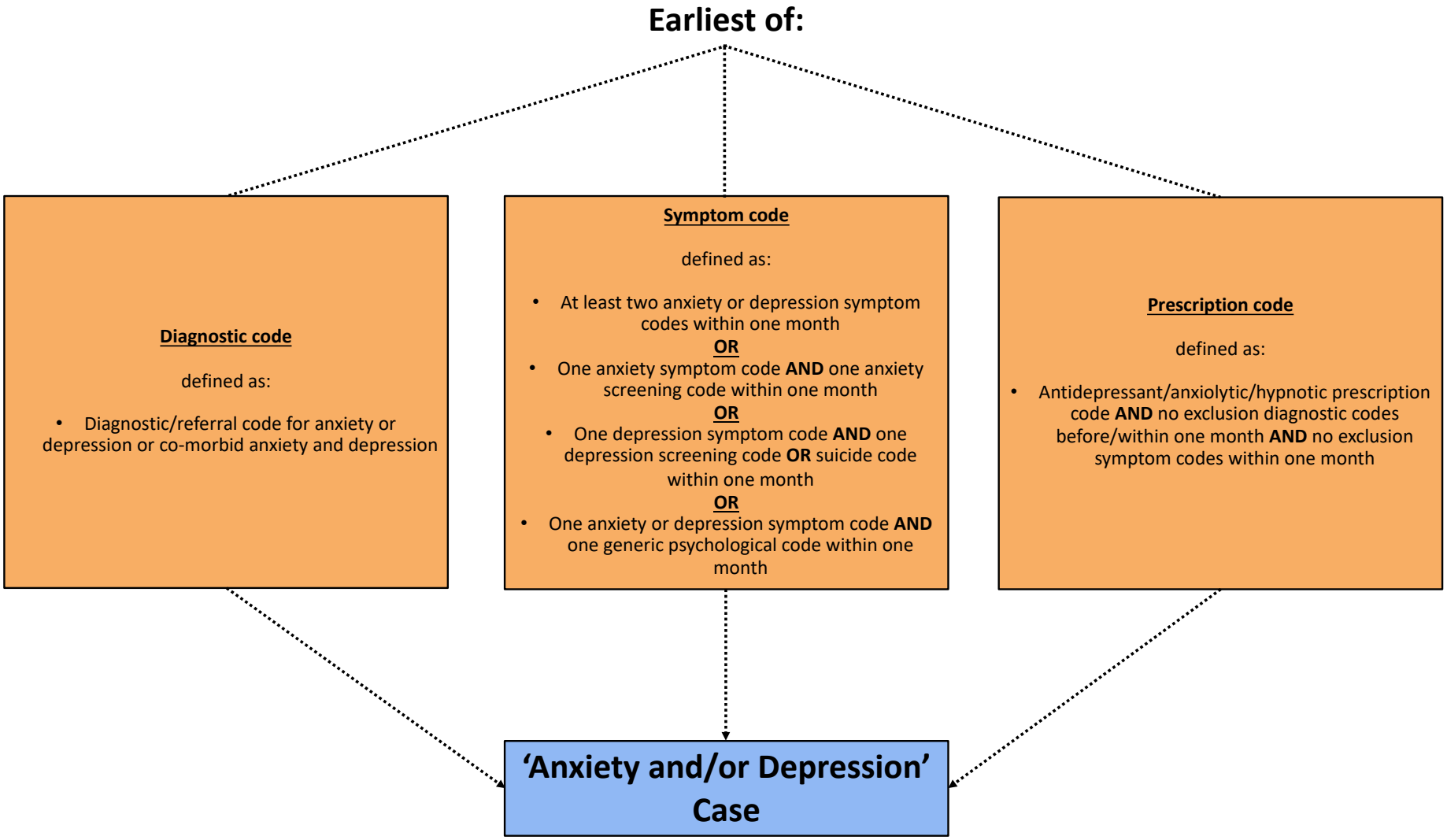

Figure 17. Algorithm showing the codes/combinations of codes and associated time restrictions used to define a case of 'anxiety and/or depression'

The earliest date at which anxiety, depression or 'anxiety and/or depression' was identified was defined as the date of onset of anxiety, depression or 'anxiety and/or depression', respectively.

4.5.3 Follow-up Time

Children and young people were followed-up from their entry date to their exit date. If a child or young person had a 'transfer out period' which occurred during their follow-up period, the total number of days of registration absence was subtracted from their follow-up time. For the calculation of incidence, the first event of the outcome of interest after the child's entry date was identified. Children and young people with no recorded events of the outcome of interest were followed up until their exit date.

Children and young people with prevalent cases of the outcome of interest, defined as a diagnostic or referral code relating to the outcome (anxiety or depression or 'anxiety and/or depression), recorded before their study entry date were excluded from that particular analysis.

4.6 Confounders & Mediators

Figure 18 shows the relationship between the exposure (condition group), the outcome (anxiety/depression), and the associated confounders and potential mediators available in the CPRD data. It is important to note that other factors may also mediate the association between condition group and anxiety/depression, such as coping style, as shown in Chapter 3. However, data relating to these factors were not available from CPRD. Age, sex, socioeconomic status, and ethnicity have all been shown to be associated with life-limiting conditions and anxiety/depression in numerous studies (Fraser et al., 2020a, Fraser et al., 2015, NHS Digital, 2018b), therefore they are confounders to the association between exposure and outcome.

GP visit frequency is also associated with the recording of mental health conditions such as depression, as an increase in the number of GP visits provides more opportunities for depression to be detected (Koning et al., 2019, Richardson et al., 2010, Walters et al., 2011). As children and young people with life-limiting or chronic conditions are likely to need more frequent primary care consultations, GP visit

frequency is a potential mediator of the relationship between condition group and anxiety/depression (Jarvis et al., 2020). Exposure to maternal mental health conditions is another potential mediator in this study as maternal mental health conditions have been found to mediate the association between chronic physical illness and symptoms of anxiety and depression in children and young people (Ferro and Boyle, 2015).

The question of whether matching variables should be adjusted for in the analyses of cohort studies has received some debate in the literature. It has been argued that adjusting for matching variables is not necessary as the matching process renders the matching variable independent of the exposure, and therefore the matching variable is no longer a confounder (Mansournia, Hernán and Greenland, 2013, Sjölander and Greenland, 2013). However, this argument only holds true when one does not adjust for any additional confounders, as adjusting for confounders other than the matching variables 'breaks' the matching by introducing an association between the matching variable and the exposure. Therefore, if additional confounders are adjusted for then the matching variables should also be adjusted for in the analysis (Mansournia, Hernán and Greenland, 2013, Sjölander and Greenland, 2013). Therefore, age and sex, both matching variables, were adjusted for in the current study.

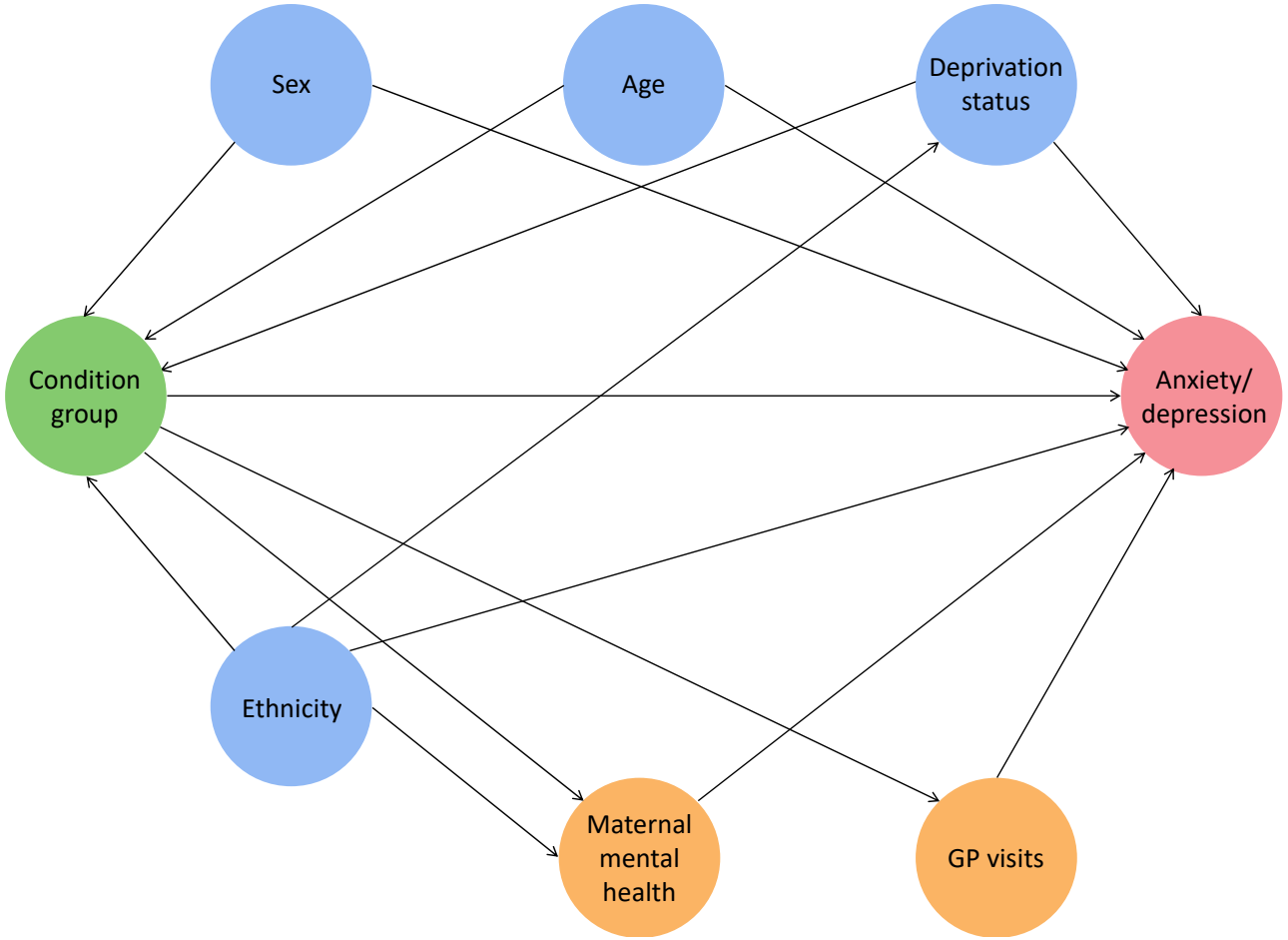

Figure 18. Figurative representation showing the associations between exposure (condition group), outcome (anxiety/depression), confounders (sex, age, deprivation status and ethnicity) and potential mediators (maternal mental health and GP visits)

Confounders are displayed in blue circles, potential mediators are displayed in orange circles. Diagram only shows variables that are available in CPRD data.

4.6.1 Variable Generation

Sex

Information regarding the child or young person's sex was available using the sex variable found in the CPRD patient file, which had four categories: Male, Female, Indeterminate, and Unknown.

Age at Study Entry

In order to calculate the child or young person's age at study entry, their date of birth was first generated from the year of birth and month of birth variables found in the CPRD patient file. Year of birth was available for all children and young people, and month of birth was available for the majority. Where the month of birth was not available, the child or young person's month of birth was set to June. As the day of birth was not available for any of the children and young people, their day of birth was set to the 15th day of the month. Each child or young person's date of birth was then subtracted from their study entry date to provide their age at study entry.

Deprivation Status

Deprivation status was assessed using the linked patient-level index of multiple deprivation 2010 data, split into five groups, ranked from category 1 (least deprived) to category 5 (most deprived).

Ethnicity

Ethnicity data was available from the HES APC, A&E, and OP datasets. The ethnic groups used in the analysis were based on the hierarchical ethnicity classifications from the UK 2011 census, which categorises ethnicity into five groups: White, Black, Asian, Mixed, and Other (Office for National Statistics, 2015). However, research has shown that South Asian populations are underrepresented within the healthcare setting, and are therefore likely to have missed mental health diagnoses. Consequently, in this study children and young people from South Asian (Indian, Pakistani and Bangladeshi) ethnic groups were grouped separately to those of other Asian ethnicities (Chinese and Other Asian) in order to assess whether the incidence of anxiety and depression differed significantly between the two Asian categories (Goodman, Patel and Leon, 2008, Prady et al., 2016). Therefore, six ethnicity categories were used in the main analysis; White, Black, South Asian, Other Asian, Mixed and Other (Figure 19).

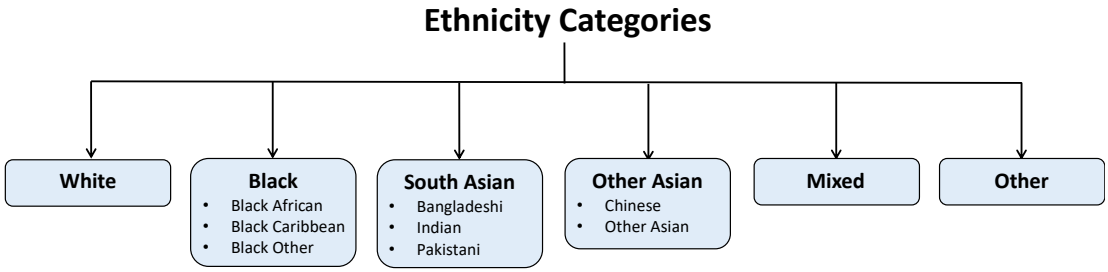

Figure 19. Diagram showing the six ethnicity categories used in the main analysis, and the sub-groups within the Black, South Asian and Other Asian categories

Annual GP Visits

In order to calculate annual GP visits, the total number of attendances at a GP for each child or young person during their follow-up time was required. This information was available in the CPRD consultation file, along with the type of consultations that were attended. As well as clinic visits to the GP, phone consultations with a GP were also included in this study as 'GP visits', as it is likely to be challenging for some of the children and young people, especially those with life-limiting conditions, to physically attend GP consultations if they are feeling unwell. The total number of attendances at a GP between the entry date and either the occurrence of the outcome of interest (anxiety or depression or 'anxiety and/or depression') or the exit date was counted for

each child or young person, and then divided by their total follow-up time to provide the number of GP visits per year.

Maternal Mental Health Conditions

Previous research in both the general population and among children and young people with chronic conditions has shown that maternal mental health conditions are a key risk factor for the development of mental health conditions in children and young people (Ferro and Boyle, 2015, Goodman et al., 2011, Rasic et al., 2014). Therefore, the inclusion of data relating to the presence or absence of maternal mental health conditions was important for this analysis. Maternal mental health conditions were classified into two categories: common mental health disorders and severe mental illness. Common mental health disorders include conditions such as anxiety, depression, obsessive-compulsive disorder (OCD), and post-traumatic stress disorder (PTSD) (National Institute for Health and Care Excellence (NICE), 2011). The exact definition of severe mental illness, along with the conditions it encompasses, has been heavily debated with no overall consensus reached (Martínez-Martínez, Richart-Martínez and Ramos-Pichardo, 2020). Although historically, severe mental illness was used to refer to schizophrenia, bipolar disorder and other psychotic disorders, recently there has been a call for the additional inclusion of personality disorders (Ayre, Owen and Moran, 2017, Hardoon et al., 2013, Shah, 2020). Therefore, in this study personality disorders were classified within severe mental illness, along with affective psychotic disorders (including bipolar disorder) and non-affective psychotic disorders (including schizophrenia).

The Read code, ICD-10 code, and prescription lists used to identify maternal mental health conditions in the current study were based on previously published lists, and can be found in Appendix 9 (Abel et al., 2019). Maternal severe mental illness was defined by the appearance of one of the following types of codes in the mother's record:

- a diagnostic Read code for a severe mental illness in the CPRD clinical file
- a diagnostic or symptom Read code for a severe mental illness in the CPRD referral file
- an ICD-10 code for a severe mental illness in the HES APC or HES OP files
- a prescription code for either antipsychotics or mood stabilisers

Maternal common mental health disorders were identified using a similar method, however as antidepressants, anxiolytics and hypnotics have multiple indications, a symptom code for depression or anxiety, respectively, must have been recorded within three months of the prescription code in order for the mother to be identified as having had a common mental health disorder.

Mothers were followed-up from two years before their child's birth to either the occurrence of the outcome of interest (anxiety or depression or 'anxiety and/or depression') in the child or young person or the child or young person's exit date. A variable was then generated to indicate whether a child or young person had been exposed to maternal mental health conditions. This variable had three levels: 0 = no exposure, 1 = exposure to common mental health disorders, 2 = exposure to severe mental illness.

4.7 Statistical Analysis

4.7.1 Descriptive Analysis

The distributions of variables were described according to diagnostic group. The distributions of the confounders (sex, age at study entry, ethnicity, and deprivation status) by condition group were assessed in both the original cohort and the modified cohort, whereas the distributions of the potential mediators (annual GP visits and exposure to maternal mental health conditions) were only explored in the modified cohort. For the purpose of these general descriptive statistics, the child or young person's study exit dates were used in the construction of the two mediating variables, and the occurrence of an outcome (anxiety or depression or 'anxiety and/or depression') was not taken into account.

For continuous variables (age at study entry, annual GP visits) the mean and standard deviation were calculated if the variable was normally distributed, while the median and interquartile range (IQR) was used if the variable did not follow a normal distribution. For categorical variables (sex, ethnicity, deprivation status, exposure to maternal mental health conditions) the proportion of children and young people in each category was calculated. The proportion of missing data was also calculated for all variables. The differences in variable distributions between condition groups were tested for significance using chi-squared tests for categorical variables and either a

one-way ANOVA or a Kruskal-Wallis test for continuous variables, depending on the distribution of the data.

4.7.2 Incidence Calculations

Cumulative incidence of anxiety, depression and 'anxiety and/or depression' was calculated by dividing the number of new cases of the outcome of interest during the study period by the total number of children and young people at risk from the specific outcome (Rassen et al., 2019). 95% confidence intervals were calculated using the exact method.

Crude incidence rates per 1,000 person-years, and 95% confidence intervals (CIs), were calculated separately for anxiety, depression and 'anxiety and/or depression' by dividing the number of incident cases by the total person-time contributed by children and young people during the study in relation to that outcome. Incidence rates were calculated for the total study sample and stratified by condition group, age, sex, ethnicity, deprivation status, and exposure to maternal mental health conditions.

4.7.3 Regression Modelling

Poisson regression modelling was used to calculate crude and adjusted incidence rate ratios (IRRs). Poisson regression assumes the poisson distribution, in which the mean is equal to the variance; if this assumption is violated and the variance is greater than the mean then the data is said to be overdispersed and poisson regression should not be used (Dunteman and Ho, 2011). Therefore, the data used in the current study first needed to be checked for overdispersion, before poisson regression was performed. This was done by running a negative binomial regression, which provides a likelihood ratio test comparing the negative binomial model to the poisson model. If the negative binomial model does not have a significantly better fit to the data than the poisson model then the null hypothesis of no overdispersion should be accepted and the poisson model should be used (Osbrne, 2008). As such, tests for overdispersion were conducted for each model used, the results of which are presented in Appendix 10.

<u>Research Questions 1-3</u>

The Poisson regression models used to address research questions 1-3 are shown in Table 25. Models 1A, 2A and 3A only included the aforementioned confounders (age, sex, ethnicity, and deprivation status). Models 1B, 2B and 3B included the confounders

and exposure to maternal mental health conditions, and models 1C, 2C and 3C included all of the confounders and both potential mediators (maternal mental health conditions and annual GP visits). Models for each research question were compared using the Bayesian Information Criterion (BIC) (Neath and Cavanaugh, 2012). Models 1C, 2C and 3C were also performed excluding individuals with missing ethnicity data in order to assess whether this altered the conclusions generated from the results of the models.

Research Questions 4-6

All of the aforementioned confounders and mediators represent potential risk or protective factors for anxiety or depression. In order to compare the effect of these factors on anxiety and depression incidence between condition groups, and therefore answer research questions 4-6, Models 1C, 2C and 3C were also performed stratified by condition group (Table 25). Two ethnic groups: White and Other were used in Models 4-6 due to the small numbers of children and young people in each of the separate Other ethnic categories used in Models 1-3.

Sensitivity Analysis

Sensitivity analysis was performed in order to investigate the assumption of linearity between age and the incidence of anxiety/depression made in the main analysis. This sensitivity analysis consisted of two flexible parametric survival models. These models use restricted cubic splines, allowing for complex hazard functions to be modelled, unlike Cox models (Royston, 2001, Syriopoulou et al., 2019). Additionally, flexible parametric survival models allow for the incorporation of time-dependent effects. In Supplementary Model 1, age was included as a time-varying covariate, allowing age to vary over follow-up time. In Supplementary Model 2, age at the event of interest (anxiety/depression event or right censoring) was used as the timescale instead of follow-up time, in order to allow anxiety incidence to vary by age, in a non-linear manner (Lambert and Royston, 2009). As variations in anxiety incidence have been found by calendar time, year of birth was also included as a covariate in both models (NHS Digital, 2018c).

All analyses were conducted using STATA version 16.1 and two-sided statistical significance was pre-specified at $p \leq 0.05$.

Table 25. Poisson regression models generated to answer research questions

Research Question	Model Name	Exposure	Outcome	Covariates
1) What is the incidence of anxiety in children and young people with life-limiting conditions and how does this compare to the incidence in children and young people with chronic conditions or no long-term conditions?	Model 1A	Condition group	Anxiety	Age, sex, ethnicity, deprivation status
	Model 1B	Condition group	Anxiety	Age, sex, ethnicity, deprivation status, maternal mental health
	Model 1C	Condition group	Anxiety	Age, sex, ethnicity, deprivation status, maternal mental health, annual GP visits
2) What is the incidence of depression in children and young people with life-limiting conditions and how does this compare to the incidence in children and young people with chronic conditions or no long-term conditions?	Model 2A	Condition group	Depression	Age, sex, ethnicity, deprivation status
	Model 2B	Condition group	Depression	Age, sex, ethnicity, deprivation status, maternal mental health
	Model 2C	Condition group	Depression	Age, sex, ethnicity, deprivation status, maternal mental health, annual GP visits
3) What is the incidence of anxiety and/or depression in children and young people with life-limiting conditions and how does this compare to the incidence in children and young people with chronic conditions or no long-term conditions?	Model 3A	Condition group	Anxiety and/or depression	Age, sex, ethnicity, deprivation status
	Model 3B	Condition group	Anxiety and/or depression	Age, sex, ethnicity, deprivation status, maternal mental health
	Model 3C	Condition group	Anxiety and/or depression	Age, sex, ethnicity, deprivation status, maternal mental health, annual GP visits

Research Question	Model Name	Exposure	Outcome	Covariates
1) What factors are associated with the incidence of anxiety in children and young people with life-limiting conditions and how do these compare to the factors associated with the incidence of anxiety in children and young people with chronic conditions or no long-term conditions?	Model 1C stratified by condition group	Age, sex, ethnicity, deprivation status, maternal mental health, annual GP visits	Anxiety	Age, sex, ethnicity, deprivation status, maternal mental health, annual GP visits
2) What factors are associated with the incidence of depression in children and young people with life-limiting conditions and how do these compare to those associated with the incidence of anxiety in children and young people with chronic conditions or no long-term conditions?	Model 2C stratified by condition group	Age, sex, ethnicity, deprivation status, maternal mental health, annual GP visits	Depression	Age, sex, ethnicity, deprivation status, maternal mental health, annual GP visits
3) What factors are associated with the incidence of anxiety and/or depression in children and young people with life-limiting conditions and how do these compare to those associated with the incidence of anxiety and/or depression in children and young people with chronic conditions or no long-term conditions?	Model 3C stratified by condition group	Age, sex, ethnicity, deprivation status, maternal mental health, annual GP visits	Anxiety and/or depression	Age, sex, ethnicity, deprivation status, maternal mental health, annual GP visits

Chapter 5: The Incidence of Anxiety and Depression in Children and Young People with Life-Limiting Conditions, Chronic Conditions or No Long-Term Conditions: A Comparative Cohort Study – Results

This chapter describes the results from a comparative cohort study conducted using data from Clinical Practice Datalink (CPRD) and linked data which aimed to address objectives 3 and 4 as outlined in Chapter 1:

- *To use primary and secondary healthcare data from England to analyse the incidence of anxiety and depression in children and young people with life-limiting conditions and compare this to the incidence among those with chronic conditions and those with no long-term conditions*
- *To use primary and secondary healthcare data from England to examine what factors are associated with the incidence of anxiety and depression in children and young people with life-limiting conditions, and to explore whether these associations differ from those found among children and young people with chronic conditions and those with no long-term conditions*

5.1 Description of Study Cohort

5.1.2 Original Cohort from CPRD

The original cohort received from CPRD included 35,683 children and young people; 8,950 with life-limiting conditions, 8,868 with chronic conditions and 17,865 with no long-term conditions. The distributions of sex, age at study start, ethnicity and deprivation status in the original cohort are displayed in Table 26. 34,549 mothers had at least one child in the cohort; 33,438 mothers (96.8%) had only one child in the cohort, 1,088 mothers (3.1%) had two children in the cohort and 23 mothers (0.1%) had three children in the dataset.

Sex

In the original cohort, there was a higher proportion of males (56.4%) than females (43.6%). None of the children and young people in the cohort were classified as having indeterminate sex.

Age at Study Entry

The median age at study entry was highest in the chronic condition group (4.08 years), followed by the life-limiting condition group (2.2-1years), with the lowest median age

at study entry observed in the no long-term condition group (0.56 years). The interquartile range was largest in the life-limiting condition group (0.00-7.77) and lowest in the no long-term condition group (0.07-6.54). These differences in age by condition group were found to be statistically significant (p<0.001). As shown in Figure 20, the distribution of age of study entry was positively skewed in all condition groups, with the majority of children entering the study at a young age.

Ethnicity

The most common ethnicity in the original cohort was White, accounting for 79.5% of children and young people. However, significant differences in ethnicity between condition groups were observed. For example, 83.2% of children and young people in the life-limiting condition group were White compared to 81.3% in the chronic condition group and 76.6% in the no long-term condition group. The proportion of missing ethnicity data also differed by condition group; 2.2% of the life-limiting condition group had missing ethnicity data, compared to 5.4% of the chronic condition group and 11.6% of the no long-term condition group. However, for the other ethnic categories, such as the various Black and Asian categories, only very slight differences between condition groups were observed.

Deprivation Status

In all three condition groups the largest proportion of children and young people were in the least deprived category, accounting for 23.7% of the cohort, whilst the least common category was the most deprived (17.8% of the cohort). However, differences in deprivation status by condition group were observed. For example, 25.7% of children and young people in the no long-term condition group were in the least deprived group, compared to only 20.6% in the life-limiting condition group. The proportion of missing data for deprivation status was low across all condition groups, representing 0.1% of the total cohort.

Table 26. Description of sex, age at study entry, ethnicity and deprivation status variables by condition group in the original cohort

Variable	Condition Group			Total (n=35,683)	*p* value
	Life-limiting condition (n=8,950)	Chronic condition (n=8,868)	No long-term condition (n=17,865)		
Sex, no. (%)					
Male	5,049 (56.4)	5,008 (56.5)	10,076 (56.4)	20,133 (56.4)	0.994
Female	3,901 (43.6)	3,860 (43.5)	7,789 (43.6)	7,789 (43.6)	
Indeterminate	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	
Ethnicity, no. (%)					
Bangladeshi	59 (0.7)	71 (0.8)	101 (0.6)	231 (0.7)	<0.001
Black African	181 (2.0)	158 (1.8)	277 (1.6)	616 (1.7)	
Black Caribbean	45 (0.5)	55 (0.6)	88 (0.5)	188 (0.5)	
Black Other	63 (0.7)	66 (0.7)	103 (0.6)	232 (0.7)	
Chinese	30 (0.3)	21 (0.2)	58 (0.3)	109 (0.3)	
Indian	180 (2.0)	148 (1.7)	277 (1.6)	605 (1.7)	
Pakistani	204 (2.3)	159 (1.8)	214 (1.2)	577 (1.6)	
White	7,450 (83.2)	7,213 (81.3)	13,690 (76.6)	28,353 (79.5)	
Other Asian	126 (1.4)	95 (1.1)	202 (1.1)	423 (1.2)	
Other	135 (1.5)	136 (1.5)	298 (1.7)	569 (1.6)	
Mixed	280 (3.1)	270 (3.0)	489 (2.7)	1,030 (2.9)	
Missing	197 (2.2)	476 (5.4)	2,077 (11.6)	2,750 (7.7)	
Deprivation status, no. (%)					
1 (least deprived)	1,846 (20.6)	2,030 (22.9)	4,591 (25.7)	8,467 (23.7)	<0.001
2	1,836 (20.5)	1,754 (19.8)	3,604 (20.2)	7,194 (20.2)	
3	1,714 (19.2)	1,669 (19.2)	3,354 (18.8)	6,767 (19.0)	
4	1,838 (20.5)	1,743 (19.7)	3,317 (18.6)	6,898 (19.3)	
5 (most deprived)	1,711 (19.1)	1,639 (18.5)	2,987 (16.7)	6,337 (17.8)	
Missing	≤10	≤10	12 (0.1)	20 (0.1)	
Age at Study Entry in years, median (IQR)	2.21 (0.00-7.77)	4.08 (1.33-8.46)	0.56 (0.07-6.54)	2.12 (0.12-7.27)	<0.001

Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored to prevent censored cells being determined by differencing (^). Significance of differences between groups was tested using a chi-squared test for categorical variables or a Kruskal-Wallis test by ranks for continuous variables.

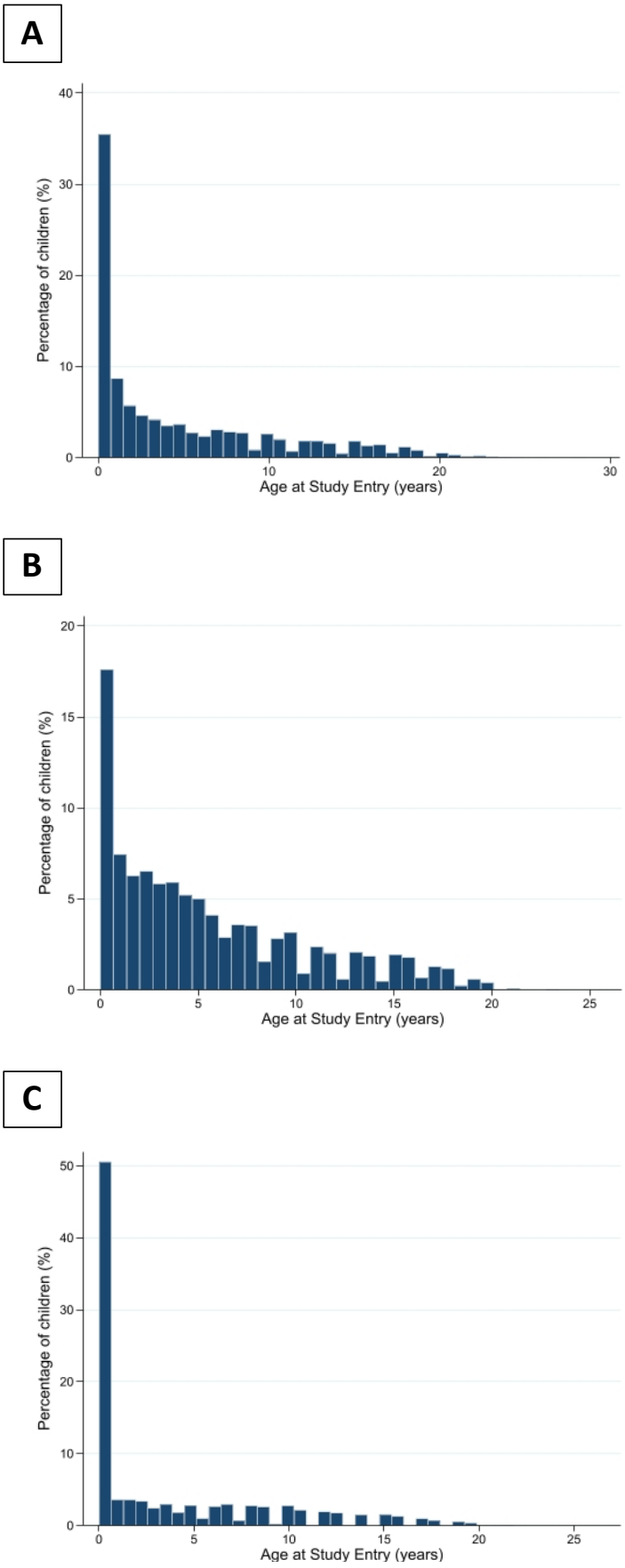

Figure 20. Histograms showing the distribution of age at study entry in the original cohort, by condition group: A) life-limiting condition, B) chronic condition, C) no long-term condition

5.1.3 Modified Cohort (Study Sample)

Figure 21 displays the modifications made to the original cohort to clean the data and make it suitable for use in this study, as specified in Chapter 4 (section 4.3.2). First, 292 children and young people were moved out of the life-limiting condition group as they had been misclassified and did not have a life-limiting condition; 131 of these children and young people were moved into the chronic condition group and 161 were moved into the no long-term condition group. Second, 42 children and young people were moved from the chronic condition group into the no long-term condition group because they did not have a chronic condition as defined in this study. Subsequently, 310 children and young people were excluded from the cohort as they were over 19 years of age at study entry, and 10,053 were excluded because they were under 5 years of age at their study exit date. Finally, seven children and young people were excluded from the cohort as their date of life-limiting/chronic condition diagnosis occurred after their exit date.

This modified cohort, hereafter referred to as the 'study sample', therefore included 25,313 children and young people; 5,527 with life-limiting conditions, 6,729 with chronic conditions and 13,057 with no long-term conditions. 24,532 mothers had between one and three children in the study sample; 23,760 mothers (96.9%) had only one child in the study sample, whilst 772 mothers (3.1%) had two or more children in the study sample. Table 27 describes the distributions of the study variables, by condition group, for the children and young people in the study sample. Only 36 children and young people had a 'transfer out period' during their follow-up time. The median length of 'transfer out period' for these children and young people was 151 days.

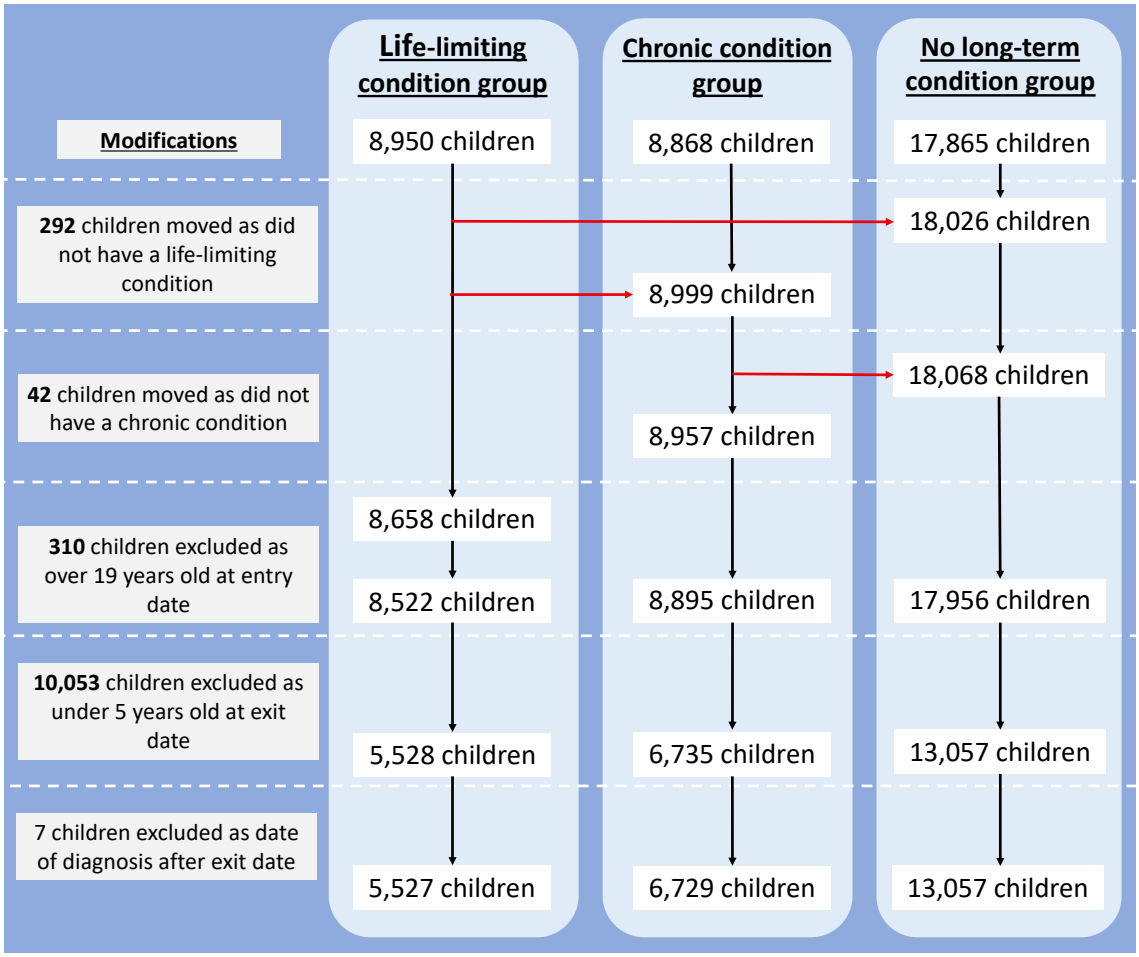

Figure 2. Modifications made to original cohort received from CPRD to create study sample

Red arrows show children being moved to a different condition group.

Table 27. Description of study variables by condition group in the study sample.

Variable	Condition Group			Total (n=25,313)	*p* value
	Life-limiting condition (n=5,527)	Chronic condition (n=6,729)	No long-term condition (n=13,057)		
Sex, no. (%)					
Male	3,128 (56.6)	3,778 (56.2)	7,311 (56.0)	14,217 (56.2)	0.573
Female	2,399 (43.4)	2,951 (43.8)	5,746 (44.0)	11,096 (43.8)	
Indeterminate	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	
Ethnicity, no. (%)					
Bangladeshi	37 (0.7)	54 (0.8)	59 (0.5)	150 (0.6)	<0.001
Black African	82 (1.5)	90 (1.3)	154 (1.2)	326 (1.3)	
Black Caribbean	24 (0.4)	38 (0.6)	61 (0.5)	123 (0.5)	
Black Other	27 (0.5)	42 (0.6)	71 (0.5)	140 (0.6)	
Chinese	19 (0.3)	12 (0.2)	36 (0.3)	67 (0.3)	
Indian	101 (1.8)	105 (1.6)	166 (1.3)	372 (1.5)	
Pakistani	118 (2.1)	121 (1.8)	129 (1.0)	368 (1.5)	
White	4,720 (85.4)	5,519 (82.0)	9,993 (76.5)	20,232 (79.9)	
Other Asian	58 (1.1)	65 (1.0)	107 (0.8)	230 (0.9)	
Other	72 (1.3)	86 (1.3)	168 (1.3)	326 (1.3)	
Mixed	130 (2.4)	164 (2.4)	280 (2.1)	574 (2.3)	
Missing	139 (2.5)	433 (6.4)	1,833 (14.0)	2,405 (9.5)	
Deprivation Status, no. (%)					
1 (least deprived)	1,218 (22.0)	1,602 (23.8)	3,582 (27.4)	6,402 (25.3)	<0.001
2	1,177 (21.3)	1,354 (20.1)	2,709 (20.8)	5,240 (20.7)	
3	1,058 (19.1)	1,294 (19.2)	2,411 (18.5)	4,763 (18.8)	
4	1,077 (19.5)	1,305 (19.4)	2,293 (17.6)	4,675 (18.5)	
5 (most deprived)	995 (18.0)	1,171 (17.4)	2,052 (15.7)	4,218 (16.7)	
Missing	≤10	≤10	≤10	15 (0.1)	
Age at Study Entry in years, median (IQR)	5.33 (5.00-9.94)	5.67 (5.00-9.79)	5.00 (5.00-8.38)	5.00 (5.00-9.05)	<0.001
Annual GP Visits, median (IQR)	2.50 (1.07-4.90)	2.14 (1.04-3.96)	1.08 (0.46-2.08)	1.54 (0.65-3.06)	<0.001
Maternal Mental Health Conditions, no. (%)					
None	2,929 (53.0)	3,563 (53.0)	8,053 (61.7)	14,545 (57.5)	<0.001
Common mental health disorder	2,501 (45.3)	3,059 (45.5)	4,868 (37.3)	10,428 (41.2)	
Severe mental illness	97 (1.8)	107 (1.6)	136 (1.0)	340 (1.0)	

Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored to prevent censored cells being determined by differencing (^). Significance of differences between groups was tested using a chi-squared test for categorical variables or a Kruskal-Wallis test by ranks for continuous variables.

Sex

The proportion of males in the study sample (56.2%) was higher than the proportion of females (43.8%), and this trend was observed in all three condition groups. None of the children and young people in the cohort were classified as having indeterminate or unknown sex.

Age at Study Entry

The median age at study entry was highest in the chronic condition group (5.67 years), followed by the life-limiting condition group (5.33 years), with the lowest median age observed in the no long-term condition group (5.00 years). These differences were found to be statistically significant (p<0.001). As shown in Figure 22, the distribution of age at study entry was positively skewed in all condition groups as a large proportion of the children started the study as soon as they turned five years of age.

Ethnicity

White was the most common ethnic category in the study sample, accounting for 79.9% of children and young people. Significant differences in ethnicity between condition groups was observed, particularly in the White ethnic group and in the proportion of missing ethnicity data between condition groups.

Deprivation Status

As in the original cohort, the most common deprivation category across all condition groups in the study sample was the least deprived category, whilst the least common category was the most deprived category. However, significant differences in deprivation status by condition group were observed.

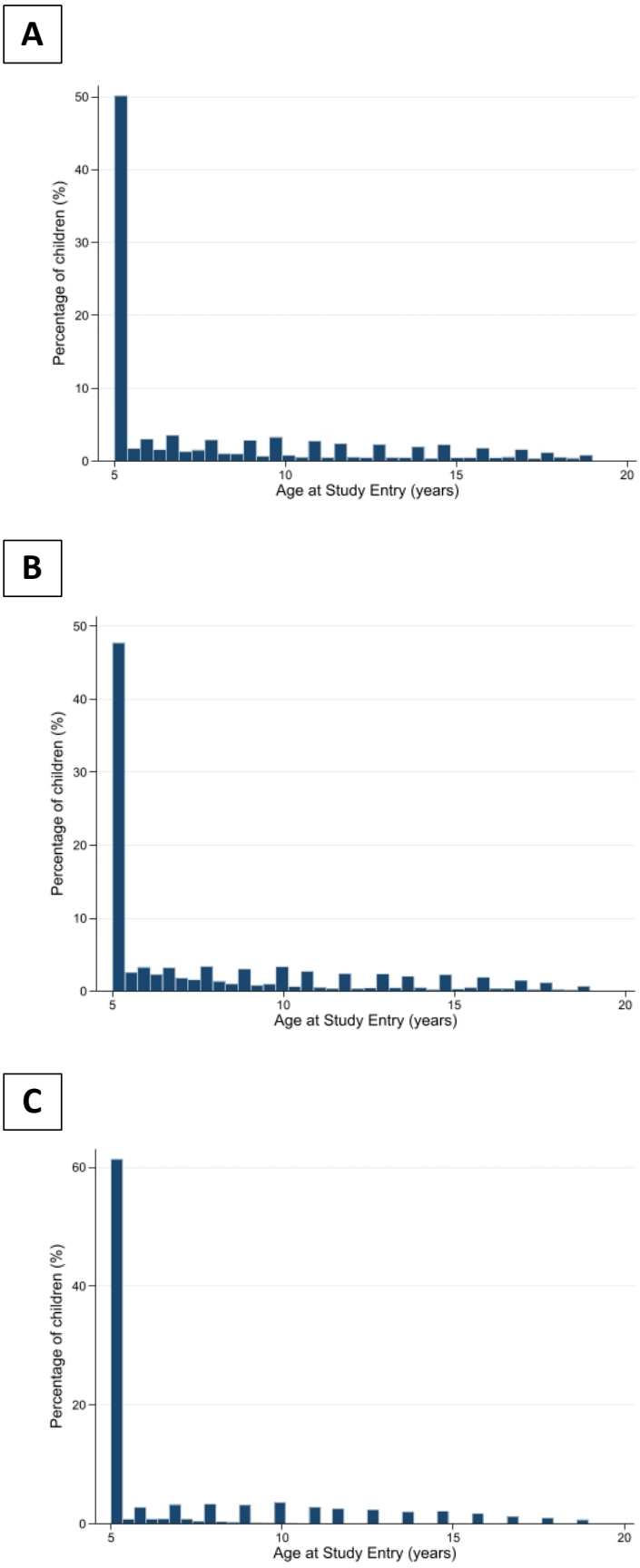

Figure 22. Histograms showing the distribution of ages at study start in the study sample, by condition group: A) life-limiting condition, B) chronic condition, C) no long-term condition

Annual GP Visits

The number of annual visits to a GP was highest in the life-limiting condition group (2.50 visits per year), followed by the chronic condition group (2.14 visits per year) and finally, the no long-term condition group (1.08 visits per year). The interquartile range for the life-limiting condition group (1.07-4.90) was also higher than the interquartile ranges observed in the chronic condition group (1.04-3.96) and the no long-term condition group (0.46-2.08). The distribution of total GP visits was positively skewed in all condition groups, with the majority of children and young people having a low number of visits each year, or none at all, whilst a few had a very high number of visits (Figure 23). Ten children and young people in the life-limiting condition group had more than 50 GP visits per year, compared to two in the chronic condition group and one in the no long-term condition group.

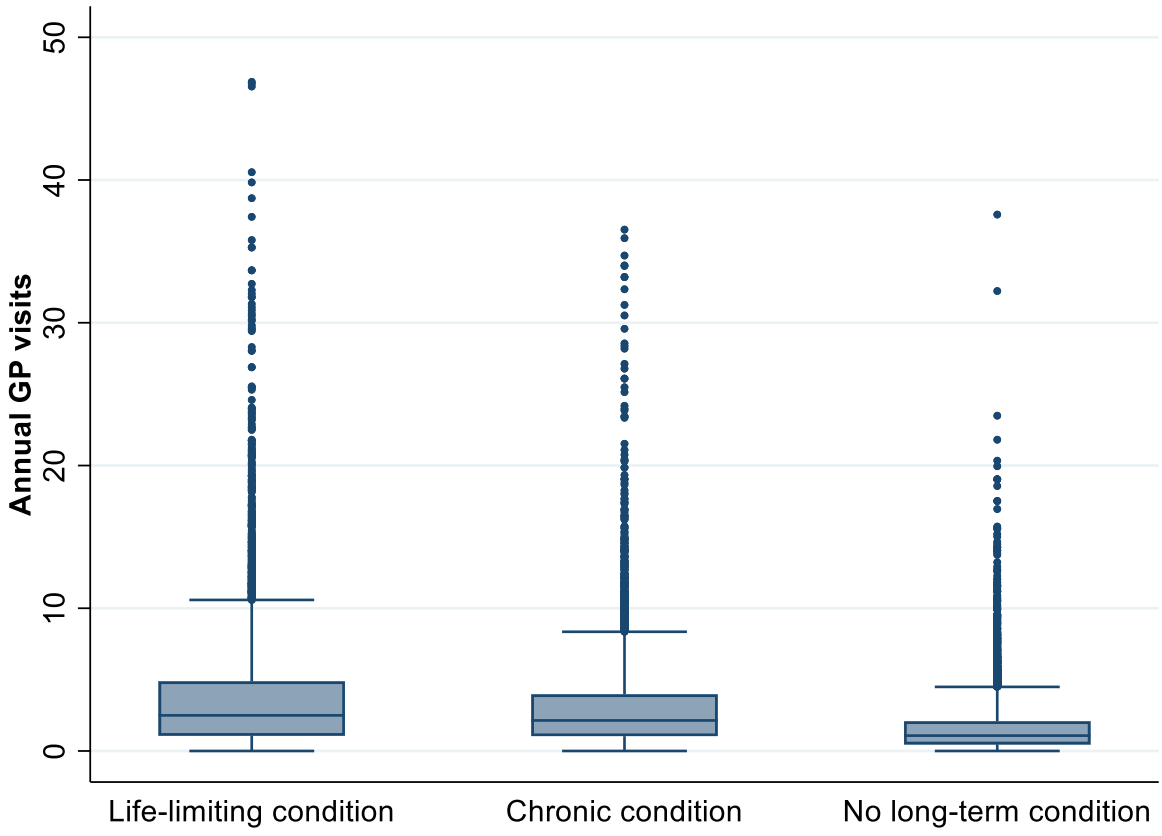

Figure 23. Box and whisker plot showing the distributions of total GP visits by condition group

Excluded children and young people with more than 50 GP visits per year.

Maternal Mental Health Conditions

The proportion of children and young people whose mother had a common mental health disorder varied by condition group; 45.5% of children and young people in the chronic condition group, 45.3% of those in the life-limiting condition group, and 37.3% of those in the no long-term condition group. The proportion of children and young people whose mother had a severe mental illness was small, under 2.0% in all condition groups.

Life-limiting Condition Diagnostic Category

Figure 24 shows the distribution of diagnostic categories in the life-limiting condition group. The most common diagnostic category in the sample was congenital anomalies (28.9%), followed by oncology diagnoses (15.5%).

Chronic Condition Diagnostic Category

Figure 25 shows the distribution of diagnostic categories in the chronic condition group, the most common being respiratory conditions (52.7%).

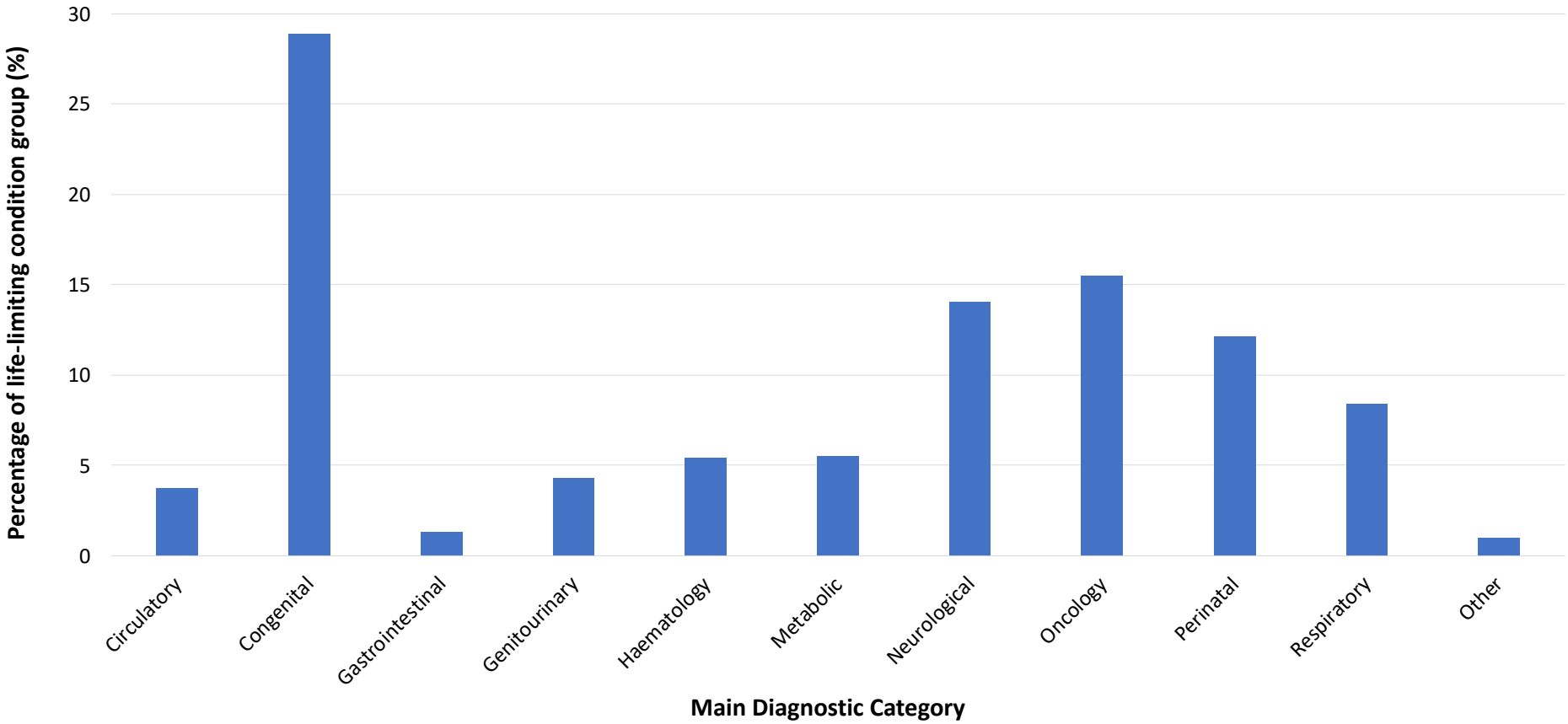

Figure 24. Main diagnostic category of children and young people with life-limiting conditions

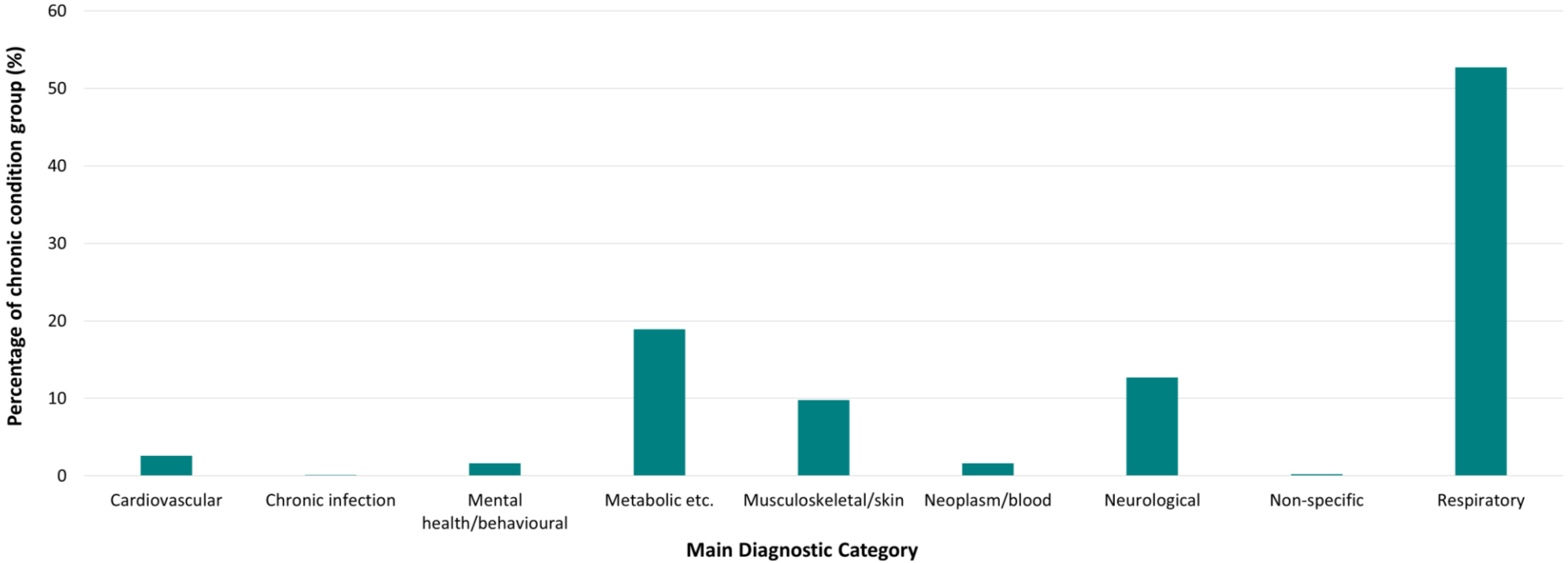

Figure 25. Main diagnostic category of children and young people with chronic conditions

Metabolic etc. = metabolic/endocrine/renal/digestive/genitourinary

5.2 Analysis of Prescription Data

This section describes the results from the analysis of the prescribing practices of antidepressants, anxiolytics and hypnotics in the three condition groups which was conducted in order to produce a drug inclusion list for the study.

Antidepressants

A total of 17 antidepressants were prescribed to children and young people within the study sample, all of which are indicated for depression and nine of which are indicated for anxiety (Table 28). Three antidepressants were excluded from the study: amitriptyline, imipramine and pregabalin. All three of these antidepressants have other indications which may be relevant in this study sample; amitriptyline is indicated for neuropathic pain, imipramine is indicated for nocturnal enuresis (bedwetting), and pregabalin is indicated for neuropathic pain and seizures (Appendix 8). In addition, only a small number of children and young people prescribed these drugs also had a diagnosis or symptom of depression or anxiety (if applicable). Lists of exclusion codes for the main indications of the 14 included antidepressants are provided in Appendix 11.

Anxiolytics & Hypnotics

Six anxiolytics and nine hypnotics were prescribed for children and young people in the study sample, all of which were excluded from the study (Table 29, Table 30). The majority of these drugs have multiple indications other than anxiety, such as seizures and muscle spasms, many of which are more likely to occur in children and young people with life-limiting conditions. This is reflected in the prescribing patterns for some of these drugs. For example diazepam was prescribed for 175 children and young people with life-limiting conditions, compared to 30 children and young people with chronic conditions and 31 children and young people with no long-term conditions. As most of the children and young people in the study sample who had been prescribed anxiolytics or hypnotics did not also have a diagnosis or symptom of anxiety, these drugs were likely prescribed for other indications. Therefore, all anxiolytics and hypnotics were excluded from this study.

Table 28. Decision of inclusion/exclusion for antidepressants

Antidepressant	Number of children and young people prescribed antidepressant			Decision	Other Indications
	Life-limiting condition group	Chronic condition group	No long-term condition group		
Amitriptyline	46	42	25	Exclude	NA
record of depression	≤10	≤10	≤10		
Citalopram	22	46	48	Include	None
record of depression	16	34	29		
record of anxiety	6	16	24		
Clomipramine	0	0	≤10	Include	None
record of depression	0	0	≤10		
record of anxiety	0	0	≤10		
Dosulepin	≤10	≤10	0	Include	None
record of depression	≤10	≤10	0		
Duloxetine	≤10	≤10	≤10	Include	None
record of depression	≤10	≤10	0		
record of anxiety	0	0	≤10		
Escitalopram	≤10	≤10	≤10	Include	OCD
record of depression	0	≤10	≤10		
record of anxiety	0	≤10	≤10		
Fluoxetine	37	44	45	Include	OCD Eating disorders
record of depression	19	31	33		
record of anxiety	≤10	14	18		
Flupentixol	0	0	≤10	Include	None
record of depression	0	0	0		
Fluvoxamine	0	0	≤10	Include	OCD
record of depression	0	0	0		
Imipramine	≤10	≤10	≤10	Exclude	NA
record of depression	0	0	0		
Lofepramine	≤10	0	0	Include	None
record of depression	1	0	0		
Mirtazapine	≤10	≤10	≤10	Include	None
record of depression	≤10	≤10	≤10		
Nortriptyline	0	≤10	0	Include	None
record of depression	0	≤10	0		
Paroxetine	≤10	0	≤10	Include	OCD
record of depression	≤10	0	0		
record of anxiety	≤10	0	0		

Antidepressant	Number of children and young people prescribed antidepressant			Decision	Other Indications
	Life-limiting condition group	Chronic condition group	No long-term condition group		
Pregabalin	≤10	≤10	0	Exclude	NA
record of depression	≤10	0	0		
record of anxiety	0	0	0		
Sertraline	14	35	23	Include	OCD
record of depression	≤10	22	12		
record of anxiety	≤10	17	≤10		
Venlafaxine	≤10	≤10	0	Include	None
record of depression	0	≤10	0		
record of anxiety	0	0	0		

Shows the number of children who have a record of depression (and anxiety if antidepressant also indicated for anxiety) before the prescription, by condition group.
Displays the main other indications for included drugs
Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored to prevent censored cells being determined by differencing (^).

Table 29. Decision of inclusion/exclusion for anxiolytics

Anxiolytic	Number of children and young people prescribed anxiolytic			Decision
	Life-limiting condition group	Chronic condition group	No long-term condition group	
Buspirone	≤10	0	≤10	Exclude
record of anxiety	0	0	0	
Clobazam	20	≤10	0	Exclude
record of anxiety	≤10	0	0	
Diazepam	175	30	31	Exclude
record of anxiety	12	13	≤10	
Hydroxyzine	≤10	0	0	Exclude
record of anxiety	0	0	0	
Lorazepam	15	≤10	0	Exclude
record of anxiety	≤10	0	0	
Midazolam	≤10	0	0	Exclude
record of anxiety	≤10	0	0	

Shows the number of children and young people prescribed each anxiolytic and the number of these children who have a record of anxiety before the prescription, by condition group.
Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored to prevent censored cells being determined by differencing (^).

Table 30. Decision of inclusion/exclusion for hypnotics

Hypnotic	Number of children and young people prescribed hypnotic			Decision
	Life-limiting condition group	Chronic condition group	No long-term condition group	
Chloral hydrate	30	≤10	≤10	Exclude
record of anxiety	≤10	0	≤10	
Chloral betaine	≤10	0	0	Exclude
record of anxiety	0	0	0	
Hydroxyzine	14	16	≤10	Exclude
record of anxiety	≤10	≤10	≤10	
Melatonin	216	104	26	Exclude
record of anxiety	17	≤10	≤10	
Nitrazepam	13	0	≤10	Exclude
record of anxiety	≤10	0	0	
Promethazine	61	73	48	Exclude
record of anxiety	≤10	≤10	≤10	
Temazepam	≤10	0	≤10	Exclude
record of anxiety	0	0	≤10	
Triclofos	≤10	0	0	Exclude
record of anxiety	0	0	0	
Zopiclone	≤10	12	≤10	Exclude
record of anxiety	≤10	≤10	≤10	

Shows the number of children and young people prescribed each hypnotic and the number of these children who have a record of anxiety before the prescription, by condition group.
Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored to prevent censored cells being determined by differencing (^).

5.3 Incidence of Anxiety

This section describes the results of the analysis for the first research question: 'what is the incidence of anxiety in children and young people with life-limiting conditions and how does this compare to the incidence in children and young people with chronic conditions or no long-term conditions'.

Of the 25,313 children and young people in the study sample, 132 had been diagnosed with anxiety prior to the start of the study. Therefore, 25,181 children and young people were included in the analysis of anxiety incidence, 448 of whom had incident cases of anxiety (Figure 26).

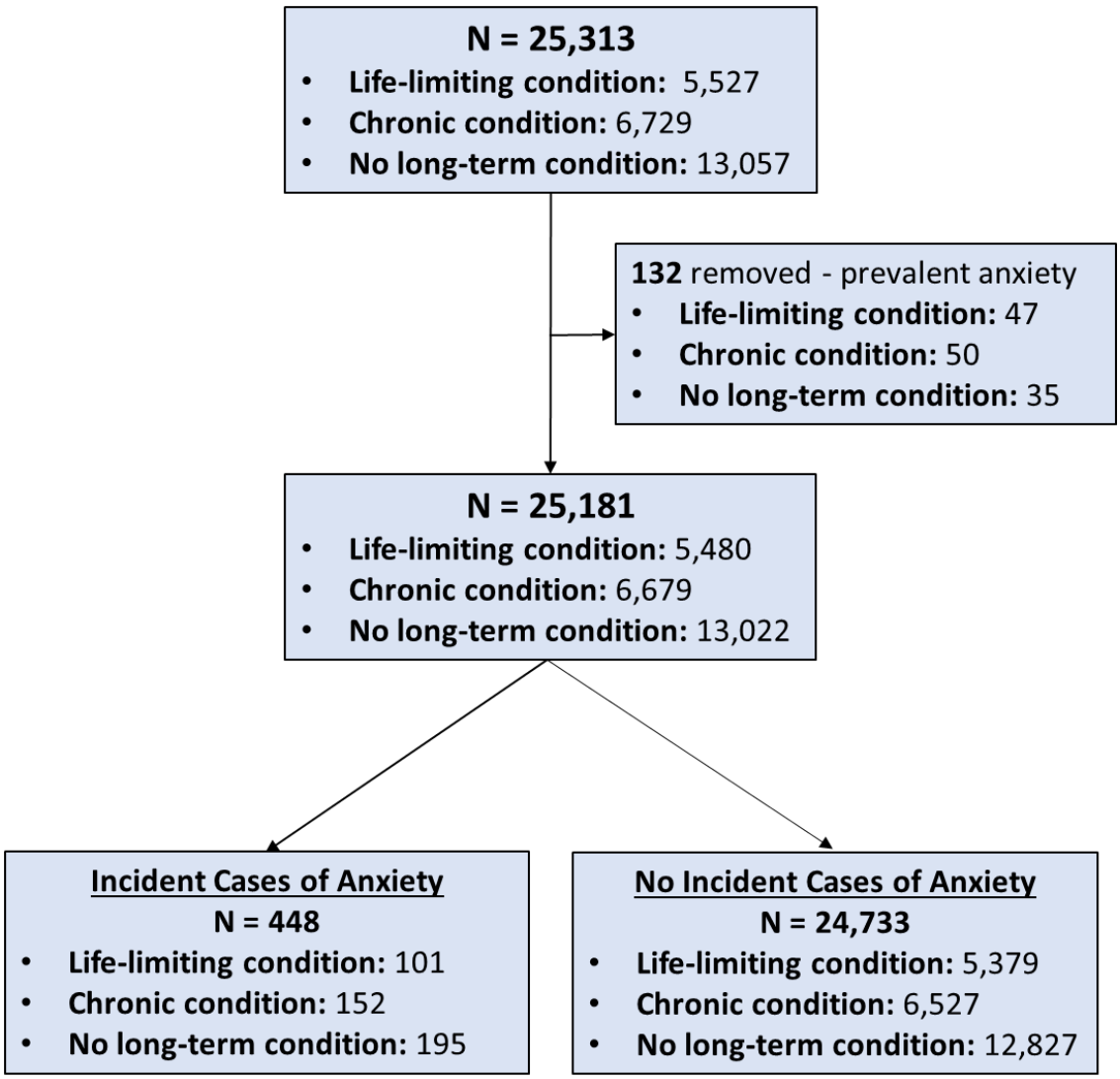

Figure 26. Flow diagram showing the number of incident cases of anxiety in the sample of 25,181 children and young people eligible for the analysis of anxiety incidence

The majority of children and young people with incident cases of anxiety had a diagnostic anxiety code recorded (90.6%). Most of these children and young people did not have any other types of anxiety codes recorded; 2.2% also had an anxiety symptom code, 0.9% also had a prescription code for anxiety and 0.4% had all three types of codes. The proportion of children and young people with only anxiety symptom or prescription codes in their records was also small; 7.1% only had a symptom code, 1.8% only had a prescription code and 0.4% had both a symptom code and a prescription but no diagnostic code (Figure 27).

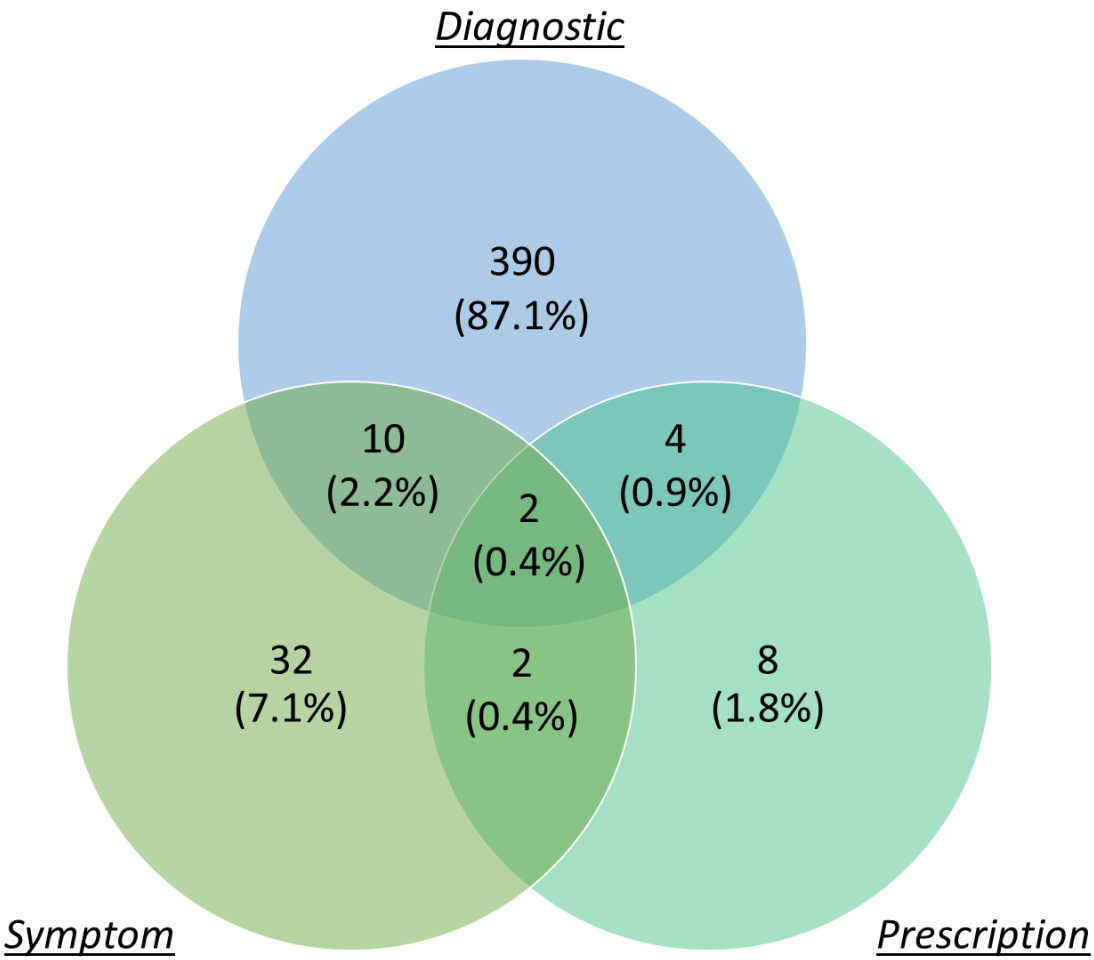

Figure 27. Venn diagram showing the overlap of each anxiety code type in the records of children and young people with incident anxiety

The cumulative incidence of anxiety was highest in the chronic condition group (2.28%, 95% CI: 1.93-2.66%) and lowest in the no long-term condition group (1.50%, 95% CI: 1.30-1.72%) (Table 31).

Table 31. Cumulative incidence of anxiety, by condition group

	Life-limiting condition (n=5480)	Chronic condition (n=6679)	No long-term condition (n=13,022)	Total sample (n=25.181)
Anxiety cases	101	152	195	448
Anxiety cumulative incidence (%)	1.84 (1.50-2.24)	2.28 (1.93-2.66)	1.50 (1.30-1.72)	1.78 (1.62-1.95)

The crude incidence rate of anxiety was also highest in the chronic condition group (5.04 cases per 1,000 person-years, 95% CI: 4.30-5.91), followed by the life-limiting condition group (4.27 cases per 1,000 person-years, 95% CI: 3.52-5.20). However, the confidence intervals for the incidence observed in these two groups overlap, demonstrating that the incidence did not differ significantly between the two groups. The lowest anxiety incidence was observed in the no long-term condition group (2.85 cases per 1,000 person years, 95% CI: 2.48-3.28). The confidence intervals for this group do not overlap with the confidence intervals for the chronic condition or life-limiting condition groups, indicating that these differences in incidence were significant (Figure 28).

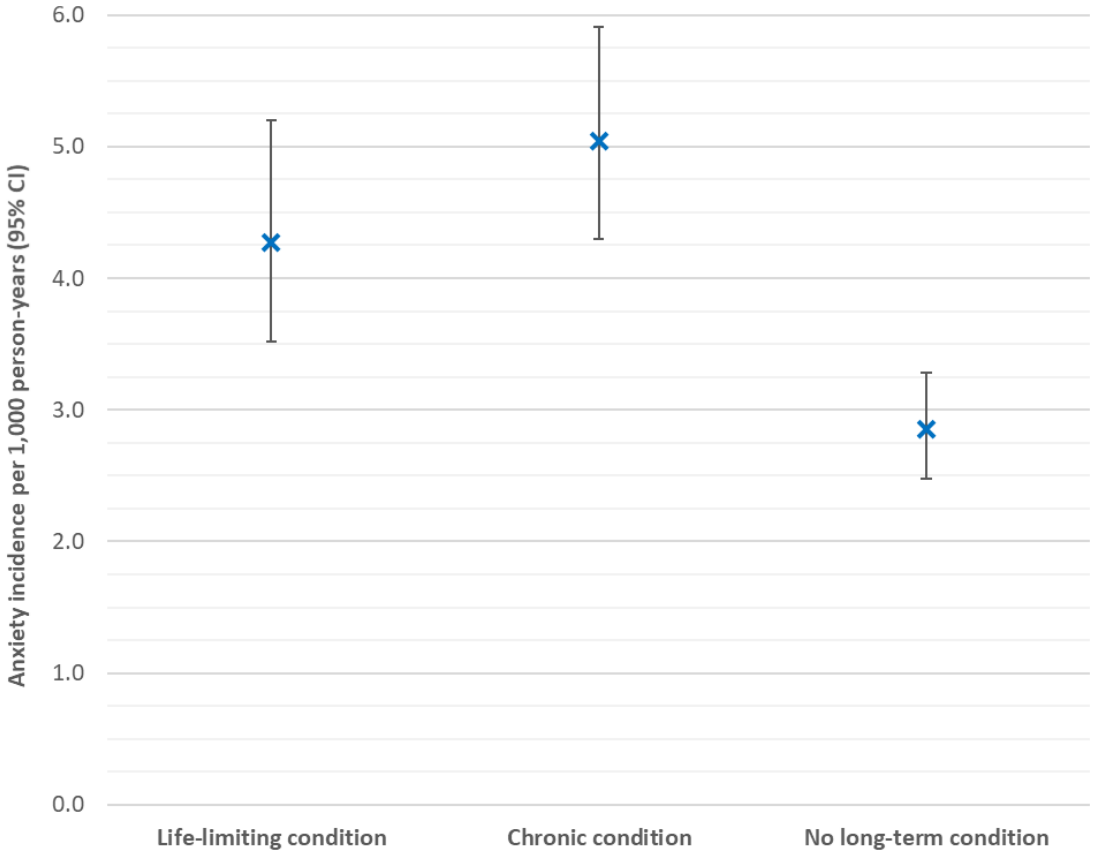

Figure 28. Anxiety incidence rate per 1,000 person years with 95% CIs, by condition group

In the overall study sample, the crude incidence of anxiety was higher in females (4.93 cases per 1,000 person years, 95% CI: 4.36-5.57) compared to males (2.73 cases per 1,000 person years, 95% CI: 2.37-3.14). Anxiety incidence was also higher among children and young people whose mothers had a severe mental illness (5.20 cases per 1,000 person years, 95% CI: 2.60-10.39) or a common mental health disorder (4.62 cases per 1,000 person years, 95% CI: 4.07-5.24) compared to children and young people whose mothers had no mental health conditions (2.91 cases per 1,000 person years, 95% CI: 2.53-3.34) (Table 32).

Table 32. Crude anxiety incidence per 1,000 person years for total sample and stratified by condition group, sex, ethnicity, deprivation status and exposure to maternal mental health conditions

Group/Covariate	Number of children	Anxiety cases, no. (%)	Person-Years in 1,000s	Crude anxiety incidence per 1,000 person-years (95% CI)
Total sample	25,181	448 (1.78)	122.16	3.67 (3.34-4.02)
Condition Group				
No long-term condition	13,022	195 (1.50)	68.36	2.85 (2.48-3.28)
Chronic condition	6,679	152 (2.28)	30.16	5.04 (4.30-5.91)
Life-limiting condition	5,480	101 (1.84)	23.63	4.27 (3.52-5.20)
Sex				
Male	14,149	191 (1.35)	70.06	2.73 (2.37-3.14)
Female	11,032	257 (2.33)	52.10	4.93 (4.36-5.57)
Ethnicity				
White	20,123	379 (1.88)	96.78	3.92 (3.54-4.33)
Black	587	≤10	2.37	2.53 (1.14-5.63)
South Asian	886	≤10	3.72	1.88 (0.90-3.95)
Other Asian	296	≤10	1.18	2.53 (0.82-7.85)
Other	324	≤10	1.38	1.45 (0.36-5.81)
Mixed	572	≤10	2.35	4.25 (2.29-7.90)
Missing	2,393	41 (1.71)	14.37	2.85 (2.10-3.88)
Deprivation Status				
1 (least deprived)	6,359	135 (2.12)	32.96	4.10 (3.46-4.85)
2	5,216	94 (1.80)	25.84	3.64 (2.97-4.45)
3	4,741	86 (1.81)	22.67	3.79 (3.07-4.69)
4	4,650	65 (1.40)	21.63	3.01 (2.36-3.83)
5 (most deprived)	4,200	68 (1.62)	18.98	3.58 (2.83-4.54)
Missing	15	0 (0.00)	0.07	0.00 (0.00-0.00)
Maternal Mental Health Conditions				
None	14,508	199 (1.37)	68.43	2.91 (2.53-3.34)
Common mental health disorder	10,337	241 (2.33)	52.19	4.62 (4.07-5.24)
Severe mental illness	336	≤10	1.54	5.20 (2.60-10.39)

Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored (^) to prevent censored cells being determined by differencing. Removed children and young people with missing deprivation status data.

The crude incidence rate ratios (IRRs) show that the incidence of anxiety in both the life-limiting condition group (IRR = 1.50, 95% CI: 1.18-1.91) and the chronic condition group (IRR = 1.77, 95% CI: 1.43-2.18) was significantly higher than that observed in the no long-term condition group (Table 33). Adjusting for sex, age, ethnicity and deprivation status (Model 1A) resulted in a slight reduction in the IRRs for the life-limiting condition group (IRR = 1.39, 95% CI: 1.09-1.77) and the chronic condition group (IRR = 1.64, 95% CI: 1.32-2.03). However, there was still a significant difference in anxiety incidence in these groups compared to the no long-term condition group. This was also observed when maternal mental health conditions were added to the model (Model 1B).

The additional adjustment of annual GP visits (Model 1C), however, further reduced the IRRs in both the life-limiting condition group (IRR = 1.00, 95% CI: 0.77-1.29) and the chronic condition group (IRR = 1.40, 95% CI: 1.13-1.74), meaning that although there was a significant difference in anxiety incidence in the chronic condition group compared to the no long-term condition group, the difference in anxiety incidence between the life-limiting condition group and the no long-term condition group was no longer significant. The BIC for Model 1C was lower than those reported for Model 1B or 1A. However, as Models 1B and 1C adjusted for potential mediators (maternal mental health, annual GP visits), Model 1A was the most robust.

In all models, the incidence of anxiety was significantly associated with female sex, increased age at study entry and a higher number of GP visits. Incidence was also significantly higher among children and young people whose mothers had a common mental health disorder (IRR = 1.50, 95% CI: 1.24-1.81) compared to those whose mothers had no mental health conditions. These trends remained consistent when children and young people with missing ethnicity data were removed from Model 1C (Appendix 12).

The risk of anxiety was also significantly higher in both the life-limiting and chronic condition groups compared to the no long-term condition group in both of the Supplementary Models performed for the sensitivity analysis (Appendix 13). Therefore, the results from the main analysis were unaffected by the presence or absence of age as a time-dependent covariate.

Table 33. Crude and adjusted anxiety incidence rate ratios

Group/Covariate	Crude incidence rate ratio (95% CI)	Model 1A: Adjusted incidence rate ratio (95% CI)	Model 1B: Adjusted incidence rate ratio (95% CI)	Model 1C: Adjusted incidence rate ratio (95% CI)
Condition Group				
No long-term condition	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Chronic condition	1.77 (1.43-2.18)**	1.64 (1.32-2.03)**	1.58 (1.27-1.96)**	1.40 (1.13-1.74)**
Life-limiting condition	1.50 (1.18-1.91)**	1.39 (1.09-1.77)**	1.34 (1.05-1.71)*	1.00 (0.77-1.29)
Sex				
Male	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Female	1.81 (1.50-2.18)**	1.86 (1.54-2.24)**	1.87 (1.55-2.26)**	1.80 (1.49-2.18)**
Age at Study Entry	1.14 (1.11-1.16)**	1.13 (1.11-1.16)**	1.13 (1.11-1.16)**	1.12 (1.09-1.15)**
Ethnicity				
White	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Black	0.65 (0.29-1.45)	0.79 (0.35-1.79)	0.88 (0.39-1.99)	0.79 (0.35-1.79)
South Asian	0.48 (0.23-1.01)	0.56 (0.26-1.18)	0.61 (0.29-1.29)	0.55 (0.26-1.16)
Other Asian	0.65 (0.21-2.01)	0.75 (0.24-2.34)	0.83 (0.27-2.61)	0.78 (0.25-2.44)
Other	0.37 (0.09-1.49)	0.39 (0.10-1.56)	0.40 (0.10-1.60)	0.43 (0.11-1.71)
Mixed	1.08 (0.58-2.03)	1.27 (0.67-2.38)	1.26 (0.67-2.37)	1.11 (0.58-2.10)
Missing	0.73 (0.53-1.01)	0.72 (0.52-1.00)*	0.74 (0.54-1.03)	0.80 (0.58-1.11)
Deprivation Status				
1 (least deprived)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
2	0.89 (0.68-1.16)	0.83 (0.64-1.09)	0.83 (0.63-1.07)	0.85 (0.65-1.11)
3	0.93 (0.71-1.21)	0.86 (0.65-1.13)	0.84 (0.64-1.10)	0.89 (0.68-1.17)
4	0.73 (0.55-0.99)*	0.70 (0.52-0.94)*	0.67 (0.49-0.90)**	0.70 (0.52-0.95)*
5 (most deprived)	0.87 (0.65-1.17)	0.84 (0.63-1.13)	0.78 (0.58-1.05)	0.83 (0.62-1.12)
Maternal Mental Health Conditions				
None	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Common mental health disorder	1.59 (1.32-1.92)**	NA	1.53 (1.26-1.85)**	1.50 (1.24-1.81)**
Severe mental illness	1.79 (0.88-3.62)	NA	1.72 (0.85-3.49)	1.32 (0.64-2.71)
Annual GP Visits	1.09 (1.08-1.10)**	NA	NA	1.09 (1.08-1.10)**
BIC	NA	4783.848	4784.423	4702.547

*$p \leq 0.05$ **$p \leq 0.01$
NA: Not applicable
Crude IRR: no adjustment (model uses covariate of interest as independent variable)
Model 1A: adjusted for sex, age, ethnicity and deprivation status
Model 1B: adjusted for sex, age, ethnicity, deprivation status and maternal mental health conditions
Model 1C: adjusted for sex, age, ethnicity, deprivation status maternal mental health conditions and annual GP visits
Children and young people with missing deprivation status data were not included in models.

5.4 Incidence of Depression

This section describes the results of the analysis for the second research question: 'what is the incidence of depression in children and young people with life-limiting conditions and how does this compare to the incidence in children and young people with chronic conditions or no long-term conditions'.

Of the 25,313 children and young people in the study sample, 51 had been diagnosed with depression prior to the start of the study. Therefore, 25,262 children and young people were included in the analysis of depression incidence, 393 of whom had incident cases of depression (Figure 29).

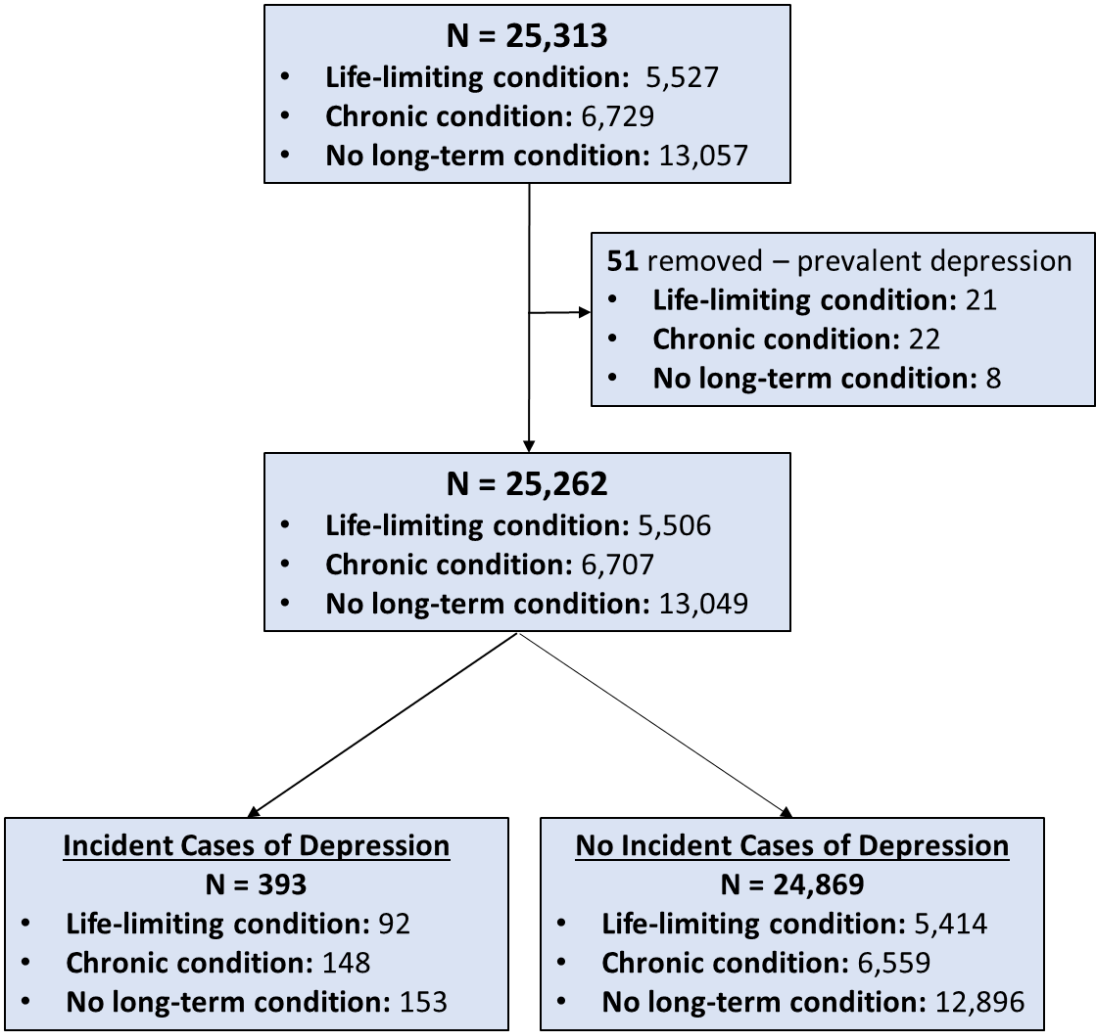

Figure 29. Flow diagram showing the number of incident cases of depression from the sample of 25,262 children and young people eligible for the analysis of depression incidence

Less than two-thirds (59.3%) of children and young people with incident depression had a diagnostic depression code in their records, either as the only type of depression code recorded or in combination with other types of depression codes. The proportion of children and young people with recorded prescription codes was similar (51.4%), whereas the proportion of children and young people with a recorded symptom code was much smaller (30.3%) (Figure 30).

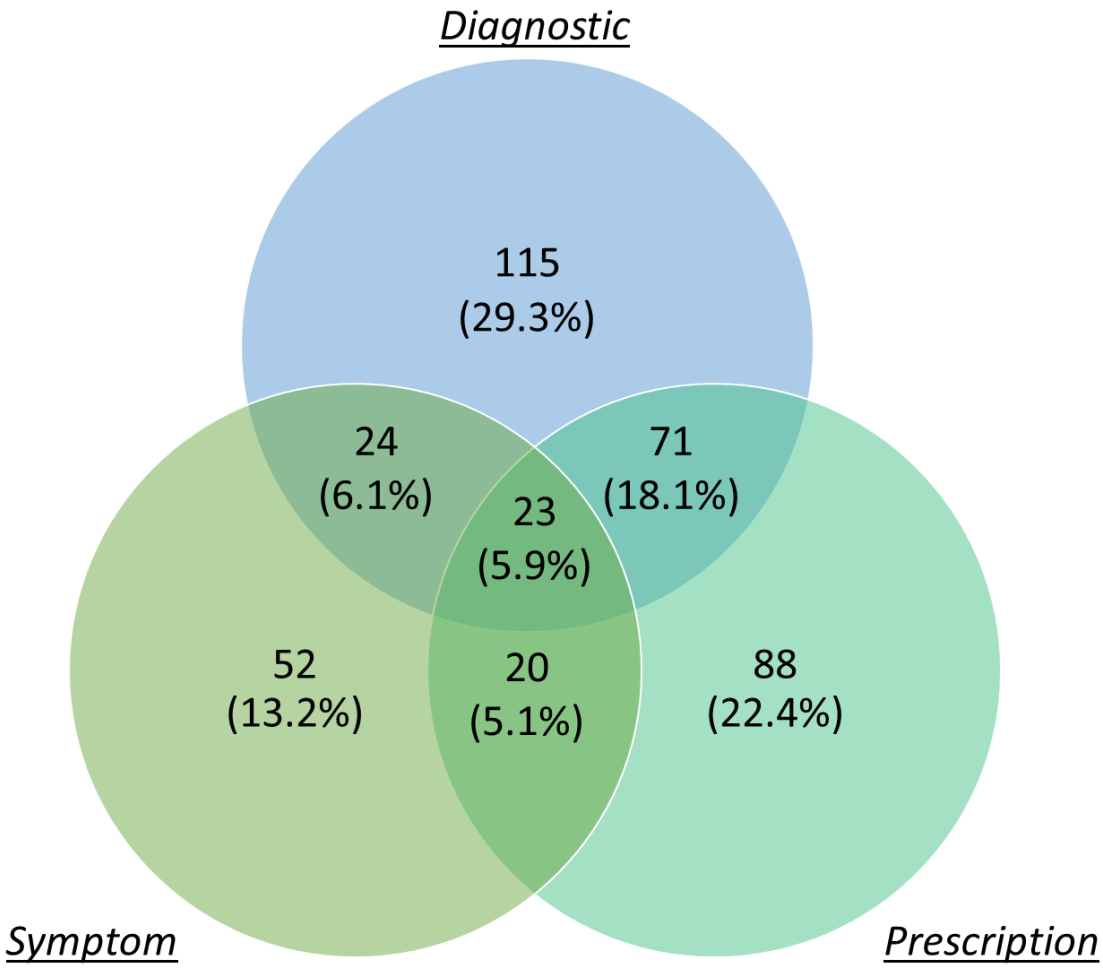

Figure 30. Venn diagram showing the overlap of each depression code type in the records of children and young people with incident depression

The cumulative incidence of depression was higher in both the chronic condition group (2.21, 95% CI: 1.87-2.59) and the life-limiting condition group (1.67, 95% CI: 1.35-2.05), compared to the no long-term condition group (1.17, 95% CI: 0.99-1.37) (Table 34).

Table 34. Cumulative incidence of depression, by condition group

	Life-limiting condition (n=5,506)	Chronic Condition (n=6,707)	No long-term condition (n=13,049)	Total sample (n=25,262)
Depression cases	92	148	153	393
Depression cumulative incidence (%)	1.67 (1.35-2.05)	2.21 (1.87-2.59)	1.17 (0.99-1.37)	1.56 (1.41-1.72)

The highest crude incidence of depression was observed in the chronic condition group (4.88 cases per 1,000 person-years, 95% CI: 4.15-5.73), followed by the life-limiting condition group (3.87 cases per 1,000 person-years, 95% CI: 3.15-4.75). However, the confidence intervals for the incidence estimates from these two groups do overlap. The lowest incidence of depression was observed in the no long-term condition group (2.23 cases per 1,000 person-years, 95% CI: 1.90-2.61), and the confidence intervals do not overlap with the confidence intervals for the chronic condition or life-limiting condition groups (Figure 31).

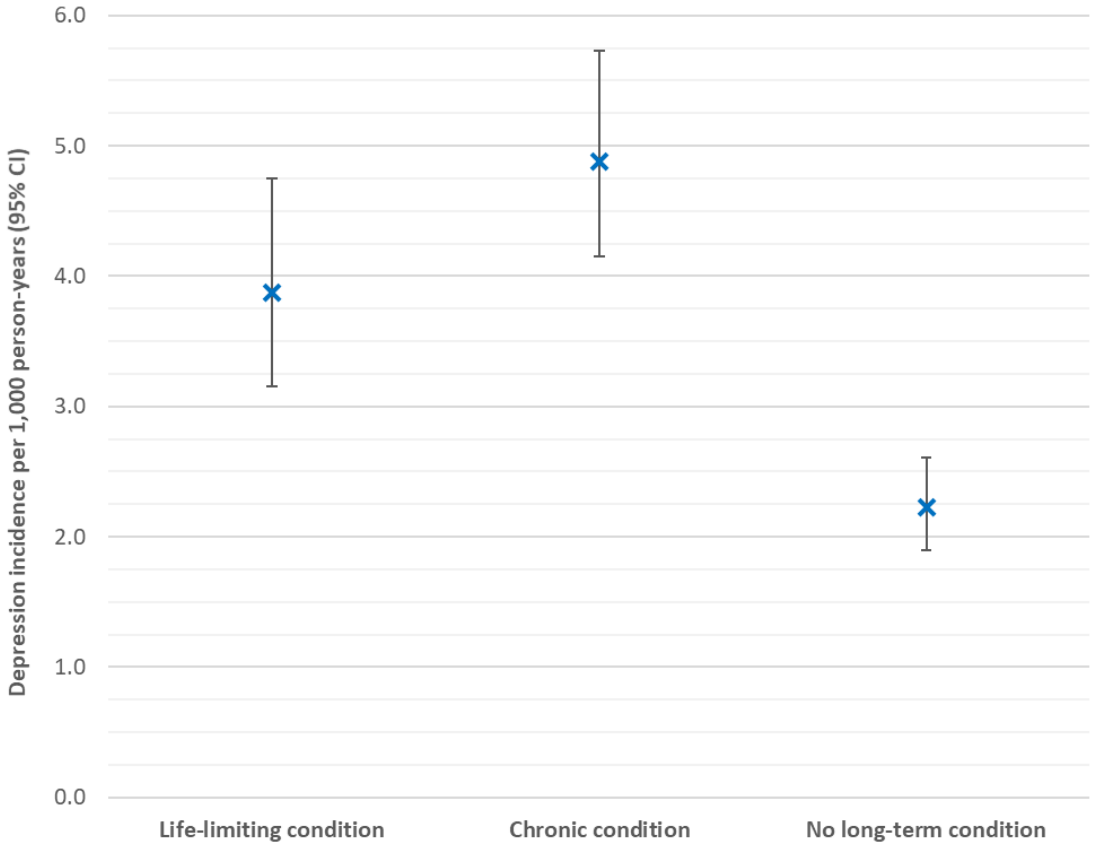

Figure 31. Depression incidence rate per 1,000 person years with 95% CIs, by condition group

The crude incidence of depression in females (4.72 cases per 1,000 person-years, 95% CI: 4.17-5.35) was over twice that observed in males (2.07 cases per 1,000 person-years, 95% CI: 1.76-2.44). Depression incidence was also highest among children and young people from a White ethnic background (3.64 cases per 1,000 person-years, 95% CI: 3.28-4.04), and among children and young people whose mothers had a severe mental illness (5.15 cases per 1,000 person-years, 95% CI: 2.57-10.29) (Table 35).

Table 35. Crude depression incidence per 1,000 person years for total sample and stratified by condition group, sex, ethnicity, deprivation status and exposure to maternal mental health conditions

Group/Covariate	Number of children	Depression cases, no. (%)	Person-Years in 1,000s	Crude depression incidence per 1,000 person-years (95% CI)
Total sample	25,262	393 (1.56)	122.75	3.20 (2.90-3.53)
Condition Group				
No long-term condition	13,049	153 (1.17)	68.63	2.23 (1.90-2.61)
Chronic condition	6,707	148 (2.21)	30.34	4.88 (4.15-5.73)
Life-limiting condition	5,506	92 (1.67)	23.78	3.87 (3.15-4.75)
Sex				
Male	14,194	146 (1.03)	70.44	2.07 (1.76-2.44)
Female	11,068	247 (2.23)	52.31	4.72 (4.17-5.35)
Ethnicity				
White	20,190	354 (1.75)	97.25	3.64 (3.28-4.04)
Black	587	≤10	2.38	1.26 (0.41-3.91)
South Asian	890	≤10	3.73	0.80 (0.26-2.49)
Other Asian	297	≤10	1.20	3.34 (1.25-8.89)
Other	324	0	1.38	0.00 (0.00-0.00)
Mixed	573	≤10	2.36	1.69 (0.64-4.51)
Missing	2,401	25 (1.04)	14.45	1.73 (1.17-2.56)
Deprivation Status				
1 (least deprived)	6,394	112 (1.75)	33.18	3.38 (2.81-4.06)
2	5,232	72 (1.38)	25.97	2.77 (2.20-3.49)
3	4,752	77 (1.62)	22.79	3.38 (2.70-4.22)
4	4,668	63 (1.35)	21.72	2.90 (2.27-3.71)
5 (most deprived)	4,202	72 (1.71)	19.02	3.79 (3.00-4.77)
Missing	15	0 (0.00)	0.07	0.00 (0.00-0.00)
Maternal Mental Health Conditions				
None	14,539	155 (1.07)	68.70	2.26 (1.93-2.64)
Common mental health disorder	10,384	^	52.49	4.38 (3.85-4.99)
Severe mental illness	339	≤10	1.55	5.15 (2.57-10.29)

Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored (^) to prevent censored cells being determined by differencing. Removed children and young people with missing deprivation status data.

As shown by the crude IRRs, the incidence of depression was significantly higher in the life-limiting condition group (IRR = 1.73, 95% CI: 1.34-2.25) and the chronic condition group (IRR = 2.19, 95% CI: 1.74-2.74) compared to the no long-term condition group (Table 36). Adjusting for sex, age, ethnicity and deprivation status (Model 2A) resulted in a reduction in the IRRs for the life-limiting condition group (IRR = 1.41, 95% CI: 1.08-1.83) and the chronic condition group (IRR = 1.81, 95% CI: 1.44-2.28), however the difference in depression incidence between these groups and the no long-term condition group was still significant. This was also observed when maternal mental health conditions were added to the model (Model 2B).

However, the additional adjustment for annual GP visits and exposure to maternal mental health conditions, reduced the IRRs for both the life-limiting condition group (IRR = 1.11, 95% CI: 0.85-1.46) and the chronic condition group (IRR = 1.58, 95% CI: 1.25-1.98), meaning that the difference in depression incidence between the life-limiting condition group and the no long-term condition group was no longer significant. The smallest BIC was found for Model 2C. However, as Models 2B and 2C adjusted for potential mediators (maternal mental health, annual GP visits), Model 2A was the most robust.

In all models, depression incidence was significantly associated with female sex, increased age at study entry, and a higher number of GP visits in all models. The highest incidence of depression was observed in the White ethnic group, whilst the incidence in the South Asian group (IRR = 0.30, 95% CI: 0.10-0.94) and among children and young people with missing ethnicity data (IRR = 0.50, 95% CI: 0.33-0.76) was significantly lower. The incidence of depression was also significantly higher among children and young people whose mothers had a common mental health disorder compared to children whose mothers had no mental health conditions (IRR = 1.73, 95% CI: 1.41-2.13). These trends remained consistent when children and young people with missing ethnicity data were removed from Model 2C (Appendix 12).

Table 36. Crude and adjusted depression incidence rate ratios

Group/Covariate	Crude incidence rate ratio (95% CI)	Model 2A: Adjusted incidence rate ratio (95% CI)	Model 2B: Adjusted incidence rate ratio (95% CI)	Model 2C: Adjusted incidence rate ratio (95% CI)
Condition Group				
No long-term condition	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Chronic condition	2.19 (1.74-2.74)**	1.81 (1.44-2.28)**	1.72 (1.37-2.16)**	1.58 (1.25-1.98)**
Life-limiting condition	1.73 (1.34-2.25)**	1.41 (1.08-1.83)**	1.34 (1.03-1.74)*	1.11 (0.85-1.46)
Sex				
Male	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Female	2.28 (1.86-2.79)**	2.35 (1.92-2.89)**	2.38 (1.94-2.92)**	2.24 (1.83-2.75)**
Age at Study Entry	1.27 (1.24-1.30)**	1.26 (1.23-1.29)**	1.26 (1.23-1.29)**	1.25 (1.22-1.28)**
Ethnicity				
White	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Black	0.35 (0.11-1.08)	0.47 (0.15-1.48)	0.55 (0.18-1.72)	0.53 (0.17-1.65)
South Asian	0.22 (0.07-0.69)**	0.28 (0.09-0.88)*	0.32 (0.10-1.01)	0.30 (0.10-0.94)*
Other Asian	0.92 (0.34-2.45)	1.26 (0.47-3.39)	1.44 (0.54-3.88)	1.38 (0.51-3.71)
Other	0.00 (0.00-0.00)	0.00 (0.00-0.00)	0.00 (0.00-0.00)	0.00 (0.00-0.00)
Mixed	0.46 (0.17-1.25)	0.65 (0.24-1.73)	0.64 (0.24-1.71)	0.63 (0.23-1.68)
Missing	0.48 (0.32-0.71)**	0.45 (0.30-0.68)**	0.47 (0.31-0.71)**	0.50 (0.33-0.76)**
Deprivation Status				
1 (least deprived)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
2	0.83 (0.62-1.11)	0.75 (0.56-1.01)	0.74 (0.55-0.99)*	0.75 (0.56-1.01)*
3	0.98 (0.73-1.32)	0.86 (0.64-1.16)	0.84 (0.62-1.12)	0.86 (0.64-1.16)
4	0.87 (0.64-1.18)	0.79 (0.58-1.08)	0.75 (0.55-1.03)	0.76 (0.55-1.03)
5 (most deprived)	1.13 (0.84-1.52)	1.07 (0.79-1.44)	0.97 (0.72-1.30)	1.00 (0.74-1.35)
Maternal Mental Health Conditions				
None	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Common mental health disorder	1.94 (1.58-2.38)**	NA	1.78 (1.45-2.19)**	1.73 (1.41-2.13)**
Severe mental illness	2.28 (1.12-4.64)*	NA	2.14 (1.05-4.36)*	2.00 (0.98-4.07)
Annual GP Visits	1.07 (1.06-1.07)**	NA	NA	1.06 (1.05-1.07)**
BIC	NA	3852.399	3840.951	3805.54

*$p \leq 0.05$ **$p \leq 0.01$
NA: Not applicable
Crude IRR: no adjustment (model uses covariate of interest as independent variable)
Model 2A: adjusted for sex, age, ethnicity and deprivation status
Model 2B: adjusted for sex, age, ethnicity, deprivation status and maternal mental health conditions
Model 2C: adjusted for sex, age, ethnicity, deprivation status maternal mental health conditions and annual GP visits
Children and young people with missing deprivation status data were not included in models.

5.5 Incidence of Anxiety and/or Depression

This section describes the results of the analysis for the third research question: 'what is the incidence of anxiety and/or depression in children and young people with life-limiting conditions and how does this compare to the incidence in children and young people with chronic conditions or no long-term conditions'.

Of the 25,313 children and young people in the study sample, 175 had been diagnosed with anxiety and/or depression prior to the start of the study. Therefore, the analysis of the incidence of anxiety and/or depression included 25,138 children and young people, of whom 764 had incident cases (Figure 32).

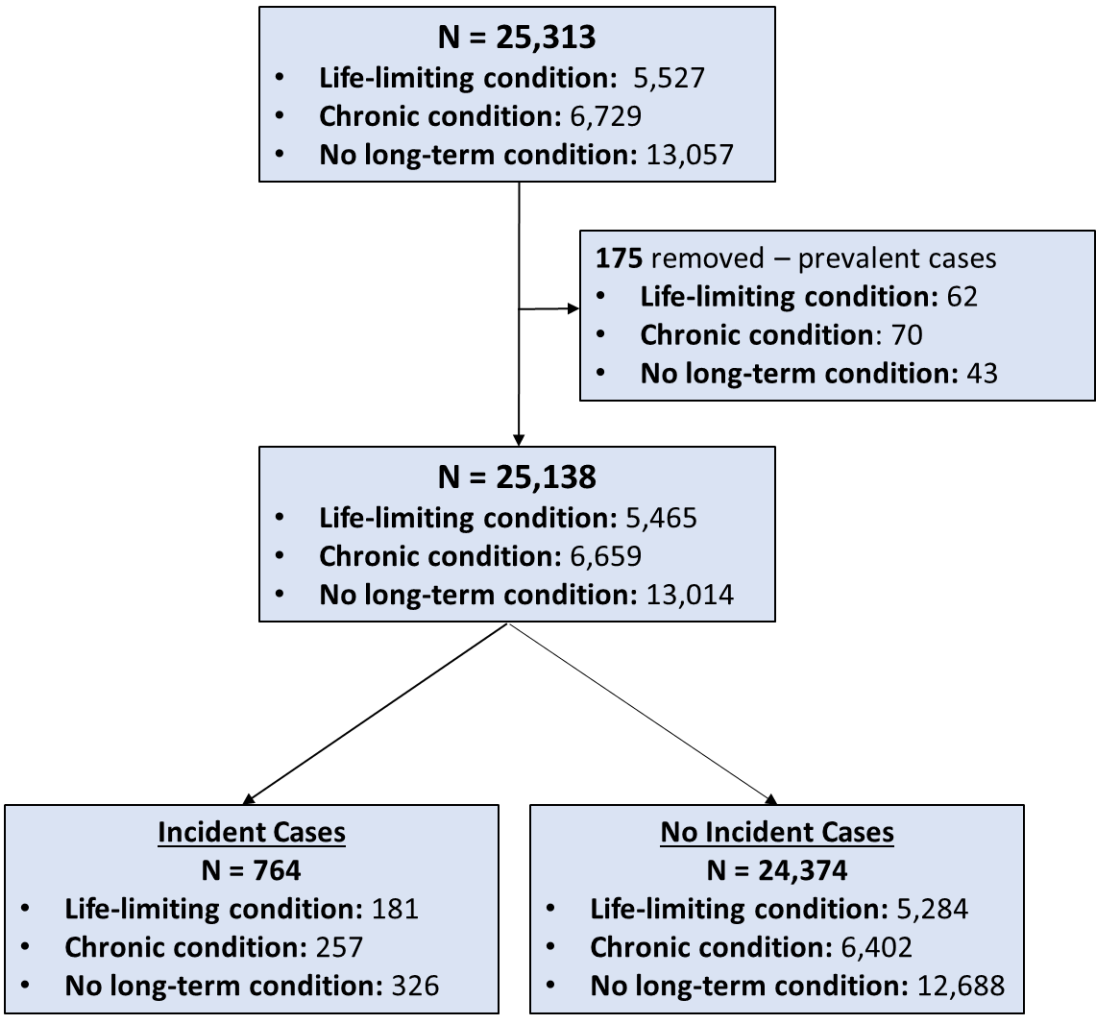

Figure 32. Flow diagram showing the number of incident cases of anxiety and/or depression from the sample of 25,138 children and young people eligible for the analysis of the incidence of anxiety and/or depression

Almost a quarter of children and young people (21.8%) with anxiety and/or depression did not have a diagnostic code for anxiety, depression or co-morbid anxiety and depression in their records. The proportions of children and young people with only a symptom code or only a prescription code were similar (9.0% and 10.0% respectively) (Figure 33).

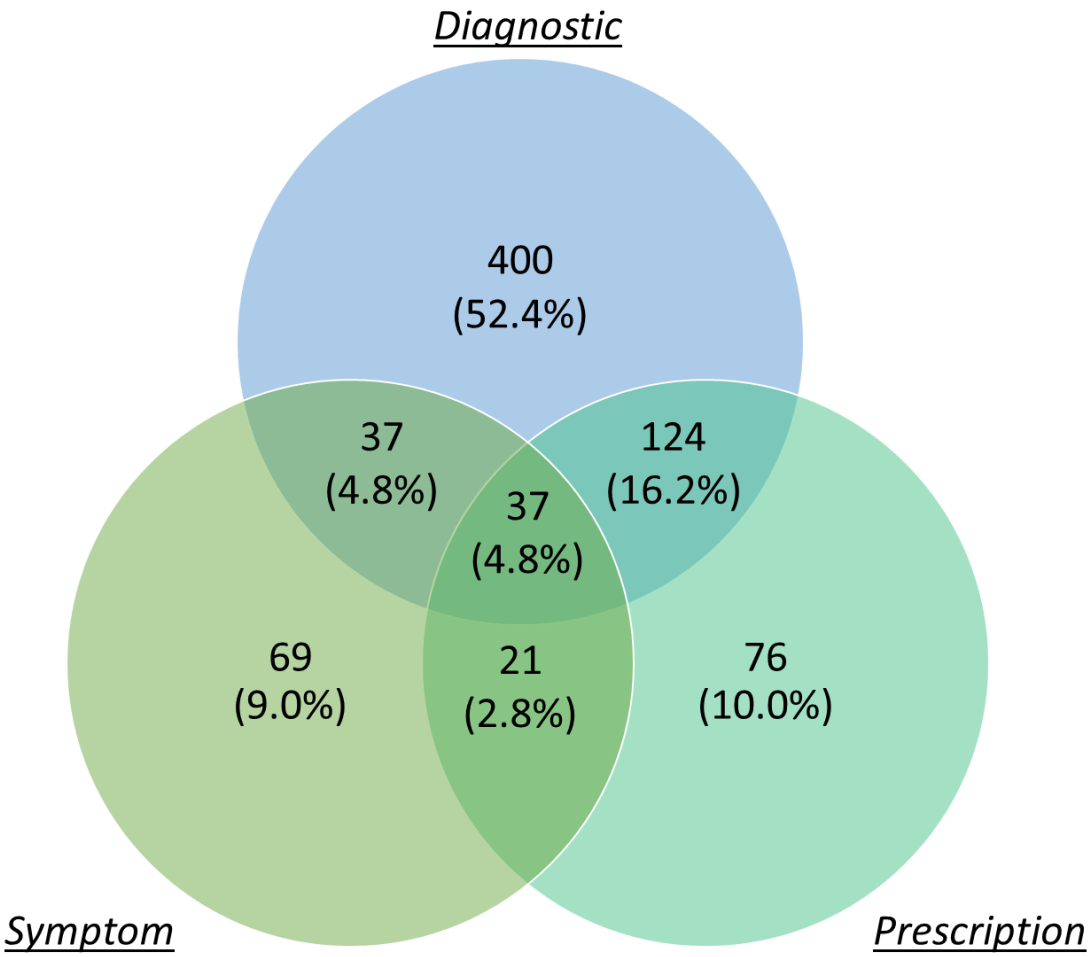

Figure 33. Venn diagram showing the overlap of each code type in the records of children and young people with anxiety and/or depression

The highest cumulative incidence of anxiety and/or depression was observed in the chronic condition group (3.86%, 95% CI: 3.41-4.35%), followed by the life-limiting condition group (3.31%, 95% CI: 2.85-3.82%). The lowest cumulative incidence was found for the no long-term condition group (2.50%, 95% CI: 2.24-2.79%) (Table 37).

Table 37. Cumulative incidence of anxiety and/or depression, by condition group

	Life-limiting condition (n=5,465)	Chronic condition (n=6,659)	No long-term condition (n=13,014)	Total sample (n=25,138)
Cases	181	257	326	764
Cumulative incidence (%)	3.31 (2.85-3.82)	3.86 (3.41-4.35)	2.50 (2.24-2.79)	3.04 (2.83-3.26)

The highest incidence of anxiety and/or depression was seen in the chronic condition group (8.58 cases per 1,000 person-years, 95% CI: 7.59-9.70). However, the incidence in the life-limiting condition group was similar (7.72 cases per 1,000 person-years, 95% CI: 6.67-8.93), and the confidence intervals for the two groups overlap, showing that the incidence estimates were not significantly different between the two groups. The lowest incidence was observed in the no long-term condition group (4.79 cases per 1,000 person-years, 95% CI: 4.29-5.33) and the confidence intervals for this group do not overlap with the confidence intervals for the chronic condition or life-limiting condition groups, demonstrating that the differences in incidence were significant (Figure 34).

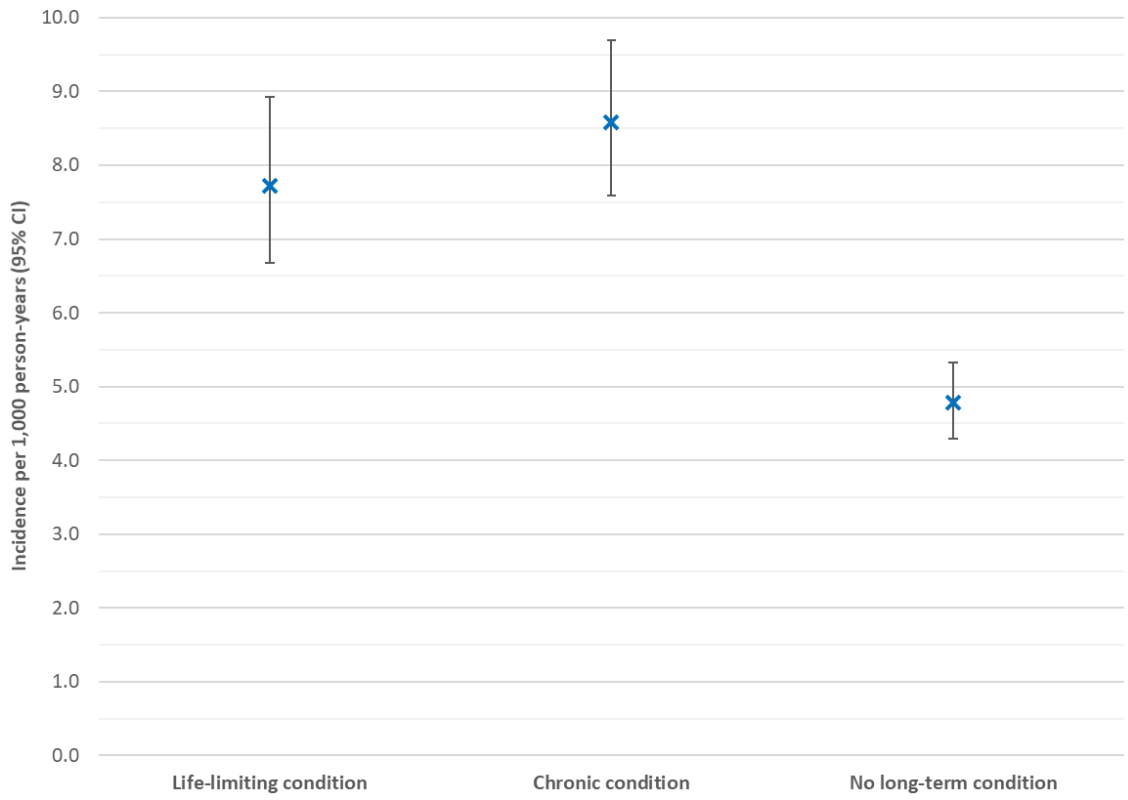

Figure 34. Incidence of anxiety and/or depression per 1,000 person years with 95% CIs, by condition group

The crude incidence of anxiety and/or depression in females (8.64 cases per 1,000 person-years, 95% CI: 7.88-9.48) was higher than in males (4.54 cases per 1,000 person-years, 95% CI: 4.07-5.07). Incidence was also highest among children and young people from a White ethnic background (6.95 cases per 1,000 person-years, 95% CI: 6.45-7.50) The crude incidence of anxiety and/or depression in children and young people whose mothers had a severe mental illness (10.56 cases per 1,000 person-years, 95% CI: 6.47-17.24) was over twice that observed among children and young people whose mothers had no maternal mental health conditions (4.85 cases per 1,000 person-years, 95% CI: 4.36-5.40) (Table 38).

Table 38. Crude incidence of anxiety and/or depression per 1,000 person years for total sample and stratified by condition group, sex, ethnicity, deprivation status and exposure to maternal mental health conditions

Group/Covariate	Number of children	Cases, no. (%)	Person-Years in 1,000s	Crude incidence of anxiety and/or depression per 1,000 person-years (95% CI)
Total sample	25,138	764 (3.04)	121.52	6.29 (5.86-6.75)
Condition Group				
No long-term condition	13,014	326 (2.50)	68.13	4.79 (4.29-5.33)
Chronic condition	6,659	257 (3.86)	29.95	8.58 (7.59-9.70)
Life-limiting condition	5,465	181 (3.31)	23.44	7.72 (6.67-8.93)
Sex				
Male	14,130	317 (2.24)	69.79	4.54 (4.07-5.07)
Female	11,008	447 (4.06)	51.73	8.64 (7.88-9.48)
Ethnicity				
White	20,087	669 (3.33)	96.21	6.95 (6.45-7.50)
Black	586	≤10	2.37	2.53 (1.14-5.63)
South Asian	886	≤10	3.71	2.42 (1.26-4.66)
Other Asian	296	≤10	1.18	5.91 (2.82-12.40)
Other	322	≤10	1.37	1.46 (0.36-5.83)
Mixed	572	12 (2.10)	2.35	5.11 (2.90-9.00)
Missing	2,389	59 (2.47)	14.33	4.12 (3.19-5.32)
Deprivation Status				
1 (least deprived)	6,351	220 (3.46)	32.78	6.71 (5.88-7.66)
2	5,211	148 (2.84)	25.74	5.75 (4.90-6.76)
3	4,731	150 (3.17)	22.55	6.65 (5.67-7.80)
4	4,644	118 (2.54)	21.52	5.48 (4.58-6.57)
5 (most deprived)	4,186	128 (3.06)	18.86	6.79 (5.71-8.07)
Missing	15	0 (0.0)	0.07	0.00 (0.00-0.00)
Maternal Mental Health Conditions				
None	14,504	331 (2.28)	68.22	4.85 (4.36-5.40)
Common mental health disorder	10,299	417 (4.05)	51.79	8.05 (7.31-8.86)
Severe mental illness	335	16 (4.78)	1.52	10.56 (6.47-17.24)

Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored (^) to prevent censored cells being determined by differencing. Removed children and young people with missing deprivation status data.

The crude IRRs demonstrated that the incidence of anxiety and/or depression was significantly higher in the life-limiting condition group (IRR = 1.61, 95% CI: 1.34-1.93) and the chronic condition group (IRR = 1.79, 95% CI: 1.52-2.11) compared to the no long-term condition group (Table 39). Adjusting for sex, age, ethnicity and deprivation status (Model 3A) reduced the IRRs in both the life-limiting condition group (IRR = 1.41, 95% CI: 1.18-1.70) and the chronic condition group (IRR = 1.59, 95% CI: 1.35-1.88). However, the incidence in these groups was still significantly higher than that observed in the no long-term condition group. This was also observed when exposure to maternal mental health conditions was added to the model (Model 3B).

However, the additional adjustment for annual GP visits (Model 3B) further reduced the IRRs, meaning that the difference in incidence between the life-limiting condition group and the no long-term condition group was no longer significant. The BIC for Model 3C was the smallest. However, as Models 3B and 3C adjusted for potential mediators (maternal mental health, annual GP visits), Model 3A was the most robust.

The incidence of anxiety and/or depression was significantly higher among females, children who were older at study entry and children and young people who visited the GP more frequently. Conversely, children and young people from a South Asian origin, those with ethnicity classified as Other and those with missing ethnicity data all had a significantly lower incidence of anxiety and/or depression compared to children and young people from the White ethnic group. Incidence was also significantly higher among children and young people whose mothers had a common mental health disorder or a severe mental illness compared to children and young people whose mothers had no mental health conditions. These trends remained consistent when children and young people with missing ethnicity data were removed from Model 3C (Appendix 12).

Table 39. Crude and adjusted anxiety and/or depression incidence rate ratios

Group/Covariate	Crude incidence rate ratio (95% CI)	Model 3A: Adjusted incidence rate ratio (95% CI)	Model 3B: Adjusted incidence rate ratio (95% CI)	Model 3C: Adjusted incidence rate ratio (95% CI)
Condition Group				
No long-term condition	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Chronic condition	1.79 (1.52-2.11)**	1.59 (1.35-1.88)**	1.53 (1.30-1.81)**	1.36 (1.15-1.61)**
Life-limiting condition	1.61 (1.34-1.93)**	1.41 (1.18-1.70)**	1.36 (1.13-1.64)**	1.04 (0.85-1.26)
Sex				
Male	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Female	1.90 (1.65-2.20)**	1.98 (1.71-2.28)**	1.99 (1.72-2.30)**	1.91 (1.65-2.20)**
Age at Study Entry	1.19 (1.17-1.21)**	1.18 (1.16-1.21)**	1.18 (1.16-1.21)**	1.17 (1.15-1.19)**
Ethnicity				
White	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Black	0.36 (0.16-0.81)*	0.46 (0.20-1.02)	0.51 (0.23-1.15)	0.46 (0.21-1.04)
South Asian	0.35 (0.18-0.67)**	0.42 (0.21-0.80)**	0.46 (0.24-0.89)*	0.41 (0.21-0.79)**
Other Asian	0.85 (0.40-1.79)	1.04 (0.49-2.19)	1.16 (0.55-2.44)	1.08 (0.51-2.29)
Other	0.21 (0.05-0.84)*	0.22 (0.05-0.88)*	0.22 (0.06-0.90)*	0.24 (0.06-0.96)*
Mixed	0.73 (0.41-1.30)	0.91 (0.51-1.61)	0.90 (0.51-1.60)	0.80 (0.45-1.43)
Missing	0.59 (0.45-0.77)**	0.57 (0.43-0.75)**	0.59 (0.45-0.78)**	0.64 (0.49-0.84)**
Deprivation Status				
1 (least deprived)	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
2	0.86 (0.70-1.06)	0.79 (0.64-0.98)*	0.78 (0.64-0.96)*	0.81 (0.65-0.99)*
3	0.99 (0.81-1.22)	0.90 (0.73-1.11)	0.88 (0.71-1.08)	0.93 (0.75-1.14)
4	0.82 (0.65-1.02)	0.77 (0.62-0.97)*	0.74 (0.59-0.92)**	0.77 (0.62-0.97)*
5 (most deprived)	1.01 (0.81-1.26)	0.98 (0.78-1.22)	0.90 (0.72-1.12)	0.96 (0.77-1.20)
Maternal Mental Health Conditions				
None	1.00 (ref)	1.00 (ref)	1.00 (ref)	1.00 (ref)
Common mental health disorder	1.66 (1.44-1.92)**	NA	1.56 (1.34-1.80)**	1.53 (1.32-1.77)**
Severe mental illness	2.18 (1.32-3.59)**	NA	2.05 (1.24-3.40)**	1.69 (1.02-2.81)*
Annual GP Visits	1.09 (1.08-1.09)**	NA	NA	1.08 (1.07-1.09)**
BIC	NA	6906.819	6888.292	6622.25

*$p \leq 0.05$ **$p \leq 0.01$
NA: Not applicable
Crude IRR: no adjustment (model uses covariate of interest as independent variable)
Model 3A: adjusted for sex, age, ethnicity and deprivation status
Model 3B: adjusted for sex, age, ethnicity, deprivation status and maternal mental health conditions
Model 3C: adjusted for sex, age, ethnicity, deprivation status maternal mental health conditions and annual GP visits
Children and young people with missing deprivation status data were not included in models.

Only a small proportion of children and young people (10.0%) had incident cases of both anxiety and depression during the study period. The vast majority of children and young people (99.0%) with incident cases of anxiety or depression were also included as cases of 'anxiety and/or depression'. The exceptions to this were children and young people with incident anxiety who also had a prevalent case of depression (or vice versa), and therefore were excluded from the analysis of the incidence of 'anxiety and/or depression' (Figure 35).

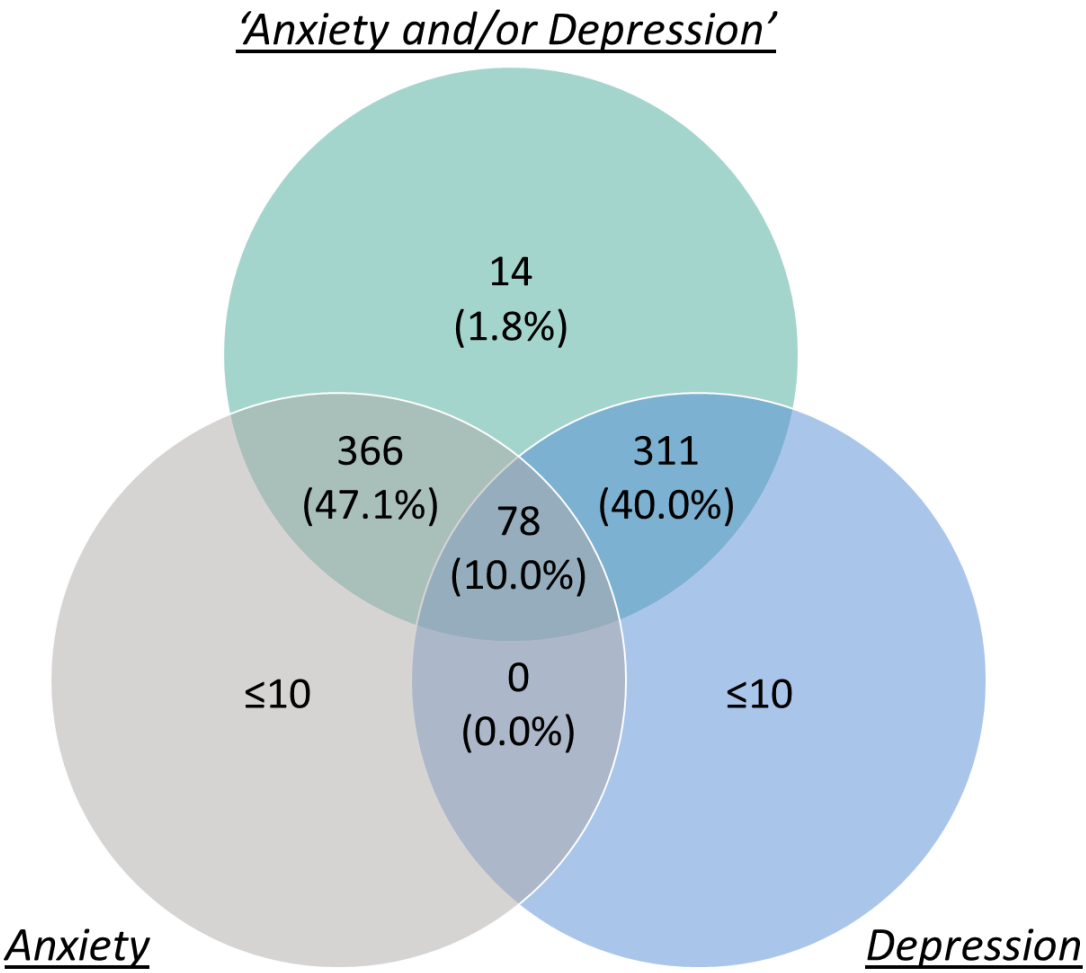

Figure 35. Venn diagram showing the overlap of children and young people with incident cases of anxiety, depression and 'anxiety and/or depression'
Values of 10 or less are censored ('≤10').

5.6 Factors Associated with Anxiety, Depression or 'Anxiety and/or Depression'

This section describes the results of the analysis for research questions 4-6 which involved examining what factors were associated with anxiety, depression or 'anxiety and/or depression' and how these factors compared across the three condition groups. The factors analysed were sex, age at study entry, ethnicity, deprivation status, annual GP visits and exposure to maternal mental health conditions.

Sex

The incidence of anxiety, depression and 'anxiety and/or depression' was significantly higher in females compared to males across all three condition groups (Figure 36, Table 40). In all condition groups, the confidence intervals for the female anxiety/depression/'anxiety and/or depression' incidence estimates were wider than those for males, showing a higher degree of variability. The significant difference in incidence between males and females was observed in both the crude and adjusted incidence rate ratios. The largest difference in incidence between males and females was seen for depression incidence in the no long-term condition group (IRR = 2.60, 95% CI: 1.84-3.67), demonstrating that the incidence among females was more than double that observed among males.

Age at Study Entry

Age at study entry was significantly associated with the incidence of anxiety, depression and 'anxiety and/or depression' in all condition groups (Table 41). The highest incidence rate ratios comparing ages were observed for depression incidence, which was 1.26 (95% CI: 1.20-1.33) in the life-limiting condition group, indicating a 26% increase in depression incidence for every one year increase in a child's age at entry to the study. Similar incidence rate ratios for depression prevalence were observed in the other condition groups: 1.23 (95% CI: 1.19-1.28) in the chronic condition group and 1.24 (95% CI: 1.19-1.29) in the no long-term condition group.

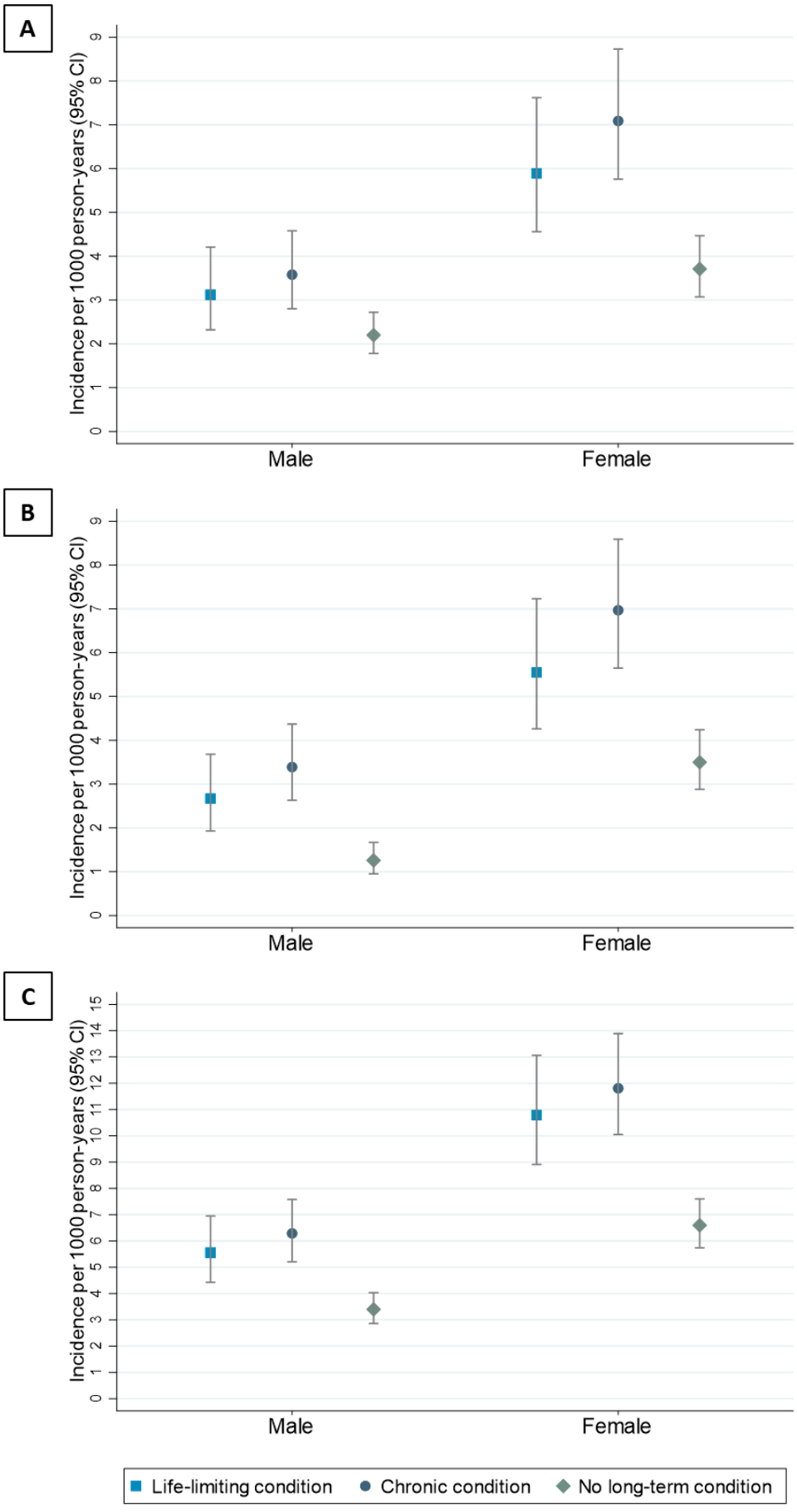

Figure 36. Crude incidence of A) anxiety, B) depression, C) 'anxiety and/or depression' per 1,000 person years with 95% CIs by sex, stratified by condition group

Table 40. Incidence of anxiety, depression and 'anxiety and/or depression' per 1,000 person-years, crude and adjusted incidence rate ratios by sex, stratified by condition group

	Life-limiting condition		Chronic condition		No long-term condition	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Anxiety						
Crude incidence per 1,000 person-years	3.12 (2.32-4.21)	5.89 (4.56-7.62)	3.58 (2.80-4.58)	7.09 (5.76-8.73)	2.20 (1.78-2.72)	3.71 (3.07-4.47)
Crude incidence rate ratio (95% CI)	1.00 (ref)	1.89 (1.27-2.80)**	1.00 (ref)	1.98 (1.44-2.74)**	1.00 (ref)	1.68 (1.27-2.22)**
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	1.87 (1.26-2.78)**	1.00 (ref)	1.73 (1.25-2.40)**	1.00 (ref)	1.55 (1.17-2.07)**
Depression						
Crude incidence per 1,000 person-years	2.67 (1.93-3.68)	5.55 (4.26-7.23)	3.39 (2.63-4.37)	6.97 (5.65-8.59)	1.26 (0.95-1.67)	3.50 (2.88-4.24)
Crude incidence rate ratio (95% CI)	1.00 (ref)	2.08 (1.37-3.16)**	1.00 (ref)	2.05 (1.48-2.85)**	1.00 (ref)	2.77 (1.97-3.89)**
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	2.09 (1.37-3.17)**	1.00 (ref)	1.81 (1.30-2.52)**	1.00 (ref)	2.60 (1.84-3.67)**
Anxiety and/or Depression						
Crude incidence per 1,000 person-years	5.55 (4.43-6.95)	10.79 (8.91-13.06)	6.29 (5.21-7.58)	11.81 (10.05-13.89)	3.40 (2.86-4.03)	6.60 (5.74-7.60)
Crude incidence rate ratio (95% CI)	1.00 (ref)	1.94 (1.45-2.61)**	1.00 (ref)	1.88 (1.47-2.41)**	1.00 (ref)	1.94 (1.56-2.42)**
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	1.94 (1.45-2.61)**	1.00 (ref)	1.69 (1.32-2.17)**	1.00 (ref)	1.80 (1.44-2.26)**

Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored (^) to prevent censored cells being determined by differencing
*$p \leq 0.05$ **$p \leq 0.01$ **NA:** Not applicable
Crude IRR: no adjustment (model uses covariate of interest as independent variable)
Adjusted IRR: adjusted for age, ethnicity, deprivation status, annual GP visits and maternal mental health conditions

Table 41. Crude and adjusted incidence rate ratios for age, stratified by condition group

	Life-limiting condition	Chronic condition	No long-term condition
Anxiety			
Crude incidence rate ratio (95% CI)	1.14 (1.08-1.19)**	1.14 (1.09-1.18)**	1.12 (1.08-1.17)**
Adjusted incidence rate ratio (95% CI)	1.12 (1.07-1.18)**	1.12 (1.08-1.17)**	1.12 (1.08-1.16)**
Depression			
Crude incidence rate ratio (95% CI)	1.28 (1.21-1.34)**	1.26 (1.21-1.31)**	1.26 (1.21-1.31)**
Adjusted incidence rate ratio (95% CI)	1.26 (1.20-1.33)**	1.23 (1.19-1.28)**	1.24 (1.19-1.29)**
Anxiety and/or depression			
Crude incidence rate ratio (95% CI)	1.19 (1.15-1.24)**	1.19 (1.15-1.22)**	1.17 (1.14-1.21)**
Adjusted incidence rate ratio (95% CI)	1.18 (1.14-1.23)**	1.17 (1.13-1.20)**	1.16 (1.13-1.20)**

Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored (^) to prevent censored cells being determined by differencing
*$p \leq 0.05$ **$p \leq 0.01$ **NA:** Not applicable
Crude IRR: no adjustment (model uses covariate of interest as independent variable)
Adjusted IRR: adjusted for sex, ethnicity, deprivation status, annual GP visits and maternal mental health conditions

Ethnicity

In all three condition groups, the crude incidence of anxiety, depression and 'anxiety and/or depression' was higher among children and young people from a White ethnic origin compared to those from the Other ethnic group (Figure 37, Tables 42-44). Additionally, in all condition groups the confidence intervals for the incidence estimates were wider in the Other ethnic group compared to the White group, showing more variability in incidence among children and young people from the Other ethnic group. However, the differences in incidence between the White and Other ethnic group were only statistically significant in the adjusted models for depression incidence in the no long-term condition group (IRR = 0.31, 95% CI: 0.10-0.98) and for 'anxiety and/or depression' in the chronic condition group (IRR = 0.40, 95% CI: 0.21-0.75). In both of these models, in addition to the model for 'anxiety and/or depression' in the no long-term condition group, the incidence of depression or 'anxiety and/or depression' was also significantly lower among children and young people with missing ethnicity data compared to children and young people from the White ethnic group.

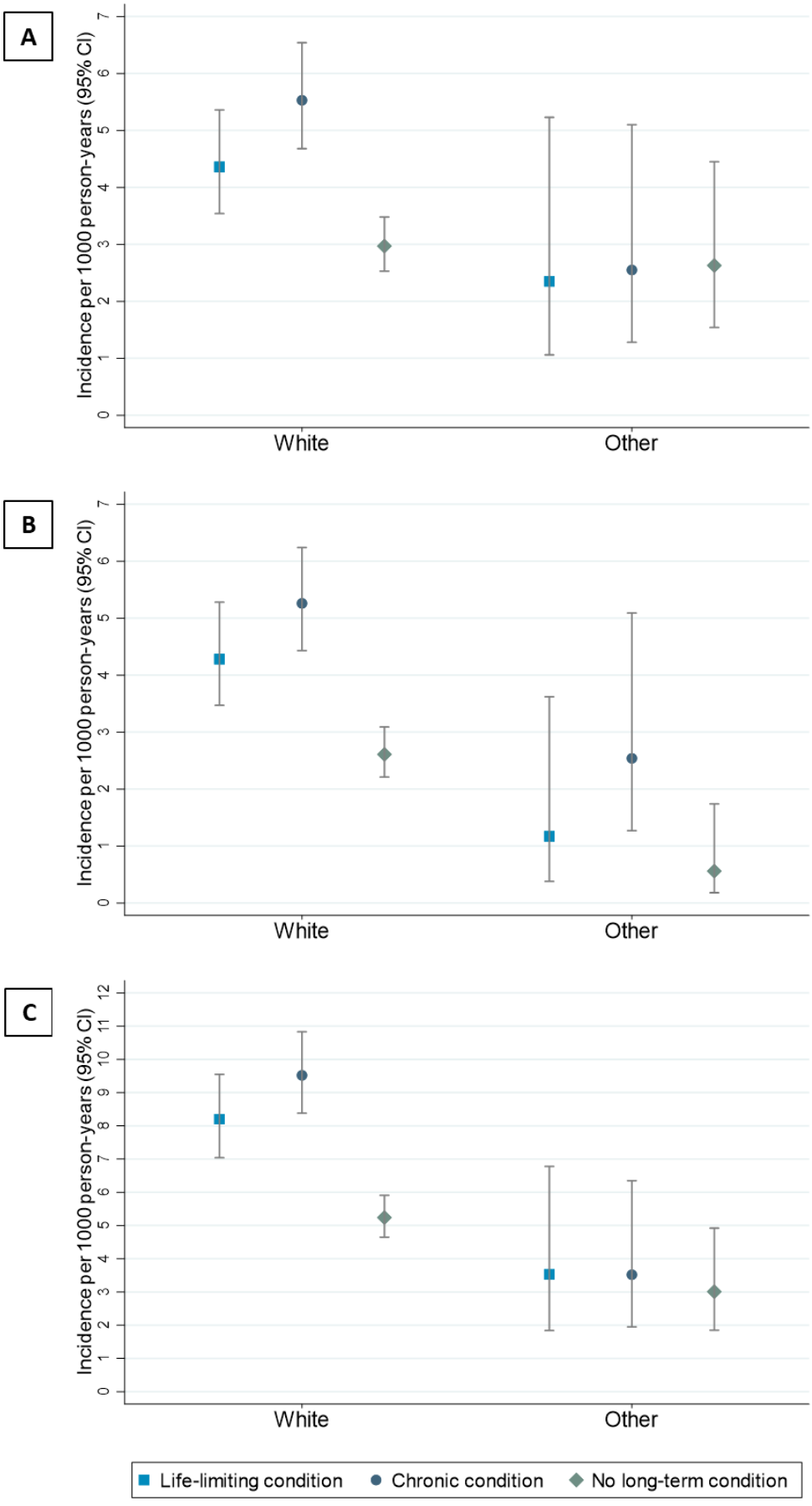

Figure 37. Crude incidence of A) anxiety, B) depression, C) 'anxiety and/or depression' per 1,000 person years with 95% CIs by ethnicity, stratified by condition group

Table 42. Incidence of anxiety, depression and 'anxiety and/or depression' per 1,000 person-years, crude and adjusted incidence rate ratios by ethnicity in the life-limiting condition group

	Ethnicity		
	White	**Other**	**Missing**
Anxiety			
Crude incidence per 1,000 person-years	4.36 (3.54-5.36)	2.35 (1.06-5.23)	9.42 (4.23-20.96)
Crude incidence rate ratio (95% CI)	1.00 (ref)	0.54 (0.24-1.23)	2.16 (0.95-4.94)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	0.67 (0.29-1.56)	2.40 (1.04-5.53)
Depression			
Crude incidence per 1,000 person-years	4.28 (3.47-5.28)	1.17 (0.38-3.62)	1.54 (0.22-10.91)
Crude incidence rate ratio (95% CI)	1.00 (ref)	0.27 (0.09-0.86)*	0.36 (0.05-2.58)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	0.36 (0.11-1.14)	0.38 (0.05-2.73)
Anxiety and/or Depression			
Crude incidence per 1,000 person-years	8.20 (7.04-9.55)	3.53 (1.84-6.78)	9.42 (4.23-20.97)
Crude incidence rate ratio (95% CI)	1.00 (ref)	0.43 (0.22-0.84)*	1.15 (0.51-2.59)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	0.53 (0.27-1.05)	1.24 (0.55-2.82)

Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored (^) to prevent censored cells being determined by differencing
*$p \leq 0.05$ **$p \leq 0.01$ **NA:** Not applicable
Crude IRR: no adjustment (model uses covariate of interest as independent variable)
Adjusted IRR: adjusted for sex, age, deprivation status, annual GP visits and maternal mental health conditions

Table 43. Incidence of anxiety, depression and 'anxiety and/or depression' per 1,000 person-years, crude and adjusted incidence rate ratios by ethnicity in the chronic condition group

	Ethnicity		
	White	**Other**	**Missing**
Anxiety			
Crude incidence per 1,000 person-years	5.53 (4.68-6.54)	2.55 (1.28-5.10)	3.10 (1.48-6.49)
Crude incidence rate ratio (95% CI)	1.00 (ref)	0.46 (0.23-0.94)*	0.56 (0.26-1.20)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	0.49 (0.24-1.03)	0.53 (0.25-1.14)
Depression			
Crude incidence per 1,000 person-years	5.26 (4.43-6.24)	2.54 (1.27-5.09)	3.97 (2.07-7.63)
Crude incidence rate ratio (95% CI)	1.00 (ref)	0.48 (0.24-0.99)	0.76 (0.38-1.48)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	0.63 (0.30-1.30)	0.67 (0.34-1.32)
Anxiety and/or Depression			
Crude incidence per 1,000 person-years	9.52 (8.38-10.83)	3.52 (1.95-6.35)	5.35 (3.04-9.42)
Crude incidence rate ratio (95% CI)	1.00 (ref)	0.37 (0.20-0.68)**	0.56 (0.31-1.00)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	0.40 (0.21-0.75)**	0.54 (0.30-0.97)*

Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored (^) to prevent censored cells being determined by differencing
*$p \leq 0.05$ **$p \leq 0.01$ **NA:** Not applicable
Crude IRR: no adjustment (model uses covariate of interest as independent variable)
Adjusted IRR: adjusted for sex, age, deprivation status, annual GP visits and maternal mental health conditions

Table 44. Incidence of anxiety, depression and 'anxiety and/or depression' per 1,000 person-years, crude and adjusted incidence rate ratios by ethnicity in the no long-term condition group

	Ethnicity		
	White	**Other**	**Missing**
Anxiety			
Crude incidence per 1,000 person-years	2.97 (2.53-3.48)	2.63 (1.56-4.45)	2.44 (1.69-3.54)
Crude incidence rate ratio (95% CI)	1.00 (ref)	0.89 (0.51-1.53)	0.82 (0.55-1.23)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	1.01 (0.58-1.76)	0.83 (0.55-1.25)
Depression			
Crude incidence per 1,000 person-years	2.61 (2.21-3.09)	0.56 (0.18-1.74)	1.30 (0.78-2.16)
Crude incidence rate ratio (95% CI)	1.00 (ref)	0.22 (0.07-0.68)**	0.50 (0.29-0.85)*
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	0.31 (0.10-0.98)*	0.47 (0.27-0.80)**
Anxiety and/or Depression			
Crude incidence per 1,000 person-years	5.24 (4.65-5.91)	3.01 (1.85-4.92)	3.58 (2.64-4.87)
Crude incidence rate ratio (95% CI)	1.00 (ref)	0.57 (0.35-0.95)*	0.68 (0.49-0.95)*
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	0.71 (0.42-1.18)	0.68 (0.49-0.94)*

Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored (^) to prevent censored cells being determined by differencing
*$p \leq 0.05$ **$p \leq 0.01$ **NA:** Not applicable
Crude IRR: no adjustment (model uses covariate of interest as independent variable)
Adjusted IRR: adjusted for sex, age, deprivation status, annual GP visits and maternal mental health conditions

Deprivation Status

No clear trend was observed for the difference in the incidence of anxiety, depression or 'anxiety and/or depression' by deprivation status (Figure 38, Tables 45-47). For example, in the life-limiting condition and chronic condition groups, the incidence of anxiety was highest among children and young people from the least deprived category. Conversely, the incidence of depression in the life-limiting condition and chronic condition groups was highest among children and young people from the most deprived category. The incidence of 'anxiety and/or depression' was also highest among children and young people from the most deprived category in the life-limiting condition group. However, none of the differences in the incidence of anxiety, depression or 'anxiety and/or depression' by deprivation status were significant in the crude or adjusted models for any of the condition groups.

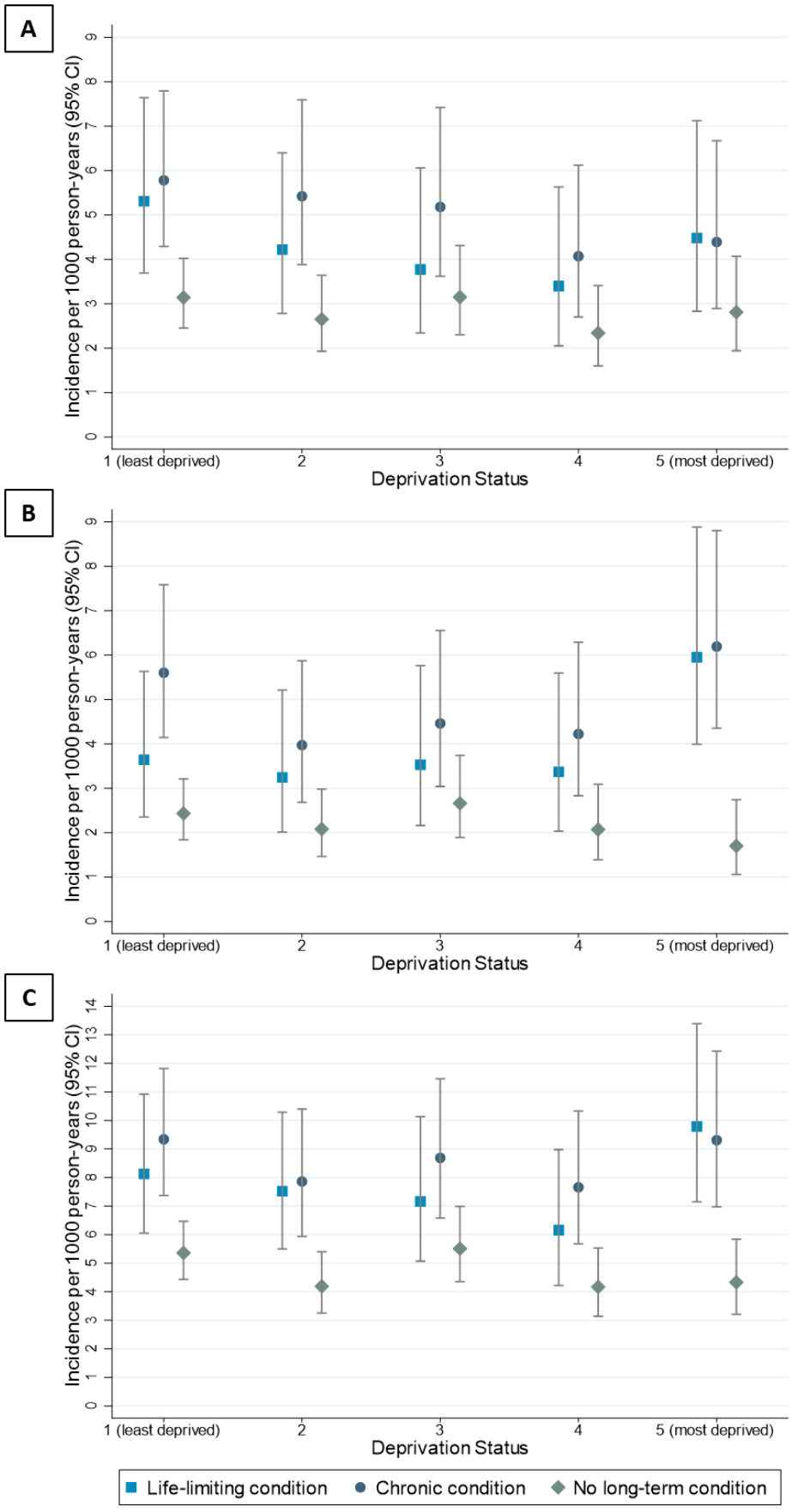

Figure 38. Crude incidence of A) anxiety, B) depression, C) 'anxiety and/or depression' per 1,000 person years with 95% CIs by deprivation status, stratified by condition group

Table 45. Incidence of anxiety, depression and 'anxiety and/or depression' per 1,000 person-years, crude and adjusted incidence rate ratios by deprivation status in the life-limiting condition group

	Deprivation Status				
	1 (least deprived)	**2**	**3**	**4**	**5 (most deprived)**
Anxiety					
Crude incidence per 1,000 person-years	5.31 (3.69-7.64)	4.22 (2.78-6.40)	3.77 (2.34-6.06)	3.40 (2.05-5.63)	4.48 (2.83-7.12)
Crude incidence rate ratio (95% CI)	1.00 (ref)	0.79 (0.46-1.38)	0.71 (0.39-1.29)	0.64 (0.34-1.19)	0.84 (0.47-1.52)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	0.75 (0.43-1.30)	0.69 (0.38-1.26)	0.62 (0.33-1.15)	0.82 (0.45-1.49)
Depression					
Crude incidence per 1,000 person-years	3.64 (2.35-5.63)	3.24 (2.01-5.21)	3.53 (2.16-5.76)	3.37 (2.03-5.59)	5.95 (3.99-8.88)
Crude incidence rate ratio (95% CI)	1.00 (ref)	0.89 (0.47-1.70)	0.97 (0.50-1.87)	0.93 (0.47-1.81)	1.64 (0.90-2.96)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	0.83 (0.43-1.58)	0.91 (0.47-1.77)	0.84 (0.43-1.64)	1.59 (0.88-2.90)
Anxiety and/or Depression					
Crude incidence per 1,000 person-years	8.13 (6.05-10.92)	7.52 (5.50-10.29)	7.16 (5.07-10.13)	6.16 (4.22-8.98)	9.79 (7.15-13.39)
Crude incidence rate ratio (95% CI)	1.00 (ref)	0.93 (0.60-1.42)	0.88 (0.56-1.39)	0.76 (0.47-1.22)	1.20 (0.78-1.85)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	0.87 (0.56-1.34)	0.85 (0.54-1.35)	0.73 (0.45-1.18)	1.18 (0.76-1.83)

Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored (^) to prevent censored cells being determined by differencing
*$p \leq 0.05$ **$p \leq 0.01$ **NA:** Not applicable
Crude IRR: no adjustment (model uses covariate of interest as independent variable)
Adjusted IRR: adjusted for sex, age, ethnicity, annual GP visits and maternal mental health conditions

Table 46. Incidence of anxiety, depression and 'anxiety and/or depression' per 1,000 person-years, crude and adjusted incidence rate ratios by deprivation status in the chronic condition group

	Deprivation Status				
	1 (least deprived)	**2**	**3**	**4**	**5 (most deprived)**
Anxiety					
Crude incidence per 1,000 person-years	5.78 (4.29-7.79)	5.42 (3.88-7.59)	5.18 (3.62-7.42)	4.07 (2.70-6.12)	4.39 (2.89-6.67)
Crude incidence rate ratio (95% CI)	1.00 (ref)	0.94 (0.60-1.47)	0.90 (0.56-1.43)	0.70 (0.42-1.17)	0.76 (0.45-1.27)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	0.86 (0.55-1.36)	0.86 (0.54-1.38)	0.72 (0.43-1.20)	0.64 (0.37-1.10)
Depression					
Incidence per 1,000 person-years	5.60 (4.14-7.58)	3.97 (2.68-5.87)	4.46 (3.04-6.55)	4.22 (2.83-6.29)	6.19 (4.35-8.80)
Crude incidence rate ratio (95% CI)	1.00 (ref)	0.71 (0.43-1.16)	0.80 (0.49-1.30)	0.75 (0.46-1.24)	1.10 (0.69-1.76)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	0.68 (0.41-1.11)	0.76 (0.47-1.25)	0.77 (0.47-1.28)	1.08 (0.67-1.73)
Anxiety and/or Depression					
Incidence per 1,000 person-years	9.34 (7.37-11.82)	7.86 (5.94-10.40)	8.69 (6.58-11.46)	7.66 (5.68-10.33)	9.31 (6.97-12.43)
Crude incidence rate ratio (95% CI)	1.00 (ref)	0.84 (0.58-1.21)	0.93 (0.65-1.34)	0.82 (0.56-1.20)	1.00 (0.67-1.45)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	0.79 (0.55-1.14)	0.92 (0.64-1.32)	0.86 (0.59-1.26)	1.00 (0.69-1.46)

Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored (^) to prevent censored cells being determined by differencing
*$p \leq 0.05$ **$p \leq 0.01$ **NA:** Not applicable
Crude IRR: no adjustment (model uses covariate of interest as independent variable)
Adjusted IRR: adjusted for sex, age, ethnicity, annual GP visits and maternal mental health conditions

Table 47. Incidence of anxiety, depression and 'anxiety and/or depression' per 1,000 person-years, crude and adjusted incidence rate ratios by deprivation status in the no long-term condition group

	Deprivation Status				
	1 (least deprived)	**2**	**3**	**4**	**5 (most deprived)**
Anxiety					
Crude incidence per 1,000 person-years	3.14 (2.45-4.02)	2.65 (1.93-3.64)	3.15 (2.30-4.31)	2.34 (1.60-3.41)	2.81 (1.94-4.07)
Crude incidence rate ratio (95% CI)	1.00 (ref)	0.84 (0.56-1.26)	1.00 (0.67-1.50)	0.74 (0.47-1.17)	0.90 (0.57-1.40)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	0.81 (0.54-1.22)	0.91 (0.60-1.36)	0.70 (0.44-1.10)	0.86 (0.55-1.35)
Depression					
Crude incidence per 1,000 person-years	2.43 (1.84-3.21)	2.08 (1.46-2.98)	2.66 (1.89-3.74)	2.07 (1.39-3.09)	1.70 (1.06-2.74)
Crude incidence rate ratio (95% CI)	1.00 (ref)	0.86 (0.54-1.35)	1.09 (0.70-1.70)	0.85 (0.52-1.39)	0.70 (0.40-1.22)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	0.81 (0.51-1.27)	0.96 (0.62-1.50)	0.76 (0.47-1.24)	0.65 (0.37-1.13)
Anxiety and/or Depression					
Crude incidence per 1,000 person-years	5.36 (4.43-6.47)	4.19 (3.25-5.40)	5.51 (4.35-6.99)	4.17 (3.14-5.53)	4.33 (3.21-5.84)
Crude incidence rate ratio (95% CI)	1.00 (ref)	0.78 (0.57-1.07)	1.03 (0.76-1.39)	0.78 (0.55-1.09)	0.81 (0.57-1.15)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	0.74 (0.54-1.02)	0.92 (0.67-1.25)	0.72 (0.51-1.01)	0.77 (0.54-1.10)

Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored (^) to prevent censored cells being determined by differencing
*$p \leq 0.05$ **$p \leq 0.01$ **NA:** Not applicable
Crude IRR: no adjustment (model uses covariate of interest as independent variable)
Adjusted IRR: adjusted for sex, age, ethnicity, annual GP visits and maternal mental health conditions

Annual GP Visits

The frequency of GP visits was significantly associated with the incidence of anxiety, depression and 'anxiety and/or depression' in all condition groups (Table 48). The highest incidence rate ratios for all outcomes comparing GP visit frequency were observed in the no long-term condition group, which were 1.17 (95% CI: 1.14-1.20) for anxiety incidence, 1.15 (95% CI: 1.11-1.20) for depression incidence and 1.17 (95% CI: 1.15-1.19) for the incidence of 'anxiety and/or depression'.

Table 48. Crude and adjusted incidence rate ratios for annual GP visits, stratified by condition group

	Life-limiting condition	**Chronic condition**	**No long-term condition**
Anxiety			
Crude incidence rate ratio (95% CI)	1.06 (1.03-1.08)**	1.12 (1.11-1.14)**	1.18 (1.16-1.20)**
Adjusted incidence rate ratio (95% CI)	1.05 (1.02-1.08)**	1.13 (1.11-1.15)**	1.17 (1.14-1.20)**
Depression			
Crude incidence rate ratio (95% CI)	1.06 (1.05-1.07)**	1.11 (1.08-1.13)**	1.18 (1.15-1.21)**
Adjusted incidence rate ratio (95% CI)	1.06 (1.04-1.07)**	1.10 (1.06-1.13)**	1.15 (1.11-1.20)**
Anxiety and/or Depression			
Crude incidence rate ratio (95% CI)	1.06 (1.04-1.08)**	1.11 (1.10-1.13)**	1.18 (1.16-1.20)**
Adjusted incidence rate ratio (95% CI)	1.06 (1.04-1.08)**	1.12 (1.09-1.14)**	1.17 (1.15-1.19)**

Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored (^) to prevent censored cells being determined by differencing
*$p \leq 0.05$ **$p \leq 0.01$ **NA:** Not applicable
Crude IRR: no adjustment (model uses covariate of interest as independent variable)
Adjusted IRR: adjusted for sex, age, ethnicity, deprivation status and maternal mental health conditions

Maternal Mental Health Conditions

In all condition groups, the crude incidence of anxiety, depression and 'anxiety and/or depression' was higher among children and young people whose mothers had a common mental health disorder compared to children and young people whose mothers had no mental health conditions (Figure 39, Tables 49-51). This difference in incidence was significant in the majority of the adjusted models, with the largest difference in depression incidence observed in the no long-term condition group (IRR = 1.95, 95% CI: 1.41-2.71), indicating that the incidence of depression among children and young people whose mothers had a common mental health disorder was almost twice that found among children and young people whose mothers had no mental health condition.

The differences in the incidence of anxiety, depression and 'anxiety and/or depression' between children and young people whose mothers had a severe mental illness and children and young people whose mothers had no mental health conditions were not so consistent. For example, in the chronic condition and no long-term condition groups, anxiety incidence was higher among children and young people whose mothers had a severe mental illness compared to those whose mothers had no mental health condition. However, the reverse trend was observed in the life-limiting condition group. Importantly, all of the confidence intervals for the incidence of anxiety, depression and 'anxiety and/or depression' among children and young people whose mothers had a severe mental illness were very wide, showing a high degree of variability in incidence. In the life-limiting condition group there was a significantly higher incidence of depression among children and young people whose mothers had a severe mental illness compared to those whose mothers had no mental health conditions (IRR = 3.88, 95% CI: 1.51-9.95). This was the only significant difference in incidence by maternal severe mental illness observed in the adjusted models.

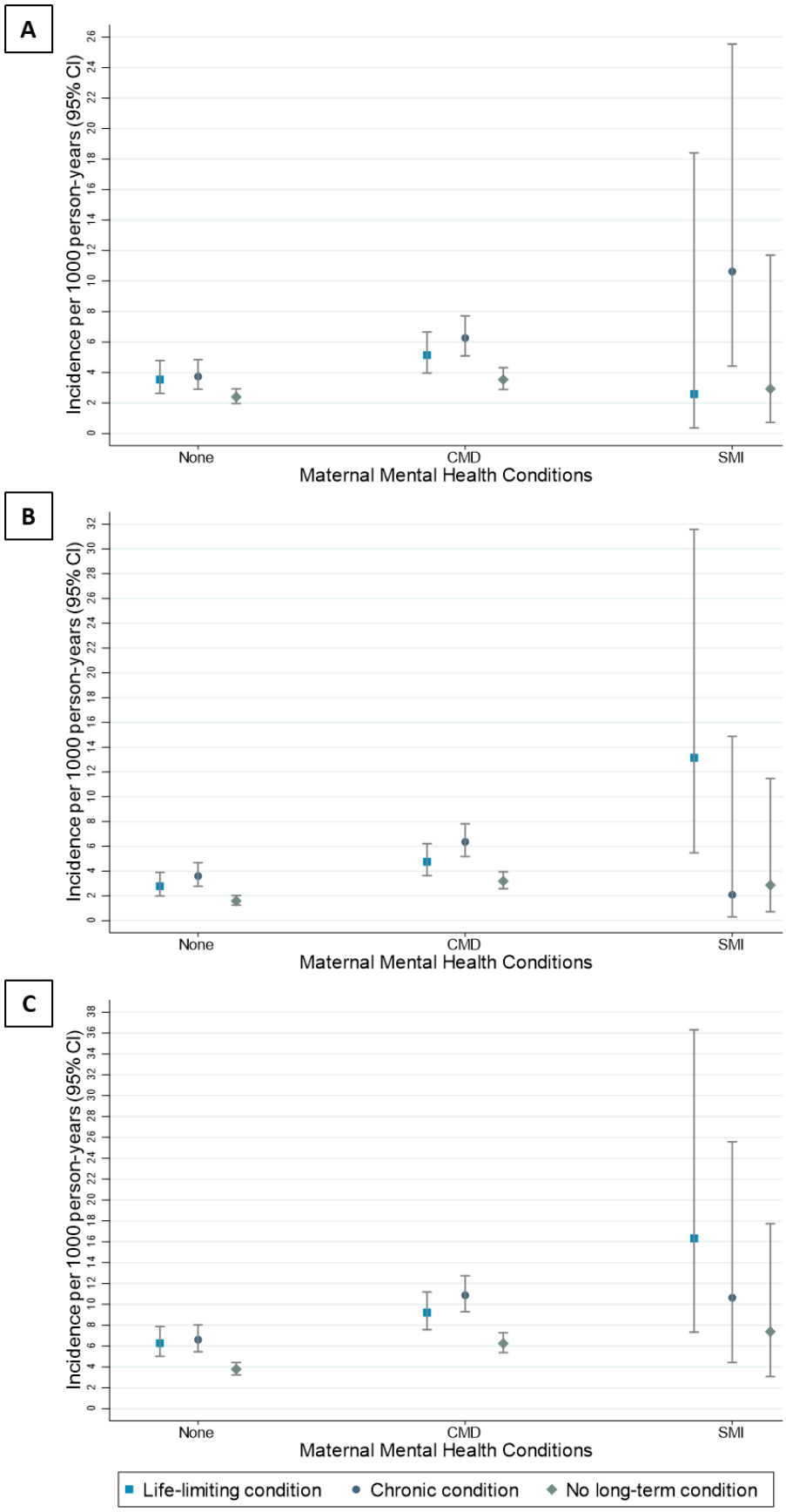

Figure 39. Crude incidence of A) anxiety, B) depression, C) 'anxiety and/or depression' per 1,000 person years with 95% CIs by exposure to maternal mental health conditions, stratified by condition group

CMD = common mental health disorder, SMI = severe mental illness

Table 49. Incidence of anxiety, depression and 'anxiety and/or depression' per 1,000 person-years, crude and adjusted incidence rate ratios by maternal mental health conditions in the life-limiting condition group

	Maternal Mental Health Conditions		
	None	**Common mental health disorder**	**Severe mental illness**
Anxiety			
Crude incidence per 1,000 person-years	3.54 (2.63-4.78)	5.14 (3.96-6.66)	2.59 (0.37-18.41)
Crude incidence rate ratio (95% CI)	1.00 (ref)	1.45 (0.98-2.16)	0.73 (0.10-5.32)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	1.43 (0.95-2.13)	0.63 (0.09-4.56)
Depression			
Incidence per 1,000 person-years	2.78 (1.99-3.89)	4.75 (3.63-6.21)	13.14 (5.47-31.57)
Crude incidence rate ratio (95% CI)	1.00 (ref)	1.71 (1.11-2.63)*	4.73 (1.85-12.08)**
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	1.47 (0.95-2.28)	3.88 (1.51-9.95)**
Anxiety and/or Depression			
Incidence per 1,000 person-years	6.20 (4.95-7.78)	9.11 (7.49-11.08)	16.31 (7.33-36.31)
Crude incidence rate ratio (95% CI)	1.00 (ref)	1.47 (1.09-1.98)*	2.63 (1.15-6.04)*
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	1.37 (1.01-1.86)*	2.20 (0.95-5.06)

Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored (^) to prevent censored cells being determined by differencing
*$p \leq 0.05$ **$p \leq 0.01$ **NA:** Not applicable
Crude IRR: no adjustment (model uses covariate of interest as independent variable)
Adjusted IRR: adjusted for sex, age, ethnicity, deprivation status and annual GP visits

Table 50. Incidence of anxiety, depression and 'anxiety and/or depression' per 1,000 person-years, crude and adjusted incidence rate ratios by maternal mental health conditions in the chronic condition group

	Maternal Mental Health Conditions		
	None	**Common mental health disorder**	**Severe mental illness**
Anxiety			
Crude incidence per 1,000 person-years	3.74 (2.90-4.84)	6.27 (5.09-7.72)	10.63 (4.42-25.54)
Crude incidence rate ratio (95% CI)	1.00 (ref)	1.67 (1.20-2.33)**	2.84 (1.14-7.08)*
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	1.59 (1.14-2.22)**	1.50 (0.54-4.22)
Depression			
Incidence per 1,000 person-years	3.60 (2.77-4.68)	6.36 (5.18-7.81)	2.09 (0.30-14.87)
Crude incidence rate ratio (95% CI)	1.00 (ref)	1.76 (1.26-2.46)**	0.58 (0.08-4.20)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	1.62 (1.16-2.27)**	0.57 (0.08-4.13)
Anxiety and/or Depression			
Incidence per 1,000 person-years	6.62 (5.45-8.04)	10.67 (9.09-12.52)	10.64 (4.43-25.57)
Crude incidence rate ratio (95% CI)	1.00 (ref)	1.61 (1.25-2.07)**	1.61 (0.66-3.95)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	1.47 (1.14-1.89)**	1.54 (0.63-3.79)

Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored (^) to prevent censored cells being determined by differencing
*$p \leq 0.05$ **$p \leq 0.01$ **NA:** Not applicable
Crude IRR: no adjustment (model uses covariate of interest as independent variable)
Adjusted IRR: adjusted for sex, age, ethnicity, deprivation status and annual GP visits

Table 51. Incidence of anxiety, depression and 'anxiety and/or depression' per 1,000 person-years, crude and adjusted incidence rate ratios by maternal mental health conditions in the no long-term condition group

	Maternal Mental Health Conditions		
	None	**Common mental health disorder**	**Severe mental illness**
Anxiety			
Crude incidence per 1,000 person-years	2.40 (1.97-2.93)	3.54 (2.89-4.32)	2.93 (0.73-11.70)
Crude incidence rate ratio (95% CI)	1.00 (ref)	1.47 (1.11-1.95)**	1.22 (0.30-4.94)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	1.41 (1.06-1.88)*	1.23 (0.30-4.98)
Depression			
Incidence per 1,000 person-years	1.59 (1.25-2.03)	3.19 (2.58-3.94)	2.87 (0.72-11.47)
Crude incidence rate ratio (95% CI)	1.00 (ref)	2.01 (1.45-2.77)**	1.81 (0.44-7.38)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	1.95 (1.41-2.71)**	1.85 (0.45-7.59)
Anxiety and/or Depression			
Incidence per 1,000 person-years	3.79 (3.23-4.43)	6.25 (5.37-7.27)	7.38 (3.07-17.73)
Crude incidence rate ratio (95% CI)	1.00 (ref)	1.65 (1.33-2.06)**	1.95 (0.80-4.75)
Adjusted incidence rate ratio (95% CI)	1.00 (ref)	1.58 (1.27-1.98)**	1.98 (0.81-4.84)

Cell values of 10 or less are censored ('≤10') and some cells with values greater than 10 are also censored (^) to prevent censored cells being determined by differencing

*$p \leq 0.05$ **$p \leq 0.01$ **NA:** Not applicable

Crude IRR: no adjustment (model uses covariate of interest as independent variable)

Adjusted IRR: adjusted for sex, age, ethnicity, deprivation status and annual GP visits

5.7 Summary of Findings

The incidence of anxiety, depression and 'anxiety and/or depression' was highest among children and young people with chronic conditions, followed by those in the life-limiting condition group, with the lowest incidence observed among children and young people with no long-term conditions. Although the incidence of all three outcomes were significantly higher in children and young people with chronic conditions compared to those with no long-term conditions in all statistical models, this was not the case for children and young people with life-limiting conditions. Instead, significant differences in the three outcomes were observed between the life-limiting and no long-term condition groups in the crude models and the models adjusted for sex, age at study entry, ethnicity, deprivation status and exposure to maternal mental health conditions, but not in the models which also adjusted for GP visit frequency. This reflects the fact that children and young people with life-limiting conditions in this study sample visited the GP more, on average, than children and young people with no long-term conditions, and therefore may have had more opportunities to mention any mental health concerns.

Across all condition groups, female sex, older age at study entry and more frequent GP visits were significantly associated with the incidence of anxiety, depression and 'anxiety and/or depression'. A higher incidence of these outcomes was also observed among children and young people from a White ethnic origin and those whose mothers had experienced a common mental health disorder. This trend was observed in all three condition groups. No clear trend was observed between the incidence of these outcomes and deprivation status in any of the condition groups. These findings suggest that the effects of the studied risk factors on the incidence of anxiety, depression or 'anxiety and/or depression' do not differ by condition group.

Chapter 6: Discussion

This chapter discusses the findings presented in this thesis, and their implications for practice and further research. As stated in Chapter 1, the two aims of this thesis were as follows:

1. To investigate the incidence and prevalence of anxiety and depression in children and young people with life-limiting conditions
2. To examine what factors are associated with the incidence and prevalence of anxiety and depression in children and young people with life-limiting conditions

These aims will be discussed in turn, describing the key findings of the research undertaken to achieve the aims, and integrating these findings into the wider literature.

6.1 Aim 1: To investigate the incidence and prevalence of anxiety and depression in children and young people with life-limiting conditions

As described in Chapter 2, a systematic review and meta-analysis was conducted to examine previous literature investigating the prevalence and incidence of anxiety and depression in children and young people with life-limiting conditions. This review included 36 studies, 19 of which reported anxiety prevalence and 35 reported depression prevalence. None reported anxiety or depression incidence. The findings from this meta-analysis indicated that the prevalence of anxiety and depression in children and young people with life-limiting conditions was substantially higher than that found in the general population of children and young people, as reported in recent epidemiological studies. As such, the pooled anxiety prevalence estimate of 19.1% observed in this analysis was more than double the prevalence of anxiety observed among the general population of children and young people in the UK or the US; 7.2% and 7.1%, respectively (Ghandour et al., 2019, NHS Digital, 2018b). Furthermore, the pooled prevalence of depression found in this meta-analysis, 13.8%, was more than four times the prevalence of depression observed in the general population of children and young people in the US (3.2%), and over six times the prevalence found among children and young people in the UK (2.1%) (Ghandour et al., 2019, NHS Digital, 2018b).

Sub-group analysis and meta-regression found that the prevalence of anxiety and depression varied by certain factors, one of which being the diagnostic group. Namely, the highest pooled prevalence of anxiety (29.4%) was found in children and young people with thalassemia, while the lowest pooled prevalence of anxiety (8.7%) was found in children and young people with neurological conditions. Similarly, the lowest pooled prevalence of depression (7.0%) was found in children and young people with neurological conditions, while the highest pooled prevalence of depression (24.2%) was found among children and young people with HIV. Results from the meta-regression analysis showed a significant positive association between age and depression prevalence, reflecting the findings of epidemiological studies in the general population of children and young people in the UK (NHS Digital, 2018a). However, this trend was not found for anxiety prevalence. In addition, sex was not significantly associated with anxiety or depression prevalence. However, many of the studies included in this review could not be included in the meta-regression models due to missing age or sex data, and therefore findings from the models should be interpreted with caution. Prevalence also varied by the type of assessment tool used; anxiety prevalence was higher in studies which used diagnostic interviews, whereas depression prevalence was higher in studies which used self-/parent-report questionnaires. Similar findings have been reported in previous systematic reviews of anxiety and depression prevalence in children and young people with chronic conditions (Palmer et al., 2013, Van Steensel, Bögels and Perrin, 2011). The current review represents the first systematic review of anxiety or depression prevalence or incidence among children and young people with life-limiting conditions, and therefore provides valuable information regarding the epidemiology of these mental health conditions across children and young people with various life-limiting conditions.

No previous studies had assessed the **incidence** of anxiety or depression in children and young people with life-limiting conditions. Therefore, it could not be assumed that the diagnosis of the life-limiting condition occurred before the development of anxiety or depression in the reviewed studies. Consequently, a comparative cohort study was conducted using the CPRD and linked datasets in order to compare the incidence of anxiety and depression among children and young people from three different

condition groups: life-limiting conditions, chronic conditions and no long-term conditions (Chapters 4 & 5).

The cumulative incidence of anxiety, depression and 'anxiety and/or depression' was calculated by condition group in order to determine the proportion of children and young people in each condition group that had experienced these mental health conditions. The results from this analysis supported the results from the meta-analysis of anxiety and depression reported in this thesis, whereby children and young people with life-limiting conditions had a higher cumulative incidence of anxiety (1.84%, 95% CI: 1.50-2.24%), depression (1.67%, 95% CI: 1.35-2.05%) and 'anxiety and/or depression' (3.31%, 95% CI: 2.85-3.82%) compared to children and young people with no long-term conditions (anxiety – 1.50%, 95% CI: 1.30-1.72%; depression – 1.17%, 95% CI: 0.99-1.37%; anxiety and/or depression – 2.50%, 95% CI: 2.24-2.79%). Although cumulative incidence estimates are not directly comparable to prevalence estimates due to differences in their calculation, it is worth noting that the cumulative incidence of each of the three outcomes was lower than both the pooled prevalence estimates from the meta-analysis and prevalence figures reported for the general population of children and young people in the UK and the US (Ghandour et al., 2019, NHS Digital, 2018b). Several factors could be contributing to this difference. Most notably, the cumulative incidence figures reported in this thesis represent the cumulative incidence of children and young people who present to primary care with anxiety or depression. Therefore, this is likely to be an under representation of the cumulative incidence of anxiety and depression among children and young people in the wider population.

A similar trend was observed for the crude incidence rate of anxiety, which was found to be 4.27 cases per 1,000 person-years (95% CI: 3.52-5.20) in the life-limiting condition group, 5.04 cases per 1,000 person-years (95% CI: 4.30-5.91) in the chronic condition group, and 2.85 cases per 1,000 person-years (95% CI: 2.48-3.28) in the no long-term condition group. The crude incidence of depression was slightly lower, but followed the same trend: 3.87 cases per 1,000 person-years (95% CI: 3.15-4.75) in the life-limiting condition group, 4.88 cases per 1,000 person-years (95% CI: 4.15-5.73) in the chronic condition group, and 2.23 cases per 1,000 person-years (95% CI: 1.90-2.61) in the no long-term condition group.

Previous studies using primary care data to examine the incidence of anxiety or depression among children and young people analysed the incidence of diagnoses, symptoms and prescriptions separately (John et al., 2015, John et al., 2016b, Wijlaars, Nazareth and Petersen, 2012). This was not done in the current study as the primary aim was to compare the incidence across condition groups rather than to assess trends in the incidence of different indicators of anxiety or depression. Comparing the findings of the current study to those found previously is therefore challenging as previous studies did not generate an overall incidence estimate of anxiety and depression, and the calculation of one from the separate diagnostic, symptom and prescription incidence figures could involve double counting individuals. Nevertheless, it is still valuable to compare the range of values reported previously to those found in the current study in order to identify any marked variations in incidence.

One study of anxiety incidence in children and young people using primary care databases has previously been conducted, which reported the following incidence rates in 2011: 2.37 cases per 1,000 person-years for anxiety diagnoses, 1.50 cases per 1,000 person-years for anxiety symptoms, and 1.97 per 1,000 cases per 1,000 person-years for anxiolytic/hypnotic prescriptions (John et al., 2015). A similar study of depression incidence in children and young people found depression incidence rates in 2013 to be 1.91 cases per 1,000 person-years for new diagnoses, 0.36 cases per 1,000 person-years for recurrent diagnoses, 6.59 cases per 1,000 person-years for depressive symptoms and 7.69 cases per 1,000 person-years for antidepressant prescriptions (John et al., 2016b). Another study of depression incidence in children and young people in 2009 found an incidence of approximately 2.2 cases per 1,000 person-years for depression diagnoses, 4.7 cases per 1,000 person-years for depressive symptoms, and approximately 3.7 cases per 1,000 person-years for antidepressant prescriptions in 2009 (Wijlaars, Nazareth and Petersen, 2012).

Although the anxiety incidence estimates found previously do appear to be in a similar range to those generated in the current study, greater variation is apparent between the depression incidence estimates found in the studies, including the current study. Whilst this variation may reflect true differences in the incidence of anxiety and depression, methodological differences between the studies may also account for some of the variation. First, several antidepressants included in the previous studies of

depression incidence were excluded from the current study due to the multiple clinical indications for which these medications are used, especially among children and young people with life-limiting conditions (National Institute for Health and Care Excellence (NICE), 2020a, b). One of the antidepressants excluded from the current study, amitriptyline, was found to be commonly prescribed to children and young people for depression in the dataset used by Wijlaars and colleagues (Wijlaars, Nazareth and Petersen, 2012). Therefore, the exclusion of these drugs may have contributed to the lower incidence of depression found in the current study compared to the previous studies. Second, the study conducted by Wijlaars and colleagues classified some anxiety symptoms such as 'Anxiousness' and 'Nerves' as symptoms of depression in their analysis. These codes were not used as depression codes in the current study as it was presumed that they were more likely to relate to a case of anxiety and therefore were included as anxiety codes instead.

As expected, the incidence of anxiety, depression and 'anxiety and/or depression' was higher among children and young people with life-limiting conditions compared to those with no long-term conditions, aligning with the findings for anxiety and depression prevalence reported in the meta-analysis. These differences in incidence were statistically significant in both the crude models and the adjusted models which did not control for GP visit frequency. However, the additional adjustment for GP visit frequency meant that the incidence of anxiety, depression or 'anxiety and/or depression' was no longer significantly higher in the life-limiting condition group compared to the no long-term condition group. This could be due to the fact that children and young people with life-limiting conditions visited the GP more frequently, on average, than those with chronic conditions or no long-term conditions, as shown by the findings of this study. More frequent GP visits could provide more opportunities for them and/or their parents to mention any symptoms of anxiety or depression that they might be experiencing to the GP. Indeed, GP visit frequency has been found to be strongly associated with the detection of mental health conditions, such as anxiety and depression, in previous literature (Koning et al., 2019, Richardson et al., 2010, Walters et al., 2011). However, it cannot be assumed that all GP visits do truly present opportunities to discuss anxiety and depression, especially given the complex treatment regimens associated with many life-limiting condition diagnoses, which is

likely to be the focus of many of the GP visits attended by these children and young people.

Additionally, GP visit frequency is a potential mediator of the relationship between condition group and anxiety/depression, as children and young people with life-limiting or chronic conditions are likely to visit the GP more frequently than those with no long-term conditions, and, as previously stated, an increase in the frequency of GP visits provides more opportunities for the detection of depression (Jarvis et al., 2020, Koning et al., 2019, Richardson et al., 2010, Walters et al., 2011). Therefore, the results generated from the models adjusting for GP visit frequency should be treated with caution. As maternal mental health is another potential mediator in the relationship between condition group and anxiety/depression (Ferro and Boyle, 2015), the most robust models conducted in this analysis are those which did not adjust for either GP visit frequency or maternal mental health, the conclusions of which suggested that the incidence of anxiety, depression and 'anxiety and/or depression' was significantly higher among children and young people with life-limiting or chronic conditions compared to those with no long-term conditions.

Given the additional challenges that may be faced by children and young people with life-limiting conditions compared to those with chronic conditions, such as the fear of death, it could be expected that children and young people with life-limiting conditions would have a higher incidence of anxiety and depression. However, the incidence of these mental health conditions was lower among children and young people with life-limiting conditions compared to those with chronic conditions. This could be due to the potential provision of psychological support within the medical teams treating children and young people with life-limiting conditions, however evidence suggests that these types of services are limited (Garralda and Slaveska-Hollis, 2016). Another potential contributing factor to the lower incidence of anxiety and depression in children and young people with life-limiting conditions may be the high prevalence of intellectual disability in this group, especially among children and young people with neurological conditions, such as paediatric multiple sclerosis, Duchenne muscular dystrophy, and other neuromuscular disorders (Astrea et al., 2016, Ekmekci, 2017, Feudtner et al., 2011, Rae and O'Malley, 2016). As discussed in Chapter 1, mild intellectual disability has been found to be associated with an increased prevalence of

mental health conditions, such as anxiety and depression (Einfeld, Ellis and Emerson, 2011). However, findings from a systematic review report that the observed prevalence of depression was significantly lower among children and young people with moderate or profound intellectual disability compared to those with borderline intellectual disability, likely due to limited communicative abilities and the inappropriateness of standard diagnostic criteria (Maiano et al., 2018). Similarly, a study of the risk of anxiety and depression among adults with cerebral palsy found a lower incidence of these mental health conditions among adults with intellectual disability compared to those without (Smith et al., 2019). It has been suggested that this could be due to 'diagnostic overshadowing', whereby a clinician overlooks symptoms of anxiety or depression, instead interpreting them as symptoms of the individual's intellectual disability (Mason and Scior, 2004). It is possible, therefore, that underdetection of anxiety or depression would have occurred among children and young people with intellectual disabilities in this study. As a greater proportion of these individuals would have been in the life-limiting condition group, this could explain why the incidence of anxiety and depression was lower in this group compared to the chronic condition group.

Findings from both the meta-analysis and the cohort study suggest that children and young people with life-limiting conditions may have a higher prevalence and incidence of anxiety and depression compared to children and young people with no long-term conditions. This information is important as it is the first time that anxiety and depression have been studied among children and young people with life-limiting conditions as a whole population. However, further research is needed to examine the validity of the diagnosis of these mental health conditions among children and young people with life-limiting conditions.

6.2 Aim 2: To examine what factors are associated with the incidence and prevalence of anxiety and depression in children and young people with life-limiting conditions

As described in Chapter 3, a systematic review and best evidence synthesis was conducted to explore which risk or protective factors have been investigated in studies assessing anxiety and depression among children and young people with life-limiting conditions. This review included a total of 22 studies, 16 of which assessed anxiety symptoms and 21 assessed depressive symptoms.

Findings from this review indicated that there was conflicting evidence for associations between anxiety symptoms and age, sex, and socioeconomic status. Although conflicting evidence was found for associations between depressive symptoms and both age and socioeconomic status, no evidence was found for an association between depressive symptoms and sex. This differs from results found in both the general population and among children and young people with chronic conditions, which report a strong association between anxiety/depression and female sex, age and socioeconomic status (Adams, Chien and Wisk, 2019, Lemstra et al., 2008, NHS Digital, 2018a, Reiss, 2013) . Whilst no evidence was found for associations between disease severity and anxiety/depressive symptoms, limited evidence was found for the protective roles of optimism and acceptance against symptoms of anxiety or depression, respectively. This suggests that these psychological factors may have more of an impact on a child or young person's mental health than the objective severity of their life-limiting condition. This review was the first systematic review to investigate factors associated with anxiety and depression in children and young people with life-limiting conditions, and therefore provides the first opportunity for a comprehensive understanding of the previous research investigating risk and protective factors for these mental health conditions across children and young people with different life-limiting conditions.

However, the results of the best evidence synthesis need to be interpreted with caution given the small sample sizes of many of the included studies, which could have meant that such studies were underpowered to detect existing associations. In addition, only a small number of life-limiting conditions were examined in these studies, and therefore these findings cannot be generalised to the whole population of children and young people with life-limiting conditions. Moreover, the vast majority of the included studies used cross-sectional analysis. Therefore, it was not known whether the children and young people included in these studies were diagnosed with their life-limiting condition before or after the development of anxiety/depressive symptoms. In addition, the temporality of the associations between the risk/protective factors and anxiety/depressive symptoms could not be assessed. From conducting the systematic review, it was also evident that other factors known to affect the risk of anxiety or depression in children and young people in the general population, such as

ethnicity and maternal mental health conditions, had not been widely studied among children and young people with life-limiting conditions (Goodman et al., 2011, NHS Digital, 2018a).

Therefore, a large, longitudinal cohort study was needed in order to comprehensively explore the associations between these factors and anxiety and depression incidence in children and young people with life-limiting conditions. As described in Chapters 4 and 5, this was conducted using CPRD and linked datasets. The comparative nature of the study also enabled the associations between these factors and anxiety/depression to be explored by condition status, namely the presence of life-limiting conditions, chronic conditions or no long-term conditions.

Results from this cohort study showed that both female sex and increasing age were significantly associated with the incidence of anxiety, depression and 'anxiety and/or depression' in children and young people with life-limiting conditions. Findings from the best evidence synthesis demonstrated conflicting evidence for associations between age and anxiety/depressive symptoms, and female sex and anxiety symptoms. If the best evidence synthesis was repeated and this cohort study was included, the conclusions of the best evidence synthesis would be altered; limited evidence would be found for female sex and anxiety symptoms, and age and depressive symptoms. This highlights the importance of this cohort study in the generation of evidence for the associations between these factors and anxiety/depression.

Female sex and increasing age were also found to increase the risk of anxiety, depression and 'anxiety and/or depression' in children and young people with chronic conditions and those with no long-term conditions in the current study, supporting the findings from previous literature (Adams, Chien and Wisk, 2019, John et al., 2015, John et al., 2016b). GP visit frequency prior to the diagnosis of anxiety/depression/'anxiety and/or depression' was also significantly associated with the incidence of the respective outcome, regardless of the condition group, supporting findings from previous literature (Koning et al., 2019, Richardson et al., 2010, Walters et al., 2011).

In all three condition groups, a higher incidence of anxiety, depression and 'anxiety and/or depression' was observed among children and young people from the White ethnic group, compared to children and young people from Other ethnic groups. The disparity in the identification of mental health conditions between White and minority ethnic groups has been frequently shown in previous literature and may be due to a number of cultural differences in the perception and expression of mental health-related symptoms, drawing into question the cultural appropriateness of Western diagnostic systems for non-Western ethnic groups (Adams, Chien and Wisk, 2019, Alegria, Vallas and Pumariega, 2010, Liang, Matheson and Douglas, 2016). Accordingly, Thomas et al. (2011) found that among children and young people reporting symptoms of depression, those from a White ethnic background were significantly more likely to have been diagnosed with and treated for depression, compared to those from a minority ethnic background. These factors offer some explanation for the non-stratified incidence analysis included in this thesis, showing the incidence of anxiety, depression and 'anxiety and/or depression' to be particularly low among children and young people from South Asian backgrounds (Bradby et al., 2007).

Previous studies assessing the incidence of anxiety or depression have reported a higher incidence among children and young people living in more deprived areas (John et al., 2016a, John et al., 2015, Wijlaars, Nazareth and Petersen, 2012). However, this trend was not found to be consistent in the current analysis; although the highest incidence of depression was observed in the most deprived children and young people with life-limiting or chronic conditions, the highest incidence of anxiety was recorded in the least deprived children and young people from these condition groups. The variability in geographical coverage of CPRD practices across England, however, with a higher proportion of practices in the South and London compared to the North does mean that the findings relating to deprivation status may not be generalisable to all areas of England (Herrett et al., 2015).

In all three condition groups, children and young people whose mothers had a diagnosed common mental health disorder had a higher incidence of anxiety, depression and 'anxiety and/or depression' than children and young people whose mothers had no mental health conditions. This was expected given the large body of literature reporting the strong association between maternal depression and child

mental health, including a large meta-analysis of 193 studies (Goodman et al., 2011). The proportion of children and young people in this study whose mothers were identified as having a common mental health disorder was high, especially in the life-limiting and chronic condition groups; 45.3% and 45.5% of children and young people, respectively. The proportion of children and young people in the no long-term condition group whose mothers had a common mental health disorder was lower (37.3%). Similarly high levels of parental anxiety and depression were found in a recent meta-analysis of 23 studies, which assessed the prevalence of these mental health conditions in parents of children and young people with chronic conditions compared to parents of healthy children and young people (Cohn et al., 2020).

Having a parent with a severe mental illness has also been found in previous literature to increase the risk of anxiety and depression among children and young people (Rasic et al., 2014). This was observed in the non-stratified analysis of the current study, with a higher incidence of anxiety, depression and 'anxiety and/or depression' among children and young people whose mothers had a severe mental illness compared to children and young people whose mothers had either a common mental health disorder or no mental health condition. This trend was less consistent in the stratified analysis, however, likely due to the small number of children and young people in each condition group whose mothers had a severe mental illness, and a subsequent lack of power to detect such associations. Therefore, caution must be taken when interpreting these findings and no firm conclusion should be made regarding the true presence or absence of such an association.

The findings of the current study indicate that, among the factors available for analysis in the dataset, the factors associated with the incidence of anxiety and depression in children and young people with life-limiting conditions do not differ from those found in children and young people with chronic conditions or no long-term conditions. Instead, the presence of a life-limiting condition may act as an additional risk factor for anxiety and depression, on top of the more general risk factors which can be present in the lives of many children and young people. Although the best evidence synthesis reported associations between coping style and anxiety/depressive symptoms, these associations could not be investigated in the cohort study, as data relating to these

variables were not available from CPRD or HES. Therefore, further studies are needed to investigate the impact of coping style on the incidence of anxiety and depression.

6.3 Strengths & Limitations

6.3.1 Systematic Reviews

Strengths

The two systematic reviews presented in this thesis have many strengths. Importantly, the search strategy used in both reviews was highly comprehensive, including a complete list of diagnoses categorised as life-limiting conditions. This allowed for the identification and inclusion of all relevant studies. Furthermore, the robust methods used to synthesise the evidence identified in these reviews - meta-analyses, subgroup analyses, meta-regression and best evidence synthesis - enabled an in-depth exploration of the epidemiology of anxiety and depression across children and young people with various life-limiting conditions.

Limitations

Limitations in the methodology of both reviews must, however, be noted. Only studies written in English and those conducted in OECD countries were eligible for inclusion in the reviews, which limited the generalisability of the findings to other global regions. In addition, both reviews were limited by the available primary studies. For example, the range of life-limiting conditions included in previous studies has been narrow. Namely, studies have only included children and young people with cancer, cystic fibrosis, HIV, thalassemia, chronic kidney disease, and specific neurological conditions. Therefore, the conclusions of the reviews may not be generalisable to the entire population of children and young people with life-limiting conditions. Furthermore, the number of studies which included children and young people with neurological conditions was small, perhaps due to the difficulty of assessing mental health conditions in these individuals, many of whom will experience co-occurring intellectual disability. As such, a full understanding of the prevalence of anxiety and depression in children and young people with neurological conditions, and the associated risk and protective factors, could not be gained.

The limitations of the included studies further hindered the generation of robust conclusions from the reviews. Many of the studies in both reviews had very small

sample sizes, potentially reducing the reliability of their findings and consequently the findings from both the meta-analysis and the best evidence synthesis. Importantly, none of the studies included in the meta-analysis and only a small number of studies included in the best evidence synthesis were longitudinal. Therefore, it could not be assumed that the diagnosis of a life-limiting condition preceded the development of anxiety or depression in these studies.

Weaknesses in the reporting of the included studies also limited the reviews' conclusions. Specifically, many of the studies did not report key study data, such as age and sex characteristics, meaning that these studies could not be included in the meta-regression models, which in turn reduced the power of such models. In addition, many of the studies included in the best evidence synthesis did not justify the rationale for investigating certain factors for associations with anxiety or depressive symptoms, which limited the conclusions that could be made about the role of such factors in the development of symptoms of anxiety or depression.

Additionally, the studies included in the reviews used a wide range of different assessment tools to measure anxiety and depression, many of which have not been validated for use in children and young people with life-limiting conditions, limiting the validity of the findings from these studies, and consequently the conclusions from the reviews (Thabrew et al., 2017).

6.3.2 Comparative Cohort Study

Strengths

The comparative cohort study presented in this thesis has a number of strengths. First, the use of data from the Clinical Practice Research Datalink (CPRD), a large and nationally representative dataset (Herrett et al., 2015), along with Hospital Episode Statistics (HES) data, both of which have high levels of medical coding accuracy, enabled a comprehensive comparative analysis of the incidence of anxiety and depression across the three condition groups (life-limiting conditions, chronic conditions, no long-term conditions) (Burns et al., 2012, Campbell et al., 2001, Herrett et al., 2010). Specifically, detailed health records for each child or young person, from both primary and secondary care, meant that the diagnosis of a life-limiting or chronic condition at any point since birth could be identified, and individuals could accurately

be categorised according to their condition group. In addition, the longitudinal nature of this data allowed for the temporality of the association between the diagnosis of a life-limiting condition and the development of anxiety or depression to be investigated for the first time.

The detailed nature of the data available within CPRD and HES, including various mental health indicators, allowed for the development of comprehensive algorithms to identify the presence of anxiety and depression, another major strength of this study. Indeed, a comparative analysis of different methods used to identify anxiety and depression among adolescents from electronic primary care data found that algorithms which included indicators relating to diagnoses, symptoms, and treatment had the highest sensitivity (Cornish et al., 2016). The importance of the inclusion of all of these code types in the algorithms was highlighted by the findings from the current study, which showed that 40.9% of depression codes would have been missed if identification relied on diagnostic codes alone. The additional inclusion of anxiety and depression indicators from secondary care data, which have not been used in previous studies of anxiety and depression incidence among children and young people, further improved the sensitivity of the analysis and the subsequent robustness of the study results (John et al., 2015, John et al., 2016b, Wijlaars, Nazareth and Petersen, 2012). Importantly, the specificity of the analysis and consequently the robustness of the findings was also maximised by the use of exclusion codes in the algorithms to prevent cases of conditions such as OCD, for which some antidepressants are prescribed, being falsely identified as cases of depression or anxiety.

Additionally, the linkage of the dataset to index of multiple deprivation (IMD) data and maternal data allowed for the comparative analysis of the effect of social deprivation and the presence of maternal mental health conditions on anxiety/depression incidence in children and young people from different condition groups.

Limitations

Certain limitations of the study did, however, reduce the robustness of the conclusions that could be drawn from the findings. First, the incidence of anxiety and depression generated from the datasets only represented those children and young people who presented to primary or secondary care with these conditions. As many factors can

influence the help-seeking behaviour of young people or their parents for potential mental health conditions, the anxiety and depression incidence rates presented in this study are likely to be underestimates of the incidence in the community (Radez et al., 2020, Reardon et al., 2017). In addition, although the validity of medical codes in the data has been found to be high, not all children and young people with anxiety or depression will have received such codes (Burns et al., 2012, Campbell et al., 2001, Herrett et al., 2010). This can occur due to GPs being disinclined to code owing to, amongst other things, time constraints within primary care appointments, the perceived lack of benefit of coding to the patients themselves, and a reluctance to label mental health conditions due to the potential stigmatising nature of such labels (Cresswell et al., 2012, De Lusignan, 2005). In addition, GPs can face challenges when attempting to identify anxiety and depression among children and young people, including a perceived lack of mental health training and knowledge, and a lack of available tools necessary to diagnose these mental health conditions (O'Brien et al., 2016). In order to minimise the impact of this missed coding, the anxiety and depression identification algorithms used in the study utilised comprehensive code lists which included a wide range of different indicators for anxiety and depression, therefore not solely relying on diagnostic or symptom codes, which some GPs may be disinclined to use.

Another potential limitation of the study was the exclusion of a lot of the prescription data from the analysis of the outcomes; namely anxiolytics, hypnotics, and some antidepressants which can be prescribed for symptoms or conditions other than anxiety or depression. This could have resulted in underestimates of the true incidence of anxiety and depression. However, this was necessary as many of the indications for which these drugs are used, such as neuropathic pain and seizures, are far more likely to occur in children and young people with life-limiting conditions. Therefore, the inclusion of such drugs may have generated biased incidence estimates which were not comparable across the three condition groups.

The investigation of factors associated with anxiety and depression incidence was also limited by data availability. First, the stratified analysis, which was important in order to assess differences in the associations between factors and anxiety/depression incidence by condition group, resulted in the use of smaller group sizes. This may have

meant that the analysis was underpowered to detect existing associations between certain factors, such as maternal mental health conditions, and anxiety/depression incidence.

The classification of children and young people into condition groups (life-limiting conditions, chronic conditions, and no long-term conditions) was conducted using only diagnostic codes. However, the additional use of prescription codes may have improved the sensitivity of the classification procedure by identifying children and young people who have a prescription code for a condition, such as asthma, but have not had a relevant diagnostic code recorded. Previous research in children with asthma found that the prevalence of children with a diagnosis of asthma was over three times lower than the prevalence of children treated with asthmatic drugs (Mebrahtu, Feltbower and Parslow, 2015). Therefore, some studies have utilised case definition algorithms which incorporate prescription information in the identification of asthma (Granell et al., 2014, Mebrahtu, Feltbower and Parslow, 2016). However, this method could result in the overestimation of asthma as asthmatic medication is also prescribed for other conditions such as viral-induced wheeze, which is very common in young children (Al-Shamrani et al., 2019, Beigelman and Bacharier, 2014).

Additionally, the deprivation status variable used in the study was constructed from the linked index of multiple deprivation (IMD) data relating to the patients' last known home address. However, as this data is not at an individual level, instead being assigned to a neighbourhood as a whole, the findings could have been affected by 'ecological fallacy', whereby false inferences are made about the associations of individual-level variables based on associations found using aggregated data (Blakely and Woodward, 2000). Indeed, not every household within a specific geographical area will experience the same level of deprivation. However, as neighbourhood-level deprivation is an important risk factor for anxiety and depression among children and young people, the deprivation status variable may still be relevant for participants whose household socioeconomic status is at odds to that of the rest of the community (Crump et al., 2014).

Furthermore, due to small group sizes, many of the separate ethnicity categories needed to be combined, both in the non-stratified analysis, with the grouping of all

Black ethnicities, for example, and in the stratified analysis, with the inclusion of only two ethnicity categories: White and Other ethnic groups. Consequently, any differences in the incidence of anxiety and depression among children and young people from different minority ethnic groups, which are known to be present in the general population of children and young people, could not be identified (Ghandour et al., 2019, NHS Digital, 2018a).

In addition, the modifications made to the cohort in order to make it suitable for this study is likely to have disrupted the matching process used to create the original cohort. However, as age and sex were adjusted for in the analysis, any differences in the distributions of these variables resulting from these modifications will have been accounted for. The multiple outcomes assessed in the analysis also necessitated the generation of many models which increased the probability that some of the true null hypotheses will have been rejected (Farcomeni, 2008). Therefore, the findings from this analysis must be interpreted with caution.

As the data used for this study was obtained primarily for another study, the age range of children and young people in the cohort only extended to 18 years of age. This differs from the age range that was used in the systematic reviews (5 to 25 years). Therefore, further research should consider including young people over the age of 18 in order to assess the incidence of anxiety and depression in young adults with different conditions.

Finally, although the datasets used in this study allowed for the analysis of the associations between various important factors such as sex and social deprivation and the incidence of anxiety/depression, no data regarding potential psychological mediators, such as coping style, were available from CPRD or HES. As coping style was identified by the best evidence synthesis to be a potentially important protective factor for anxiety and depression in children and young people with life-limiting conditions, this is a key area for further research.

6.4 Implications for the Care and Support of Children and Young People with Life-Limiting Conditions

This thesis provides further evidence for the potential mental health consequences of living with a life-limiting or chronic condition during childhood and adolescence.

Therefore, the promotion of psychological wellbeing and prevention of mental health difficulties in this population is important. Additionally, the analysis described in this thesis indicates that certain groups of children and young people with life-limiting conditions may be at greater risk of experiencing anxiety and depression, which could have important implications for the targeting of mental health preventative efforts if these findings are supported by future studies.

Results from the best evidence synthesis (Chapter 3) highlight the potential importance of coping style as a protective factor against symptoms of anxiety and depression in children and young people with life-limiting conditions. As this is a modifiable factor, interventions can be designed to encourage the development of more adaptive coping styles. Indeed, a preventative intervention focusing on the development of adaptive coping styles was shown to be effective at improving psychosocial wellbeing in young people with chronic conditions (Douma et al., 2019). Additionally, factors such as a child's ability to participate in social or recreational activities and go to school have been found to mediate the association between chronic conditions and mental health conditions such as anxiety and depression (Adams, Chien and Wisk, 2019). This suggests that the provision of assistance and/or removal of barriers for children and young people to enable them to take part in such activities may be beneficial for their mental health.

It is also important that symptoms of mental health conditions can be rapidly identified in order for psychological support to be provided. One way to achieve this is by regular psychological screening; recommendations of which are highlighted in guidance for conditions such as cystic fibrosis, cancer, cerebral palsy, and duchenne muscular dystrophy (Birnkrant et al., 2018, National Institute for Health and Care Excellence (NICE), 2014a, 2017, 2018, Quittner, Saez-Flores and Barton, 2016). However, although annual psychological screening for children and young people with cystic fibrosis has been recommended by the European International Mental Health Guidelines Committee (IMHGC) in Cystic Fibrosis, an evaluation of the effectiveness of these guidelines two years after their publication found that screening had only been implemented in 50% of paediatric cystic fibrosis centres in Europe (Abbott et al., 2019). Time constraints of staff was reported to be one of the main barriers to the implementation of screening. A recent feasibility study evaluated a screening tool

which was designed to overcome this barrier in neurological clinics, by using an online screening tool for anxiety and depression which was completed by parents in the clinic waiting room (Bennett et al., 2019). The positive results from this feasibility study suggests that the use of this method of screening may be useful for the assessment of anxiety and depression in children and young people with other life-limiting conditions, such as cystic fibrosis.

However, the appropriateness of psychological screening programmes for children and young people with life-limiting conditions can be questioned. The UK National Screening Committee have set a list of criteria for appraising the appropriateness and effectiveness of a screening programme (UK National Screening Committee, 2015). One of the key principles outlined is that there must be a validated screening test to use in the programme. However, the majority of screening tools for anxiety and depression have not been validated for use by children and young people with life-limiting conditions (Thabrew et al., 2017).

Additionally, the criteria state that prior to the implementation of a screening programme it must be demonstrated that adequate facilities are available for the treatment of individuals who are identified through screening as needing psychological support. Different models of psychological care can be used to manage anxiety or depression in children and young people with life-limiting conditions. Paediatric Liaison Child and Adolescent Mental Health Services offer a model of care whereby psychological care is integrated within paediatric medical units (Garralda and Slaveska-Hollis, 2016). This allows for the combined input of paediatricians, psychologists, and psychiatrists in the management of mental health conditions, which may be necessary if the mental health condition is associated with the child or young person's specific physical condition, such as challenges adjusting to the condition or issues regarding adherence to medications (Garralda and Slaveska-Hollis, 2016). However, the availability of these services appears to be limited (Garralda and Slaveska-Hollis, 2016). Another option is the referral to generic child and adolescent mental health services. However, the limited availability of such services in the UK means that referrals can involve lengthy waiting times for children and young people with life-limiting conditions, as well as children and young people in the general population (Abbott et al., 2019, The Lancet, 2020). Therefore, the availability of treatment must be

improved, and further criteria met, such as the establishment of monitoring plans for the programme, before an effective screening programme is implemented (UK National Screening Committee, 2015).

6.5 Implications for Research

The findings from this thesis highlight several important areas for future research. As the comparative cohort study included in this thesis was the first study exploring anxiety/depression incidence in children and young people with life-limiting conditions, further longitudinal studies are needed in order to support and expand upon the findings of this thesis. Numerous electronic healthcare databases exist across Europe, such as the National Health Registries from Sweden, Finland, and Denmark (Pacurariu et al., 2018). The use of these, along with CPRD and HES data, in future studies would provide a very large sample size in which to compare the incidence of anxiety and depression by different life-limiting condition diagnoses and to more comprehensively investigate the association between ethnicity and anxiety/depression in children and young people with life-limiting conditions.

However, before further studies are conducted investigating anxiety/depression incidence using electronic healthcare data, it is important that studies are undertaken exploring variations in GP coding of anxiety/depression in children and young people. Previous research has shown that anxiety/depression is under-reported among children and young people in primary care, with some GPs being disinclined to code these conditions or not feeling that they have received adequate training to do so (Cresswell et al., 2012, De Lusignan, 2005, O'Brien et al., 2016, Sheldrick, Merchant and Perrin, 2011). Therefore, further research exploring anxiety/depression coding practices would be beneficial in order to better understand how the epidemiology of anxiety and depression in children and young people from healthcare data reflects the epidemiology beyond the healthcare setting.

Although the use of electronic healthcare data can answer many crucial questions in epidemiology, several important factors in the study of anxiety and depression epidemiology are not captured by this type of data. Some of these factors include the psychological factors shown to be associated with anxiety and depression in the general population, such as temperament (Forbes et al., 2017) and coping style

(Schäfer et al., 2017), which was also found to have a protective effect on anxiety and depressive symptoms among children and young people with life-limiting conditions in the best-evidence synthesis included in this thesis. Birth cohort studies would allow for the investigation of the longitudinal association between these psychological factors and the incidence of anxiety and depression in children and young people with life-limiting conditions.

It is important, however, that anxiety/depression measurement tools are validated for use among children and young people with life-limiting conditions before being used in any future studies. In addition, as many children and young people with life-limiting conditions may also have co-occurring intellectual disabilities, further research into methods to reliably assess anxiety and depression in these children is necessary in order to understand the epidemiology of anxiety/depression across the whole population of children and young people with life-limiting conditions.

More generally, the reporting of previous studies assessing the prevalence of anxiety and depression in children and young people with life-limiting conditions missed key study details. Therefore, it is important that any future studies in this area follow the EQUATOR (Enhancing the Quality and Transparency of Health Research) guidelines in order to ensure the proper reporting of all study elements (UK EQUATOR Centre, 2021).

6.6 Conclusions

The findings from this thesis suggest that the prevalence and incidence of anxiety and depression are higher among children and young people with life-limiting conditions compared to children and young people from the general population. Additionally, the factors associated with anxiety and depression in children and young people with life-limiting conditions do not seem to differ from those associated with these mental health conditions in children and young people from the general population. These findings add support to the arguments for increased prevention and identification of mental health conditions in children and young people with life-limiting conditions. The findings also indicate that certain groups of children and young people with life-limiting conditions may be at greater risk of experiencing mental health conditions such as anxiety and depression. However, further research is needed both to investigate the validity of the detection of mental health conditions among children and young people with life-limiting conditions and to explore the effect of other factors on the development of anxiety and depression in this population.

Appendix 1: 'Prevalence and Incidence of Anxiety and Depression Among Children, Adolescents, and Young Adults with Life-Limiting Conditions' (JAMA Publication – July 2019)

JAMA Pediatrics | Original Investigation

Prevalence and Incidence of Anxiety and Depression Among Children, Adolescents, and Young Adults With Life-Limiting Conditions

A Systematic Review and Meta-analysis

Mary M. Barker, MPH; Bryony Beresford, PhD; Martin Bland, PhD; Lorna K. Fraser, PhD

IMPORTANCE Children, adolescents, and young adults with life-limiting conditions experience various challenges that may make them more vulnerable to mental health problems, such as anxiety and depression. However, the prevalence and incidence of anxiety and depression among this population appears to be unknown.

OBJECTIVE To conduct a systematic review and meta-analysis to estimate the prevalence and/or incidence of anxiety and depression in children, adolescents, and young adults with life-limiting conditions.

DATA SOURCES Searches of MEDLINE (PubMed), PsycInfo, and Embase were conducted to identify studies published between January 2000 and January 2018.

STUDY SELECTION Studies were eligible for this review if they provided primary data of anxiety or depression prevalence and/or incidence, included participants aged 5 to 25 years with a life-limiting condition, were conducted in an Organisation for Economic Co-operation and Development country, and were available in English.

DATA EXTRACTION AND SYNTHESIS Random-effects meta-analyses were generated to provide anxiety and depression prevalence estimates. Meta-regression was conducted to analyze associations between study characteristics and each prevalence estimate.

MAIN OUTCOMES AND MEASURES Prevalence of anxiety and depression.

RESULTS A total of 14 866 nonduplicate articles were screened, of which 37 were included in the review. Of these, 19 studies reported anxiety prevalence, and 36 studies reported depression prevalence. The mean (range) age of participants was 15.4 (6-25) years. The meta-analysis of anxiety prevalence (n = 4547 participants) generated a pooled prevalence estimate of 19.1% (95% CI, 14.1%-24.6%). Meta-regression analysis found statistically significant differences in anxiety prevalence by assessment tool; diagnostic interviews were associated with higher anxiety prevalence (28.5% [95% CI, 13.2%-46.8%]) than self-reported or parent-reported measures (14.9% [95% CI, 10.9%-19.4%]). The depression meta-analysis (n = 5934 participants) found a pooled prevalence estimate of 14.3% (95% CI, 10.5%-18.6%). Meta-regression analysis revealed statistically significant differences in depression prevalence by the mean age of the sample (β = 0.02 [95% CI, 0.01-0.03]; *P* = .001).

CONCLUSIONS AND RELEVANCE In this systematic review and meta-analysis, the prevalence of anxiety and depression among children, adolescents, and young adults with life-limiting conditions was high, highlighting the need for increased psychological assessment and monitoring. Further research is required to determine the prevalence and incidence of anxiety and depression in a larger sample of children, adolescents, and young adults with a broader range of life-limiting conditions.

JAMA Pediatr. doi:10.1001/jamapediatrics.2019.1712
Published online July 8, 2019.

Editorial
Supplemental content

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Mental health problems among young people are a growing public health concern, affecting between 10% and 20% of children and adolescents worldwide.[1] National surveys in the United States have found that 3% of children and adolescents have a diagnosis of anxiety, while depression prevalence ranged from 2.1% to 8.1%.[2] Furthermore, for three-quarters of adults with long-term mental health problems, onset occurred before age 24 years.[3]

Growing research of children, adolescents, and young adults suggests a strong link between chronic physical illness and mental health problems.[4-6] Some chronic conditions are life limiting. These include conditions for which there is no cure that cause death, either directly (eg, Batten disease, Duchenne muscular dystrophy) or through secondary health difficulties associated with the condition (eg, severe cerebral palsy), and those for which curative treatment is possible but may result in failure (eg, cancer, organ failure).[7] After diagnosis of a life-limiting condition (LLC), children, adolescents, and young adults may encounter multiple disease-associated challenges, which, coupled with the stressors associated with the period of adolescence, such as puberty and the desire to become independent from one's parents, makes navigating daily life a potentially challenging endeavor.[8,9] For example, regular clinic appointments and hospitalizations can result in children and young people missing school, therefore potentially disrupting both their education and peer relationships.[10] These challenges can be exacerbated by physical symptoms resulting from the LLC itself or associated treatment regimens, either through adverse effects, such as fatigue caused by medication, or direct biochemical changes, which have been proposed to be linked to the onset of depression in some patients.[11,12] Children, adolescents, and young adults with LLCs may also have fears surrounding the unpredictability of their future, including the fear of death, which often make patients unsure if they will be able to achieve future hopes and aspirations.[13]

The prevalence of LLCs in England rose from 25 per 10 000 in 2000 and 2001 to 32 per 10 000 in 2009 and 2010, with the largest increase in prevalence occurring in young people aged between 16 and 19 years, which likely represents an increase in survival.[14] Because chronic physical illness has been found to be associated with an increased risk of mental health problems, the increased prevalence of LLCs among children and young people necessitates the development of services aimed at caring for their psychological needs. This has been recognized in England and Wales by the National Institute for Health and Care Excellence 2016 guidelines regarding end-of-life care for infants, children, and young people with LLCs, which highlight the need for research into the range, severity, and context of psychological difficulties among children and young people with LLCs for the subsequent design of effective interventions.[15] Therefore, it is crucial that research analyzing the epidemiology of anxiety and depression is systematically reviewed to guide future research and clinical guidance. Consequently, this systematic review and meta-analysis aims to estimate the prevalence and incidence of anxiety and depression in children and young people (aged 5-25 years) with a range of LLCs.

Key Points

Question What is the prevalence and/or incidence of anxiety and depression in children, adolescents, and young adults with life-limiting conditions?

Findings In this systematic review and meta-analysis, the pooled prevalence of anxiety in 19 studies was 19.1%, with significant differences in prevalence according to the type of assessment tool used; in a meta-analysis of 36 studies, depression prevalence was 14.3% and was associated with increasing age. No studies included information on incidence of anxiety or depression.

Meaning The high prevalence of anxiety and depression in children, adolescents, and young adults with life-limiting conditions highlights the need for improved services to address their psychological needs.

Methods

Search Strategy

The systematic review and meta-analysis was conducted according to a review protocol registered on PROSPERO prior to review initiation (identifier: CRD42018088795). Embase, MEDLINE (PubMed), and PsycInfo were searched on January 15, 2018, to identify articles published from January 1, 2000, onward. The search was conducted using both subject headings and free text with the various combinations of the terms *children*, *adolescents*, *young adults*, *anxiety*, *depression*, and terms for specific life-limiting conditions, including a full list of all LLC diagnoses (eTable 1 in the Supplement for MEDLINE search strategy).[16] Reference lists of identified systematic reviews and all included articles were searched for additional eligible papers. The gray literature was reviewed using an advanced Google search, with the first 50 PDFs obtained screened for eligibility.

Studies were included if (1) they provided primary data of anxiety or depression prevalence or incidence measured using validated assessment tools or coded medical report data, (2) participants were between the ages of 5 and 25 years, (3) participants had been diagnosed with a LLC, (4) the study was published in English or subsequently translated into English, and (5) the study was conducted in a country within the Organisation for Economic Co-operation and Development. The following types of study designs were excluded: (1) case studies, case series, intervention studies, qualitative studies, systematic reviews, and abstracts; (2) studies that included non-LLC diagnoses and did not report data of non-LLC and LLC subgroups separately; and (3) studies of participants successfully treated for cancer.

Study Selection

Titles and abstracts of all studies were screened by the primary reviewer (M.M.B.), with 20% also independently screened by a second reviewer (a nonauthor). Any discrepancies were resolved through discussion. Full texts of all studies deemed potentially eligible were retrieved and reviewed for eligibility by the first reviewer (M.M.B.), with the second

reviewer also independently reviewing 20%. For articles in which key data were missing, study authors were contacted. In the case that authors did not reply to this request, the article was not included. Studies investigating the prevalence of anxiety or depression among children and young people with DiGeorge syndrome were excluded at this stage because mental health problems are a component of this condition.

Data Extraction

Data were extracted by 1 reviewer (M.M.B.), using an extraction form piloted on 3 eligible studies. Key study characteristics including country of study, study design, recruitment and eligibility criteria, anxiety and depression assessment tool (s), age, and sex were extracted. The number of participants identified by the study as being anxious or depressed was recorded along with the study sample size for the calculation of prevalence. For the calculation of incidence, the number of new cases identified and the person-time used was extracted.

Risk of Bias Assessment

In response to the fact that included studies only reported prevalence, the protocol was amended to use a tool specifically designed to assess bias in prevalence studies.[17] The chosen tool consists of 10 questions, which are scored positively or negatively, and according to the total score, each study was characterized as being at low, moderate, or high risk of bias. Any studies deemed to be at high risk of bias were excluded from the meta-analysis.

Statistical Analysis

Stata version 15.1 (StataCorp) was used to generate meta-analyses for anxiety and depression prevalence. Random-effects meta-analyses were used owing to the high expected heterogeneity between studies. To stabilize variances, study data were first transformed using the double arcsine transformation.[18] Study-specific 95% CIs were generated using the exact method. Heterogeneity was analyzed using the I^2 statistic. Heterogeneity was first explored through subgroup analysis, using the following categorical study characteristics: (1) LLC diagnostic group (cancer, cystic fibrosis, HIV, thalassemia, neurological conditions, or chronic kidney disease); (2) study location (Europe or the United States); (3) assessment tool (self-report or parent-report questionnaire or diagnostic interview); and (4) risk of bias (low or moderate). Univariate meta-regression models were then conducted to assess the association between study characteristics and the pooled prevalence estimate. Models were generated for each of the aforementioned categorical study characteristics, in addition to the following quantitative study characteristics: sample size, mean age, and percentage of female participants in the sample.

Publication bias was assessed using funnel plots and the Egger test of bias. A significance level of $P < .05$ was used throughout.

Results

The electronic search identified 14 866 nonduplicate articles, as shown in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses flow diagram (**Figure 1**). The full texts of 709 articles were retrieved and assessed for eligibility, resulting in the inclusion of 37 studies.[11,19-54] Of the included articles, 19 studies[11,19,22,26,27,29-33,36,39,41-45,48,54] reported anxiety prevalence, and 36 studies[11,19-47,49-54] reported depression prevalence. None reported the incidence of anxiety or depression.

Study Characteristics

The key characteristics of the 37 included studies are summarized in the **Table**. In total, 6042 participants were included. Study sample sizes ranged from 20 to 2032 participants, with a median of 50 (interquartile range [IQR], 38-96) participants. The age range of participants was reported in 30 studies,[11,19-25,27,28,31,33-40,42-49,51-53] and these ranged from 6 to 25 years overall. The mean (SD) participant age from the 24 studies providing this information was 15.4 (3.2) years. The proportion of female participants in the study sample was reported in 32 studies,[11,19-34,36-38,40,41,43-47,49,51-54] with a total of 2432 female participants among 5403 participants (a mean of 45.0%).

A total of 18 studies[22,24,27,28,30,31,34-41,50-52,54] (49%) were from the United States, and 15 studies[11,19,21,23,26,29,33,43-49,53] (41%) were from Europe. In addition, 1 study[20] was from Canada, 1 study[25] was from Mexico, and 2 studies (5%) were multinational (1 in European countries and the United States[32] and 1 in European countries only[42]).

Of the 37 included studies, 6 studies[11,21-25] (16%) assessed children, adolescents, and young adults with cancer (n = 394), 8 studies[26-33] (22%) included children, adolescents, and young adults with cystic fibrosis (n = 1628), and a further 9 studies[34-41,54] (24%) assessed children, adolescents, and young adults with HIV (n = 3138). Children, adolescents, and young adults with thalassemia were included in 4 studies[42-45] (11%; n = 120), while 7 studies[19,20,46-50] (19%; n = 342) assessed children, adolescents, and young adults with neurological conditions, and 3 studies[51-53] (8%; n = 420) included children, adolescents, and young adults with chronic kidney disease.

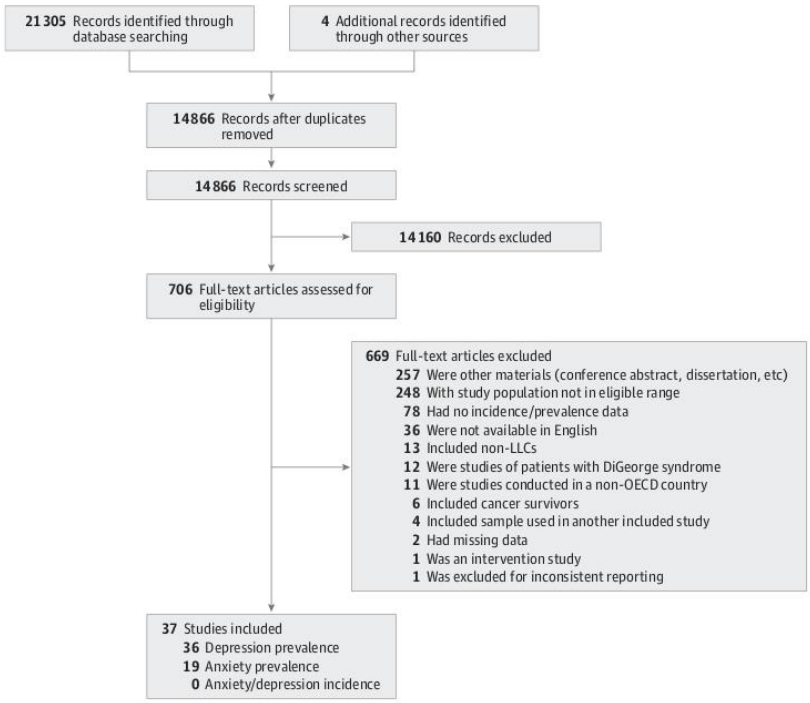
Risk of Bias Assessment

No studies were deemed to be at high risk of bias, 14 studies[19,20,23-25,27,34,43-46,49-51] (38%) were at moderate risk of bias, and 23 studies[11,21,22,26,28-33,35-42,47,48,52-54] (62%) were at low risk of bias. Only 1 study[11] scored positively on the question regarding minimizing the likelihood of nonresponse bias (eTable 2 in the Supplement).

Anxiety and Depression Assessment Tools

A total of 10 different assessment tools were used to measure the prevalence of anxiety, while 15 different assessment tools were used to assess depression prevalence (eTable 3 in the Supplement). The most common assessment tool for measuring anxiety was the anxiety subscale of the Hospital Anxiety and Depression Scale, which was used in 7 studies[11,26,29-33] of the 19 studies in this group (37%), whereas the Children's Depression Inventory was the most common depression assessment tool, having been used in 9 studies[21,23,25,28,46,47,51-53] of the 36 in this group (25%). Parent-report measures were used in 3 studies.[19,20,54]

Figure 1. Flow Diagram



The flow diagram adheres to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses standard. LLC indicates life-limiting conditions; OECD, Organisation for Economic Co-operation and Development.

Prevalence of Anxiety

The prevalence of anxiety was reported in 19 studies,[11,19,22,26,27,29-33,36,39,41-45,48,54] with a total of 4547 participants. Anxiety prevalence ranged from 3.6% (95% CI, 0.4%-12.5%) to 58.3% (95% CI, 36.6%-77.9%). The pooled anxiety prevalence estimate from the random-effects meta-analysis was 19.1% (95% CI, 14.1%-24.6%). The level of heterogeneity in the analysis was high (I^2 = 92.2%; P < .001) (**Figure 2**). Although visual inspection of the funnel plot asymmetry suggests the presence of publication bias, with fewer small studies reporting high anxiety prevalence, this was not found to be significant by the Egger test of bias (eFigure 1 in the Supplement).

Subgroup analysis revealed differences in anxiety prevalence by diagnostic group (Figure 2). Children, adolescents, and young adults with thalassemia were reported to have the highest pooled anxiety prevalence estimate (29.4% [95% CI, 8.8%-55.3%]), followed by children, adolescents, and young adults with cystic fibrosis (22.8% [95% CI, 17.1%-29.1%]). The lowest pooled anxiety prevalence estimate was found for children, adolescents, and young adults with neurological conditions (8.7% [95% CI, 4.4%-14.3%]). Pooled anxiety prevalence was also found to differ by study location; studies conducted in the United States were found to report a higher prevalence (20.8% [95% CI, 11.3%-32.1%]) than studies conducted in Europe (17.2% [95% CI, 9.9%-26.0%]). Differences in pooled anxiety prevalence were also found by assessment tool, with a lower prevalence reported from studies using self-report or parent-report questionnaires (14.9% [95% CI, 10.9%-19.4%]) compared with studies using diagnostic interviews (28.5% [95% CI, 13.2%-46.8%]). Finally, prevalence varied by the risk of bias; studies at moderate risk of bias reported a higher prevalence (23.1% [95% CI, 7.8%-43.0%]) compared with studies at low risk of bias (18.2% [95% CI, 12.8%-24.3%]) (eTable 4 in the Supplement). However, meta-regression analysis showed that only the differences by assessment tool were statistically significant (β = 0.15 [95% CI, 0.01-0.30]; P = 0.04). Prevalence was not significantly associated with sample size, mean age, or percentage of females in the sample (eTable 5 in the Supplement).

Prevalence of Depression

The prevalence of depression was reported in 36 studies,[11,19-47,49-54] with a total of 5934 participants. Depression prevalence ranged from 0.0% (95% CI, 0.0%-0.7%) to 50.0% (95% CI, 34.9%-65.1%). The pooled depression prevalence estimate from the random-effects meta-analysis was 14.3% (95% CI, 10.5%-18.6%). Substantial heterogeneity was found in the analysis (I^2 = 93.3%; P < .001) (Figure 2). Although visual inspection of the funnel plot for the depression meta-analysis suggested some publication bias owing to a lack of published studies with large standard errors that report high depression prevalence, this was not found to be statistically significant by the Egger test of bias (eFigure 2 in the Supplement).

Table. Key Characteristics of the 37 Included Studies

Source	Location	Total Participants	Age, Mean (SD) [Range], y	No. of Female Participants/ No. of Total Participants (%)	Year of Data Collection	Anxiety Prevalence Reported	Depression Prevalence Reported	Risk of Bias
Cancer								
Hedström et al,[11] 2005	Sweden	56	NR (NR) [13-19]	24/56 (43)	1999-2003	Yes	Yes	Low
Matziou et al,[21] 2008	Greece	80	11.2 (NR) [6-16]	35/80 (44)	2002-2005	No	Yes	Low
Kersun et al,[22] 2009	United States	41	15.2 (2.2) [12-19]	18/41 (44)	NR	Yes	Yes	Low
Durualp and Altay,[23] 2012	Turkey	20	NR (NR) [6-12]	10/20 (50)	2010-2011	No	Yes	Moderate
Bemis et al,[24] 2015	United States	151	13.5 (2.4) [10-17]	77/151 (51)	NR	No	Yes	Moderate
Rivas-Molina et al,[25] 2015	Mexico	46	NR (NR) [7-15]	14/46 (30)	2012	No	Yes	Moderate
Cystic Fibrosis								
Casier et al,[26] 2008	Belgium	34	17.3 (3.1) [NR]	18/34 (53)	NR	Yes	Yes	Low
White et al,[27] 2009	United States	53	12.4 (2.6) [9-17]	31/53 (58)	1995-1996	Yes	Yes	Moderate
Smith et al,[28] 2010	United States	39	12.0 (3.1) [7-17]	20/39 (51)	NR	No	Yes	Low
Casier et al,[29] 2011	Belgium	40	18.4 (2.9) [NR]	17/40 (43)	NR	Yes	Yes	Low
Modi et al,[30] 2011	United States	59	15.8 (2.5) [NR]	27/59 (46)	2006-2008	Yes	Yes	Low
Oliver et al,[31] 2014	United States	72	19.1 (3.3) [14-25]	36/72 (50)	2010-2011	Yes	Yes	Low
Quittner et al,[32] 2014	Multinational (Europe and United States)	1286	14.8 (1.7) [NR]	669/1286 (52)	NR	Yes	Yes	Low
Askew et al,[33] 2017	United Kingdom	45	20.7 (NR) [17-24]	18/45 (40)	NR	Yes	Yes	Low
HIV								
Pao et al,[34] 2000	United States	34	18.5 (NR) [16-21]	27/34 (79)	NR	No	Yes	Moderate
Murphy et al,[35] 2001	United States	213	NR (NR) [12-18]	NR	1999-2000	No	Yes	Low
Elliott-DeSorbo et al,[36] 2009	United States	55	12.9 (NR) [8-17]	25/55 (45)	2001-2005	Yes	Yes	Low
Mellins et al,[54] 2009	United States	206	12.3 (2.2) [NR]	105/206 (51)	NR	Yes	Yes	Low
Andrinopoulos et al,[37] 2011	United States	166	NR (NR) [15-24]	166/166 (100)	2003-2005	No	Yes	Low
Martinez et al,[38] 2012	United States	60	20.6 (2.0) [15-24]	60/60 (100)	2003-2005	No	Yes	Low
Nachman et al,[39] 2012	United States	313	NR (NR) [6-17]	NR	2007	Yes	Yes	Low
Salama et al,[40] 2013	United States	59	18.8 (NR) [14-23]	36/59 (61)	2002-2003	No	Yes	Low
Brown et al,[41] 2015	United States	2032	20.3 (NR) (2.1)	662/2032 (33)	2009-2012	Yes	Yes	Low
Thalassemia								
Clemente et al,[42] 2002	Multinational (Europe)	38	NR (NR) [6-18]	NR	1994-1996	Yes	Yes	Low
Aydinok et al,[43] 2005	Turkey	38	12.2 (3.3) [6-18]	20/38 (53)	NR	Yes	Yes	Moderate
Cakaloz et al,[44] 2009	Turkey	20	11.1 (3.0) [7-18]	13/20 (65)	NR	Yes	Yes	Moderate
Adanir et al,[45] 2017	Turkey	24	13.6 (2.1) [12-18]	11/24 (46)	NR	Yes	Yes	Moderate
Neurological Conditions								
Laufersweiler-Plass et al,[19] 2003	Germany	96	11.2 (NR) [6-18]	49/96 (51)	NR	Yes	Yes	Moderate
Bäckman et al,[46] 2005	Finland	27	NR (NR) [9-21]	14/27 (52)	NR	No	Yes	Moderate
Amato et al,[47] 2008	Italy	63	15.3 (2.5) [8-17]	33/63 (52)	NR	No	Yes	Low
Amato et al,[48] 2010	Italy	39	NR (NR) [12-20]	NR	NR	Yes	No	Low
Till et al,[20] 2012	Canada	31	16.1 (NR) [12-19]	23/31 (74)	NR	No	Yes	Moderate
Elsenbruch et al,[49] 2013	Germany	50	15.4 (0.6) [8-23]	0/50	2009-2011	No	Yes	Moderate
Parrish et al,[50] 2013	United States	36	NR (NR) [NR]	NR	NR	No	Yes	Moderate

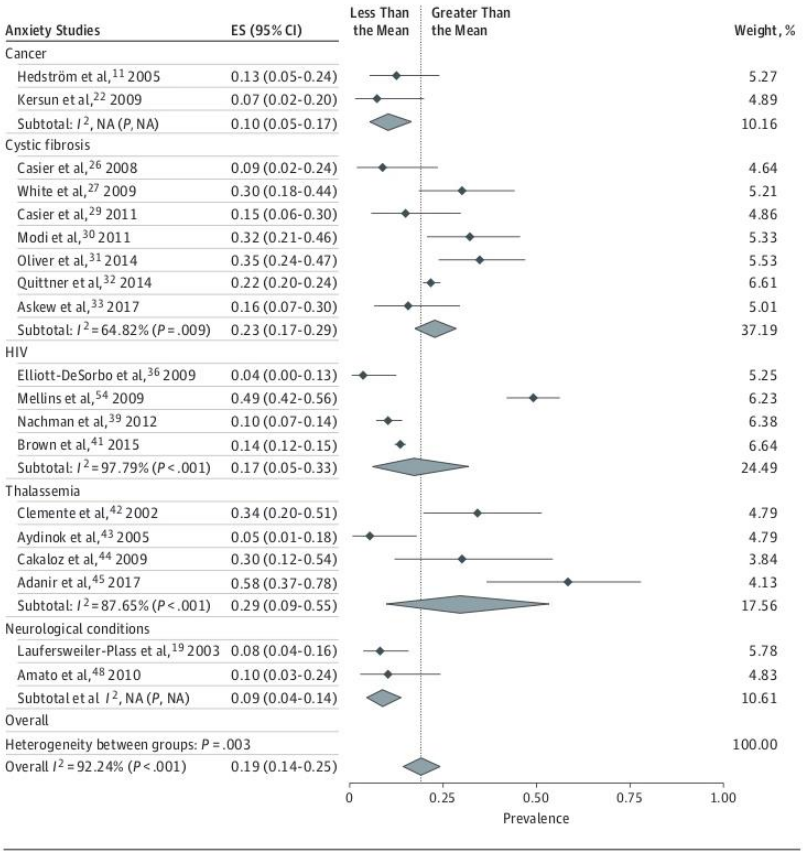
(continued)

Table. Key Characteristics of the 37 Included Studies (continued)

Source	Location	Total Participants	Age, Mean (SD) [Range], y	No. of Female Participants/ No. of Total Participants (%)	Year of Data Collection	Anxiety Prevalence Reported	Depression Prevalence Reported	Risk of Bias
Chronic Kidney Disease								
Kogon et al,[51] 2013	United States	44	NR (NR) [7-18]	13/44 (30)	2011-2012	No	Yes	Moderate
Kogon et al,[52] 2016	United States	344	NR (NR) [6-17]	142/344 (41)	2005-2008	No	Yes	Low
Kilicoglu et al,[53] 2016	Turkey	32	NR (NR) [8-18]	19/32 (59)	2014	No	Yes	Low

Abbreviation: NR, not reported.

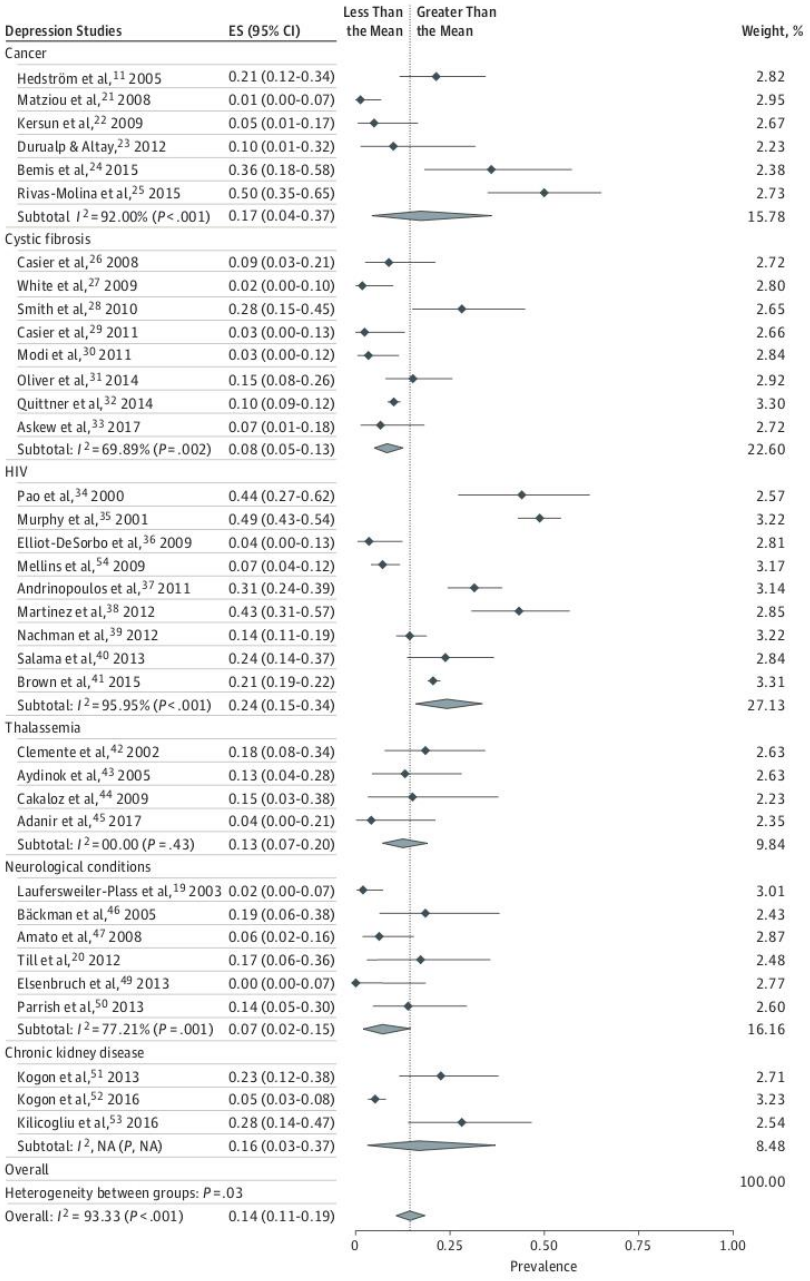
Figure 2. Forest Plot of Pooled Anxiety Prevalence, Grouped by Life-Limiting Condition Diagnostic Group



Forest plot of 19 studies included in the meta-analysis of anxiety prevalence. The pooled anxiety prevalence from the meta-analysis was 19.1% (95% CI, 14.1%-24.6%). ES indicates effect size (prevalence).

Subgroup analysis found that the pooled prevalence of depression differed by diagnostic group. Children, adolescents, and young adults with HIV reported the highest pooled depression prevalence (24.2% [95% CI, 15.4%-34.2%]), while those with neurological conditions had the lowest prevalence (7.0% [95% CI, 1.7%-15.0%]). Studies in the United States reported higher depression prevalence (18.8% [95% CI, 12.6%-25.8%]) compared with studies in Europe (9.5% [95% CI, 5.0%-15.1%]) (**Figure 3**). Differences in pooled depression prevalence were also found by assessment tool; studies that used self-reported or parent-reported measures had a higher pooled prevalence (15.4% [95% CI, 11.0%-20.4%]) than studies using diagnostic interviews (10.5% [95% CI, 4.0%-19.3%]). Variations in depression prevalence according to the risk of bias assigned to the study were very small; studies at moderate risk of bias reported a slightly higher prevalence (14.8% [95% CI, 6.7%-25.0%]) than studies at low risk of bias (14.2% [95% CI, 9.7%-19.4%]) (eTable 6 in the Supplement). Meta-regression analysis found only the mean age of the sample population (β = 0.02 [95% CI, 0.01-0.03]; *P* = .001) to be significantly associated with pooled depression prevalence (eTable 7 in the Supplement).

Figure 3. Forest Plot of Pooled Depression Prevalence, Grouped by Life-Limiting Condition Diagnostic Group



Forest plot of the 36 studies included in the meta-analysis of depression prevalence. The pooled depression prevalence from the meta-analysis was 14.3% (95% CI, 10.5%-18.6%). ES indicates effect size (prevalence).

Discussion

Key Findings

When compared with available data from the general population, this meta-analysis of 37 studies indicates a higher prevalence of anxiety and depression in children, adolescents, and young adults with LLCs compared with the general population. The pooled anxiety prevalence estimate of 19.1% observed in this analysis is more than 6 times higher than the prevalence of anxiety among the general population of young people in the United States, 3%, and more than double the

anxiety prevalence of children and young people in the United Kingdom, 7.2%.[2,55] The observed prevalence of depression among children, adolescents, and young adults with LLCs was 14.3%, which was also higher than the range of depression prevalence estimates found for young people in the United States and the United Kingdom (2.1%-8.1%).[2,55]

Interestingly, the prevalence of anxiety and depression was found to vary by LLC diagnostic group. The highest pooled anxiety prevalence estimate (29.4%) was found for children, adolescents, and young adults with thalassemia, whereas those with HIV reported the highest pooled prevalence of depression (24.2%). Overall, these findings support the literature describing the challenges of living with a LLC and highlight the fact that recognition of and provision for psychological needs should be a core aspect of the care and support offered to this population.[8,56]

It was also observed that anxiety and depression prevalence estimates were modified by the type of assessment tool used, with diagnostic interviews resulting in higher anxiety prevalence. Differences in anxiety prevalence by the type of assessment tool used have been shown in previous studies—for example, a systematic review of anxiety prevalence in children and adolescents with autistic spectrum disorders.[57] Conversely, higher depression prevalence was associated with the use of self-report or parent-report questionnaires, a finding previously reported by a systematic review of the prevalence of depression among adults with chronic kidney disease.[58] These findings may be partially accounted for by the diagnostic groups studied. For example, more than half of the studies using diagnostic interviews concerned children, adolescents, and young adults with thalassemia, and the pooled anxiety prevalence for this group was very high, whereas in the case of depression, the highest pooled prevalence was found for HIV studies, most of which used self-reported or parent-reported measures.

Finally, age was identified by the meta-regression analysis to be significantly associated with depression prevalence. This trend is consistent to that found among young people with anxiety or depression both in the United States and the United Kingdom.[2,55] Although sex was not found to be associated with depression prevalence, and neither sex nor age were associated with anxiety prevalence, these findings should be treated with particular caution, given that many studies could not be included in the meta-regression model owing to lack of reporting of age and sex data.

Strengths

This review has a number of strengths. First, this is the first systematic review and meta-analysis of anxiety and depression prevalence among children, adolescents, and young adults with LLCs to have been conducted. Given that there are increasing numbers of children, adolescents, and young adults living with LLCs, and recent calls have been made to recognize and address the mental health needs of this population, a comprehensive picture of existing evidence of the prevalence of depression and anxiety across this population is extremely valuable. Second, the comprehensive search strategy used in this review resulted in the inclusion of a total of 37 studies in the meta-analyses from more than 10 countries covering 5 LLC diagnostic groups. This improves the robustness of the pooled prevalence estimates, offering a more accurate description of the epidemiology of anxiety and depression in this patient group than is afforded by single studies.

Limitations

However, weaknesses in the review methodology must be noted. First, only studies written in English were eligible for inclusion, limiting the generalizability of the prevalence estimates. This review is also limited by the available data set. As such, the coverage of LLCs is far from exhaustive. Importantly, of the 6042 participants included in the review, only 342 (5.7%) had neurological conditions, yet more than 8% of children and adolescents with a LLC in England have a neurological diagnosis.[14] Importantly, intellectual disability, which brings an increased risk of mental health problems, is a common comorbidity among this group.[59] However, the identification of mental health problems or emotional distress in young people with intellectual disability can be complex owing to communication limitations.[60] While greater efforts should be made to improve accessibility and suitability of self-reported or parent-reported measures, for some individuals, the detection of emotional distress will rely on methods such as the interpretation of nonverbal behaviors, utterances, and physiological responses.[60]

There are also some broader limitations in terms of the characteristics of the included studies. First, many studies had very small sample sizes. When combined with the relatively narrow range of LLCs represented, this limits the ability of any analysis to produce results that are representative of the population. Additionally, this makes it more difficult to compare results with general population data. Second, there was poor reporting of key study data, such as the age and sex of study participants. For example, only 15 of the included studies (79%) reporting anxiety prevalence and 24 of the studies (67%) reporting depression prevalence provided the mean age of the sample. This greatly reduced the number of studies that could be included in the meta-regression models. Finally, because no studies reported longitudinal data, the incidence of anxiety and depression in children, adolescents, and young adults with LLCs could not be assessed.

Conclusions

Despite these limitations, the findings have a number of key implications. Importantly, they support the argument for routine screening for mental health problems as part of the development of psychosocial standards of care.[61] This would both assist the systematic identification of patients at risk of mental health problems and the instigation of preventive steps and identify those needing support and treatment. Data from routine screening would also be valuable evidence for those making the case for increasing the resources available for mental health and psychosocial care provision within their services.

There has already been some progress on this issue. For example, annual screening for mental health problems in

patients with cystic fibrosis was recommended in the European consensus on standards of care.[62] However, for this to be performed effectively, screening tools must first be validated in children, adolescents, and young adults with LLCs, because currently most of the anxiety and depression measurement tools have only been validated in the general population.[63]

In addition to work on the psychometric properties of screening instruments, 2 further areas of research are required. First, more large-scale studies are needed, including on a broader range of LLCs, to consolidate existing evidence and further understand differences in the prevalence of mental health problems between different LLCs. For the effects of age and sex to be adequately assessed in future studies, results should be reported by sex and age group. Second, longitudinal studies are required to develop the understanding of the temporal associations between the diagnosis of a LLC, its trajectory, and the onset of mental health problems, while also allowing for an exploration of factors which increase the risk of anxiety or depression onset.

Anxiety and depression are common mental health problems among children, adolescents, and young adults with LLCs, calling for the implementation of routine screening to identify both those at risk of mental health problems and those requiring treatment. However, to further understand the epidemiology of anxiety and depression in this patient population, larger longitudinal studies must be conducted in a wider range of LLCs, including on children with neurological conditions and cognitive impairment.

ARTICLE INFORMATION

Accepted for Publication: March 20, 2019.

Published Online: July 8, 2019. doi:10.1001/jamapediatrics.2019.1712

Author Contributions: Dr Barker had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.
Concept and design: Barker, Beresford, Fraser.
Acquisition, analysis, or interpretation of data: All authors.
Drafting of the manuscript: Barker, Beresford, Fraser.
Critical revision of the manuscript for important intellectual content: All authors.
Statistical analysis: Barker, Bland, Fraser.
Obtained funding: Beresford, Fraser.
Supervision: Beresford, Fraser.

Conflict of Interest Disclosures: Dr Fraser reported grants from Martin House Children's Hospice during the conduct of the study. No other disclosures were reported.

Funding/Support: This article was undertaken as part of the Martin House Research Centre, which is supported by Martin House Hospice Care for Children and Young People and the University of York.

Role of the Funder/Sponsor: The funder had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

Additional Contributions: Liam Robson, BSc, MPH, University of York, conducted a portion of the abstract screening and full text review. Tom Ainscough, PhD, University of York, reviewed sections of the manuscript. They were not compensated for their contributions.

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Appendix 2: Medline Search Strategy

Number	Searches	Results
1	exp Child/	1906328
2	exp Infant/	1145037
3	Adolescent/	2013002
4	(child$ or infant$ or newborn$ or new-born$ or neonat$ or neo-nat$ or baby$ or babies or pediat$ or paediat$ or schoolchild$ or preschool$).ti,ab,kf.	1864634
5	(adolescen$ or juvenile$ or youth$ or teenage$ or youngster$).ti,ab,kf.	354040
6	(young people$ or young person$).ti,ab,kf.	24417
7	Anxiety/ or Anxiety Disorders/	102887
8	(anxiet$ or anxious$).ti,ab,kf.	155886
9	depression.mp. or Depression/	342148
10	depress*.ti,ab,kf.	391881
11	Depressive Disorder/	73018
12	depressive disorder$.ti,ab,kf.	28428
13	7 or 8 or 9 or 10 or 11 or 12	560066
14	Creutzfeldt-Jakob Syndrome/	6863
15	(creutzfeldt-jakob$ or jakob-creutzfeldt$ or cjd or spongiform encephalopath$).ti,ab,kf.	10431
16	Subacute Sclerosing Panencephalitis/	2454
17	(subacute sclerosing panencephalit$ or sub-acute sclerosing panencephalit$ or sspe or subacute sclerosing leukoencephalit$ or sub-acute sclerosing leukoencephalit$ or van bogaert$ leukoencephalit$ or measles inclusion body encephalit$ or mibe).ti,ab,kf.	2444
18	beta-Thalassemia/	8572
19	(beta adj (thalass?emi$ or thalas?emi$)).ti,ab,kf.	9706
20	((thalass?emi$ or thalas?emi$) adj major).ti,ab,kf.	4070
21	exp Anemia, Aplastic/	17020
22	((hypoplastic or aplastic) adj an?emi$).ti,ab,kf.	9885
23	(medullary adj3 hypoplas$).ti,ab,kf.	51
24	exp Neutropenia/	19229
25	((severe or chronic$) adj3 neutropeni$).ti,ab,kf.	3376
26	immunologic deficiency syndromes/ or acquired immunodeficiency syndrome/	94764
27	(immun$ deficiency adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	6406
28	(immunodeficiency adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	23881
29	DiGeorge Syndrome/	2083
30	(digeorge$ or di george$ or sedlackova$ or opitz g-bbb or velocardiofacial or velo-cardiofacial or velo-cardio-facial or shprintzen$ or ctaf).ti,ab,kf.	2473
31	((deletion or vcf or pharyngeal pouch or thymic aplasia or anomaly face) adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	2393
32	Common Variable Immunodeficiency/	2141
33	((common variable or late onset) adj3 (immunodeficienc$ or immune deficienc$ or immunoglobulin deficienc$ or hypogammaglobulin$)).ti,ab,kf.	2640
34	acquired hypogammaglobulin$.ti,ab,kf.	141
35	Cryoglobulinemia/	3310
36	cryoglobulin?em$.ti,ab,kf.	4269
37	Polyendocrinopathies, Autoimmune/	1255
38	((autoimmune or failure$) adj3 (polyglandular$ or polyendocrin$)).ti,ab,kf.	1371
39	Progeria/	1480
40	(progeria or hutchinson-gilford$).ti,ab,kf.	1342

41	Tyrosinemias/	432
42	tyrosin?em$.ti,ab,kf.	1178
43	Maple Syrup Urine Disease/	1234
44	(maple syrup urine or msud).ti,ab,kf.	1173
45	branched chain.ti,ab,kf.	8841
46	(bckd adj5 (deficienc$ or ketoacid$ or keto-acid$)).ti,ab,kf.	83
47	hyperleucine-isoleucin$.ti,ab,kf.	2
48	Methylmalonic Acid/	1755
49	(methylmalonic acid?emi$ or methylmalonic aciduri$ or methyl malonic acid?emi$ or methyl malonic aciduri$).ti,ab,kf.	1291
50	Propionic Acidemia/	167
51	(propionic acid?em$ or propionic acidur$ or propionyl-CoA carboxylase deficienc$ or ketotic glycin?em$).ti,ab,kf.	722
52	Adrenoleukodystrophy/	1845
53	(adrenoleukodystroph$ or x-ald or schilder-addison$ or addison-schilder$ or adrenomyeloneuropath$).ti,ab,kf.	2169
54	Carnitine O-Palmitoyltransferase/	2571
55	((carnitine palmityltransferase or carnitine palmitoyltransferase or carnitine o-palmityltransferase or carnitine o-palmitoyltransferase) adj3 deficienc$).ti,ab,kf.	289
56	Fanconi Syndrome/	1679
57	(fanconi$ adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	1667
58	Cystinosis/	1298
59	(cystinos$ or cystine storage or cystine diathes$ or cystine disease$).ti,ab,kf.	1301
60	Oculocerebrorenal Syndrome/	427
61	((lowe or lowes or oculocerebrorenal or cerebrooculorenal or cerebro-oculo-renal) adj3 (syndrome$ or disease$ or disorder$)).ti,ab,kf.	571
62	Metalloproteins/df [Deficiency]	66
63	Molybdenum/df [Deficiency]	72
64	(molybdenum cofactor deficien$ or molybdenum co-factor deficien$).ti,ab,kf.	173
65	Oxidoreductases Acting on Sulfur Group Donors/df [Deficiency]	118
66	Sulfite Oxidase/df [Deficiency]	43
67	((sulphite$ or sulfite$) adj3 oxidase deficien$).ti,ab,kf.	149
68	Argininosuccinic Acid/	191
69	(argininosuccinic acidur$ or argininosuccinic acid?emi$).ti,ab,kf.	178
70	Citrullinemia/	291
71	(citrullin?emi$ or citrullinuri$).ti,ab,kf.	547
72	Amino Acid Metabolism, Inborn Errors/	6544
73	(glutaric acid?emi$ or glutaric aciduri$).ti,ab,kf.	772
74	Hyperglycinemia, Nonketotic/	213
75	(glycine encephalopath$ or non-ketotic hyperglycin?emi$ or nonketotic hyperglycin?emi$).ti,ab,kf.	509
76	Hyperargininemia/	216
77	(arginin?emi$ or arginase deficien$ or hyperarginin?emi$).ti,ab,kf.	298
78	Renal Aminoacidurias/	791
79	(aminoaciduri$ or aminoacid?emi$).ti,ab,kf.	1159
80	exp glycogen storage disease/	6381
81	(glycogen storage adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	2766
82	(pompe$ adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	1304
83	Galactosemias/	2457
84	galactos?emi$.ti,ab,kf.	2226

85	Pyruvate Dehydrogenase Complex Deficiency Disease/	455
86	(pyruvate dehydrogenase adj3 deficien$).ti,ab,kf.	446
87	(oxalosis and (renal or kidney$)).ti,ab,kf.	445
88	exp Gangliosidoses/	2802
89	gangliosidos$.ti,ab,kf.	1552
90	(sandhoff$ adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	531
91	tay sach$.ti,ab,kf.	1466
92	Mucolipidoses/	1120
93	mucolipidos$.ti,ab,kf.	918
94	Canavan Disease/	333
95	(canavan$ leucodystroph$ or aspartoacylase deficien$ or aminoacylase 2 deficien$).ti,ab,kf.	49
96	((canavan$ or canavan-van bogaert-bertrand$) adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	424
97	Gaucher Disease/	4833
98	(gaucher$ adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	4712
99	(glucocerebrosidase deficien$ or glucosylceramidase deficien$).ti,ab,kf.	101
100	Leukodystrophy, Metachromatic/	1378
101	(metachromatic leukodystroph$ or arylsulfatase A deficien$ or metachromic leukodystroph$).ti,ab,kf.	1244
102	exp Niemann-Pick Diseases/	2555
103	(niemann-pick$ or sphingomyelinase deficien$).ti,ab,kf.	3323
104	Sphingolipidoses/	404
105	sphingolipidos$.ti,ab,kf.	323
106	Fabry Disease/	3480
107	(fabry$ adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	3490
108	(angiokeratoma corporis diffusum or alpha-galactosidase A deficien$).ti,ab,kf.	390
109	Leukodystrophy, Globoid Cell/	1069
110	(krabbe$ adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	885
111	(globoid cell leukodystroph$ or galactosylceramide lipidos$ or galactosylcerebrosidase deficien$ or galactosylceramidase deficien$).ti,ab,kf.	521
112	Farber Lipogranulomatosis/	42
113	(farber$ adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	181
114	(farber$ lipogranulomatos$ or ceramidase deficien$ or fibrocytic dysmucopolysaccharidos$).ti,ab,kf.	70
115	Pelizaeus-Merzbacher Disease/	338
116	pelizaeus-merzbacher$.ti,ab,kf.	605
117	Sulfatases/df [Deficiency]	455
118	Multiple Sulfatase Deficiency Disease/	39
119	(sulfatase deficien$ or sulphatase deficien$ or mucosulfatidos$).ti,ab,kf.	507
120	(austin$ adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	7
121	sulfatidos$.ti,ab,kf.	18
122	Sea-Blue Histiocyte Syndrome/	74
123	sea-blue histiocyt$.ti,ab,kf.	233
124	Neuronal Ceroid-Lipofuscinoses/	2056
125	(batten$ adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	658
126	(neuronal ceroid lipofuscinos$ or santavuori-haltia$ or jansky-bielschowsky$ or bielschowsky-jansky$).ti,ab,kf.	1848
127	(kuf$ adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	122
128	spielmeyer vogt$.ti,ab,kf.	120

129	Xanthomatosis, Cerebrotendinous/	339
130	((cerebrotendineous or cerebrotendinous or cerebrotendious or cerebral) adj3 (xanthomatos$ or cholesteros$)).ti,ab,kf.	653
131	bogaert-scherer-epstein$.ti,ab,kf.	5
132	Wolman Disease/	211
133	(wolman$ adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	309
134	lysosomal acid lipase deficien$.ti,ab,kf.	68
135	exp Mucopolysaccharidoses/	6662
136	mucopolysaccharidos$.ti,ab,kf.	4158
137	(hurler$ adj2 (syndrome$ or disease$ or disorder$)).ti,ab,kf.	910
138	(hunter$ adj2 (syndrome$ or disease$ or disorder$)).ti,ab,kf.	884
139	(MPS1 or MPS2 or MPS3 or MPS4 or MPS5 or MPS6 or MPS7 or MPS-1 or MPS-2 or MPS-3 or MPS-4 or MPS-5 or MPS-6 or MPS-7 or MPSI or MPSII or MPSIII or MPSIV or MPSV or MPSVI or MPSVII or MPS-I or MPS-II or MPS-III or MPS-IV or MPS-V or MPS-VI or MPS-VII).ti,ab,kf.	2270
140	(beta glucuronidase deficien$ or sly syndrome$ or sly disorder$ or sly disease$).ti,ab,kf.	188
141	(maroteaux-lamy$ or marotaeux-lamy$ or polydystrophic dwarfism).ti,ab,kf.	329
142	(morquio$ or moriquio$ or beta galactosidase deficien$).ti,ab,kf.	947
143	(sanfilippo$ or sanfillipo$).ti,ab,kf.	627
144	Mucolipidoses/	1120
145	(mucolipidos$ or pseudo-hurler$ or pseudohurler$).ti,ab,kf.	944
146	((inclusion-cell or i-cell) adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	417
147	Fucosidosis/	168
148	(fucosidos$ or fucidos$).ti,ab,kf.	332
149	"Congenital Disorders of Glycosylation"/	643
150	((cdg or ctg) adj (disease$ or disorder$ or syndrome$)).ti,ab,kf.	98
151	(carbohydrate-deficient glycoprotein adj (disease$ or disorder$ or syndrome$)).ti,ab,kf.	259
152	(congenital disorder$ adj3 glycosylation).ti,ab,kf.	772
153	Lesch-Nyhan Syndrome/	1313
154	((nyhan$ or kelley-seegmiller$) adj (syndrome$ or disorder$ or disease$)).ti,ab,kf.	1019
155	juvenile gout.ti,ab,kf.	26
156	Menkes Kinky Hair Syndrome/	1087
157	menkes$.ti,ab,kf.	1310
158	((copper transport or steely hair or kinky hair) adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	282
159	alpha 1-Antitrypsin Deficiency/	3417
160	(antitrypsin deficien$ or A1AD).ti,ab,kf.	2985
161	(AAT deficien$ or alpha-1 protease deficien$).ti,ab,kf.	477
162	bisalbumin?emi$.ti,ab,kf.	192
163	Lipodystrophy, Congenital Generalized/	175
164	(congenital generali?ed lipodystroph$ or berardinelli$ or bernardnelli$).ti,ab,kf.	344
165	Landau-Kleffner Syndrome/	281
166	(landau-kleffner$ or infantile acquired aphasia$ or acquired epileptic aphasia$).ti,ab,kf.	438
167	(aphasia$ adj5 convulsive).ti,ab,kf.	36
168	Rett Syndrome/	2577
169	(rett$ adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	3127
170	cerebroatrophic hyperammon?emi$.ti,ab,kf.	0

171	Huntington Disease/	12189
172	huntington$.ti,ab,kf.	15654
173	exp Spinocerebellar Ataxias/	6506
174	(spinocerebellar ataxia$ or ataxia$ telangiectasia$ or louis-bar$ syndrome$ or louis-bar$ disease$ or louis-bar$ disorder$ or machado-joseph$ or joseph$ disease$ or joseph$ disorder$ or joseph$ syndrome$).ti,ab,kf.	10284
175	Friedreich Ataxia/	2712
176	((friedreich$ or friedrich$) adj3 ataxia$).ti,ab,kf.	2822
177	spinocerebellar degenerat$.ti,ab,kf.	705
178	"Spinal Muscular Atrophies of Childhood"/	1237
179	(spinal muscular atroph$ or werdnig hoffman$).ti,ab,kf.	4515
180	(dubowitz$ or kugelberg-welander$).ti,ab,kf.	499
181	Bulbar Palsy, Progressive/	853
182	(fazio-londe$ or faziolonde$ or progressive bulbar pals$).ti,ab,kf.	116
183	Pantothenate Kinase-Associated Neurodegeneration/	517
184	(pantothenate kinase-associated neurodegenerat$ or PKAN or hallervorden-spatz$).ti,ab,kf.	604
185	((neurodegeneration adj3 brain iron accumulation) or NBIA$1).ti,ab,kf.	368
186	Olivopontocerebellar Atrophies/	732
187	(olivopontocerebellar atroph$ or OPCA or olivopontocerebellar degenerat$).ti,ab,kf.	820
188	(multiple system atrophy adj5 cerebellar).ti,ab,kf.	164
189	"Diffuse Cerebral Sclerosis of Schilder"/	2622
190	(alper$ adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	179
191	(progressive sclerosing poliodystroph$ or progressive infantile poliodystroph$).ti,ab,kf.	4
192	(diffuse cerebral sclerosis adj5 schilder$).ti,ab,kf.	5
193	Leigh Disease/	1096
194	(leigh$ adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	1296
195	(subacute necrotizing encephalomyelopath$ or subacute necrotising encephalomyelopath$ or sub-acute necrotizing encephalomyelopath$ or sub-acute necrotising encephalomyelopath$ or SNEM).ti,ab,kf.	206
196	(aicardi-gouti?res or aicardia-gouti?res).ti,ab,kf.	348
197	(worster-drought$ or congenital suprabulbar pares$).ti,ab,kf.	37
198	multiple sclerosis/ or multiple sclerosis, chronic progressive/ or multiple sclerosis, relapsing-remitting.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	58674
199	(multiple sclerosis or disseminated sclerosis or encephalomyelitis disseminata$).ti,ab,kf.	65070
200	(demyelinating adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	6979
201	exp Epilepsies, Myoclonic/	4644
202	myoclonic epileps$.ti,ab,kf.	2330
203	((lafora$ or merrf$ or unverricht-lundborg$ or janz$) adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	745
204	lennox-gastaut$.ti,ab,kf.	1169
205	(lennox$ adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	90
206	Spasms, Infantile/	3478
207	(west$ adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	1217
208	Epilepsia Partialis Continua/	238

209	(epilepsia partialis continua or kojevnikov$ or epilepsia partialis continuoa or kozhevnikof$).ti,ab,kf.	473
210	Charcot-Marie-Tooth Disease/	3918
211	(charcot-marie-tooth$ or peroneal muscular atroph$).ti,ab,kf.	4168
212	(progressive neuropathic muscular atroph$ or hereditary peroneal nerve dysfunction$ or peroneal neuropath$).ti,ab,kf.	159
213	"Hereditary Sensory and Motor Neuropathy"/	1263
214	(hereditary sensory adj3 motor neuropath$).ti,ab,kf.	44
215	(hereditary motor adj3 sensory neuropath$).ti,ab,kf.	888
216	Refsum Disease, Infantile/	11
217	Peroxisomal Disorders/	612
218	(infantile refsum or infantile phytanic acid storage).ti,ab,kf.	154
219	Myasthenic Syndromes, Congenital/	518
220	congenital myasth?eni$.ti,ab,kf.	788
221	Muscular Dystrophy, Duchenne/	5093
222	(duchenne muscular dystroph$ or dmd).ti,ab,kf.	10130
223	exp Muscular Dystrophies, Limb-Girdle/	1034
224	(limb-girdle or erb$ muscular dystroph$).ti,ab,kf.	2531
225	(sarcoglycanopath$ or sarcoglycaopath$).ti,ab,kf.	226
226	Osteochondrodysplasias/	5278
227	(osteochondrodysplas$ or schwartz-jampel or chondrodystrophi$ myotoni$ or myotoni$ chondrodystrophi$).ti,ab,kf.	700
228	Myotonia Congenita/	979
229	(congenita$ myotoni$ or myotoni$ congenita$).ti,ab,kf.	870
230	(thomsen$ adj (disease$ or disorder$ or syndrome$)).ti,ab,kf.	102
231	((recessive adj3 myotoni$) or becker$ myotoni$).ti,ab,kf.	144
232	Isaacs Syndrome/	260
233	(isaac$ adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	150
234	neuromyotoni$.ti,ab,kf.	465
235	Myotonic Disorders/	298
236	(paramyotoni$ congenita$ or congenita$ paramyotoni$).ti,ab,kf.	310
237	(eulenburg$ adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	1
238	(myotoni$ adj (disease$ or disorder$ or syndrome$)).ti,ab,kf.	189
239	pseudomyotoni$.ti,ab,kf.	89
240	exp Myopathies, Structural, Congenital/	1236
241	(congenital adj3 myopath$).ti,ab,kf.	1263
242	myopathycongenital.ti,ab,kf.	0
243	((nemaline or rod) adj3 myopath$).ti,ab,kf.	762
244	((central core or mini-core or minicore or multicore or multi-core) adj (disease$ or disorder$ or syndrome$ or myopath$)).ti,ab,kf.	542
245	fiber type disproportion.ti,ab,kf.	157
246	fibre type disproportion.ti,ab,kf.	69
247	Muscular Dystrophies/cn [Congenital]	843
248	(congenital$ adj5 muscular dystroph$).ti,ab,kf.	1916
249	((centronuclear or myotubular) adj myopath$).ti,ab,kf.	665
250	exp Mitochondrial Myopathies/	5247
251	(mitochondrial myopath$ or mitochondrial encephalomyopath$ or chronic progressive external ophthalmopleg$).ti,ab,kf.	3479
252	((melas or kearns-sayre$) adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	1098
253	Quadriplegia/ and spastic$.ti,ab,kf.	676

254	(spastic quadriplegi$ or spastic tetraplegi$).ti,ab,kf.	674
255	Reye Syndrome/	1734
256	(reye$ adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	1804
257	multiple pterygium.ti,ab,kf.	149
258	Hypertension, Pulmonary/ and primary$.ti,ab,kf.	3712
259	((primary pulmonary or precapillary pulmonary or idiopathic pulmonary) adj (hypertension or ht or arterial hypertension)).ti,ab,kf.	2964
260	((primary bronchopulmonary or precapillary bronchopulmonary or idiopathic bronchopulmonary) adj (hypertension or ht or arterial hypertension)).ti,ab,kf.	0
261	((primary lung or precapillary lung or idiopathic lung) adj (hypertension or ht or arterial hypertension)).ti,ab,kf.	2
262	ipah.ti,ab,kf.	868
263	Cardiomyopathy, Dilated/	16170
264	((congestive or dilated) adj cardiomyopath$).ti,ab,kf.	16870
265	exp Cardiomyopathy, Hypertrophic/	15053
266	(hypertrophic adj cardiomyopath$).ti,ab,kf.	12120
267	Cardiomyopathies/cn [Congenital]	177
268	(congenital adj3 cardiomyopath$).ti,ab,kf.	549
269	Cardiomyopathy, Restrictive/	838
270	(restrictive cardiomyopath$ or obliterative cardiomyopath$ or constrictive cardiomyopath$).ti,ab,kf.	1174
271	exp Pulmonary Fibrosis/	21365
272	(pulmonary fibros$ or lung fibros$ or bronchopulmonary fibros$ or fibrosing alveolit$ or interstitial pneumonit$).ti,ab,kf.	19976
273	Respiratory Insufficiency/	31956
274	(respiratory adj (failure$ or insufficienc$)).ti,ab,kf.	33679
275	"Cystic Adenomatoid Malformation of Lung, Congenital"/	937
276	((cystic lung or cystic pulmonary or cystic bronchopulmonary) adj (disease$ or disorder or syndrome$)).ti,ab,kf.	308
277	(bronchogenic cyst$ or bronchopulmonary foregut malformation$).ti,ab,kf.	1618
278	cystic adenomatoid malformation$.ti,ab,kf.	954
279	lobar emphysem$.ti,ab,kf.	601
280	(pulmonary sequestration$ or bronchopulmonary sequestration$ or lung sequestration$ or extralobar sequestration$ or extra-lobar sequestration$ or intralobar sequestration$ or intra-lobar sequestration$).ti,ab,kf.	2064
281	pulmolithias$.ti,ab,kf.	6
282	exp Liver Failure/	24621
283	((liver$1 or hepatic) adj3 fail$).ti,ab,kf.	26355
284	exp Liver Cirrhosis/	88269
285	(cirrhosis adj3 liver$1).ti,ab,kf.	37506
286	Hepatic Veno-Occlusive Disease/	1297
287	((veno-occlusive or venous occlusive) adj (disease$ or syndrome$ or disorder$)).ti,ab,kf.	2253
288	Exocrine Pancreatic Insufficiency/	2035
289	(swachman-diamond or shwachman-bodian or schwachmann-diamond or shwachmann-bodian).ti,ab,kf.	79
290	Granulomatosis with Polyangiitis/	7185
291	wegener$ granulomatos$.ti,ab,kf.	6138
292	(granulomatos$ adj3 polyangiit$).ti,ab,kf.	1582
293	Osteolysis, Essential/	835
294	essential osteolys$.ti,ab,kf.	26

295	((gorham$ or gorham-stout$ or vanishing bone or phantom bone) adj (disease$ or syndrome$ or disorder)).ti,ab,kf.	261
296	((arc or arthrogryposis renal dysfunction cholestasis) adj (disease$ or syndrome$ or disorder)).ti,ab,kf.	89
297	Cerebral Hemorrhage/cn [Congenital]	120
298	Cerebral Hemorrhage, Traumatic/	358
299	Cerebral Hemorrhage/ and Birth Injuries.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	222
300	(cerebral h?emorrhage$ and (birth$ adj3 injur$)).ti,ab,kf.	47
301	Asphyxia Neonatorum/	7865
302	asphyxia neonatorum.ti,ab,kf.	1426
303	((perinatal$ or neonatal$ or birth$) adj3 asphyxia$).ti,ab,kf.	4627
304	Rubella Syndrome, Congenital/	761
305	congenital rubella.ti,ab,kf.	1614
306	exp Cytomegalovirus Infections/cn [Congenital]	1717
307	(congenital adj (cytomegalovirus$ or cmv)).ti,ab,kf.	1507
308	Chickenpox/cn [Congenital]	262
309	exp Herpes Zoster/cn [Congenital]	37
310	Herpesvirus 3, Human/ and congenital$.ti,ab,kf.	104
311	((congenital or fetal or foetal) adj3 (varicella$ or chicken pox$ or VZV)).ti,ab,kf.	282
312	Toxoplasmosis, Congenital/	2749
313	congenital toxoplasmos$.ti,ab,kf.	1834
314	exp Hypoxia, Brain/	12700
315	((brain$ or cerebral) adj3 hypoxi$).ti,ab,kf.	6546
316	Renal Insufficiency/cn [Congenital]	16
317	Acute Kidney Injury/cn [Congenital]	18
318	Renal Insufficiency, Chronic/cn [Congenital]	7
319	Kidney Failure, Chronic/cn [Congenital]	47
320	(congenital$ adj3 (kidney failure$ or renal failure$ or kidney insufficienc$ or renal insufficienc$)).ti,ab,kf.	75
321	(congenital$ adj3 (kidney disease$ or renal disease$)).ti,ab,kf.	243
322	Anencephaly/	3213
323	(anencephal$ or meroanencephal$ or craniorachischis$).ti,ab,kf.	3016
324	(aprosencephal$ adj3 open cranium).ti,ab,kf.	0
325	Encephalocele/	3791
326	(encephalocele$ or cranium bifidum).ti,ab,kf.	2217
327	Dandy-Walker Syndrome/	1101
328	dandy-walker$.ti,ab,kf.	1217
329	Acrocallosal Syndrome/	83
330	(acrocallosal or acro-callosal or acrocolossal or acro colossal).ti,ab,kf.	98
331	Aicardi Syndrome/	81
332	(aicardi$ adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	315
333	Holoprosencephaly/	1175
334	(holoprosencephal$ or arhinencephal$ or holosprosencephal$).ti,ab,kf.	1934
335	Hydranencephaly/	480
336	(hydranencephal$ or hydrancephal$ or hydroanencephal$).ti,ab,kf.	538
337	exp Lissencephaly/	491
338	Microcephaly/	4982

339	(lissencephal$ or walker-warburg$ or miller-dieker$ or norman-robert$ or microlissencephal$).ti,ab,kf.	1775
340	((fukuyama$ or muscle-eye-brain) adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	195
341	"Malformations of Cortical Development"/	1217
342	(microgyria$ or microgyrus or micro-gyria$ or micro-gyrus).ti,ab,kf.	191
343	(pachygyria$ or pachgyria$).ti,ab,kf.	457
344	agyria$.ti,ab,kf.	204
345	Septo-Optic Dysplasia/	193
346	((septo-optic or septooptic) adj dysplas$).ti,ab,kf.	431
347	de morsier$.ti,ab,kf.	77
348	(schizencephal$ or schizzencephal$).ti,ab,kf.	443
349	Arnold-Chiari Malformation/	3535
350	chiari$ malformation$.ti,ab,kf.	2102
351	Truncus Arteriosus, Persistent/	892
352	(truncus or common arterial trunk$).ti,ab,kf.	2357
353	"Transposition of Great Vessels"/	7449
354	((transposition$ or dextrotransposition$ or dtransposition$ or levotransposition$ or ltransposition$) adj3 (great arter$ or main arter$ or aorta$ or pulmonary arter$ or great vessel$ or main vessel$)).ti,ab,kf.	6303
355	(dextro-tga or d-tga or levo-tga or l-tga).ti,ab,kf.	261
356	(double inlet adj3 ventricle$).ti,ab,kf.	329
357	DILV.ti,ab,kf.	33
358	single ventricle$.ti,ab,kf.	2783
359	Heart Defects, Congenital/ and Atrial Appendage.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	181
360	(isomerism adj3 atrial appendage$).ti,ab,kf.	29
361	(aspleni$ or polyspleni$ or poly-spleni$).ti,ab,kf.	2005
362	"Tetralogy of Fallot"/	9588
363	(tetralogy adj3 fallot$).ti,ab,kf.	9066
364	Eisenmenger Complex/	1139
365	(eisenmenger$ or tardive cyanos$ or eisenmeyer$).ti,ab,kf.	1219
366	(pentalogy adj3 fallot$).ti,ab,kf.	71
367	Pulmonary Atresia/	1412
368	((pulmonary or bronchopulmonary or lung$) adj3 atresia$).ti,ab,kf.	3230
369	Tricuspid Atresia/	580
370	((tricuspid or tri) adj3 atresia$).ti,ab,kf.	1498
371	Ebstein Anomaly/	1997
372	(ebstein$ adj (anomal$ or malformation$)).ti,ab,kf.	1933
373	Hypoplastic Left Heart Syndrome/	2350
374	(hypoplastic left heart adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	2640
375	((aortic or aorta$) adj3 atresia$).ti,ab,kf.	605
376	(mitral adj3 atresia$).ti,ab,kf.	329
377	((absence$ or absent$) adj3 (aorta$ or aortic)).ti,ab,kf.	507
378	(aplas$ adj3 (aorta$ or aortic)).ti,ab,kf.	8
379	exp Aortic Aneurysm/cn [Congenital]	258
380	(((aorta$ or aortic) adj3 aneurys$) and congenital$).ti,ab,kf.	680
381	(hypoplas$ adj3 (aorta$ or aortic)).ti,ab,kf.	955

382	(convulsion$ adj3 (aorta$ or aortic)).ti,ab,kf.	2
383	(persistent right adj3 (aorta$ or aortic)).ti,ab,kf.	76
384	((anomalous pulmonary venous or anamolous pulmonary venous) adj (connection or drainage or return)).ti,ab,kf.	2680
385	((absence$ or absent$) adj3 vena$ cava$).ti,ab,kf.	308
386	(persistent left adj3 cardinal vein$).ti,ab,kf.	5
387	Scimitar Syndrome/	754
388	((scimitar$ or pulmonary venolobar) adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	573
389	(arteriovenous malformations/ or intracranial arteriovenous malformations/) and bilateral.ti,ab,kf.	432
390	((bilateral AV or bilateral arteriovenous or bilateral arterio-venous) adj3 malform$).ti,ab,kf.	15
391	((trachea$ or windpipe$ or wind-pipe$) adj3 atresia$).ti,ab,kf.	122
392	Tracheal Stenosis/	5949
393	((trachea$ or laryngotrachea$ or glottic or subglottic or sub-glottic) adj3 stenosis).ti,ab,kf.	4914
394	Bronchopulmonary Dysplasia/	4258
395	((lung$ or pulmonary or bronchopulmonary) adj3 (hypoplas$ or dysplas$)).ti,ab,kf.	9671
396	((absence$ or absent$) adj3 (esophag$ or oesophag$ or foodpipe or food-pipe$ or gullet$)).ti,ab,kf.	481
397	Intestinal Atresia/	2181
398	(duoden$ adj3 atresia$).ti,ab,kf.	752
399	((absence$ or absent$) adj3 (intestin$ or gastrointestin$)).ti,ab,kf.	948
400	((intestin$ or gastrointestin$) adj3 atresia$).ti,ab,kf.	1133
401	((intestin$ or gastrointestin$) adj3 stenos$).ti,ab,kf.	664
402	(cloaca$ adj3 (abnor$ or malform$ or anomal$)).ti,ab,kf.	412
403	(cloaca$ adj3 exopthalmo$).ti,ab,kf.	0
404	Biliary Atresia/	2992
405	(biliary adj3 atresia$).ti,ab,kf.	3989
406	(extrahepatic ductopen$ or extra-hepatic ductopen$ or progressive obliterative cholangiopath$).ti,ab,kf.	5
407	(biliary adj3 hypoplas$).ti,ab,kf.	72
408	(alagille$ adj3 atresia$).ti,ab,kf.	32
409	((absence$ or absent$) adj3 kidney$).ti,ab,kf.	880
410	(potter$ adj (sequence$ or syndrome$ or disease$ or disorder$)).ti,ab,kf.	316
411	Oligohydramnios/	1294
412	oligohydramn$.ti,ab,kf.	2451
413	Multicystic Dysplastic Kidney/	513
414	((kidney$ or renal) adj3 dysplas$).ti,ab,kf.	3089
415	((meckel$ or meckelgruber$ or gruber$) adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	475
416	dysencephalia splanchnocystica$.ti,ab,kf.	8
417	(pena-shokeir$ or penn-shokeir$).ti,ab,kf.	104
418	(larsen$ adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	256
419	Acrocephalosyndactylia/	1564
420	acrocephalosyndactyl$.ti,ab,kf.	290
421	(pfeiffer$ adj (syndrome$ or disease$ or syndrome$)).ti,ab,kf.	352
422	Short Rib-Polydactyly Syndrome/	143
423	short rib$1.ti,ab,kf.	300

424	(saldino-noonan$ or majewski$ or verma-naumoff$ or beemer-langer$).ti,ab,kf.	196
425	(jeune$ adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	180
426	asphyxiating thoracic dysplas$.ti,ab,kf.	53
427	exp Chondrodysplasia Punctata/	1082
428	chondrodysplasia punctata$.ti,ab,kf.	709
429	((conradi$ or h?nermann$ or happle$) adj3 (syndrome$ or disease$ or disorder$)).ti,ab,kf.	197
430	Osteogenesis Imperfecta/	4623
431	osteogenesis imperfecta.ti,ab,kf.	4407
432	((brittle bone or lobstein$) adj (disease$ or disorder$ or syndrome$)).ti,ab,kf.	218
433	Osteochondrodysplasias/	5278
434	(spondyloepimetaphyseal or spondyloepiphyseal or spendylo metaphyseal).ti,ab,kf.	683
435	Hernia, Umbilical/	3894
436	(omphalocele$ or omphalocoele$ or exomphalos).ti,ab,kf.	2315
437	(hernia$ adj3 umbilic$).ti,ab,kf.	2123
438	Gastroschisis/	1245
439	gastroschis$.ti,ab,kf.	2168
440	Ichthyosis, Lamellar/	758
441	(lamellar$ adj3 ichthyos$).ti,ab,kf.	395
442	((harlequin$ or harloquin$) adj3 (ichthyos$ or baby or babies or f?etus$)).ti,ab,kf.	248
443	(ichthyosis congenita$ or ichthyosis fetalis or keratosis diffusa fetalis).ti,ab,kf.	82
444	exp Epidermolysis Bullosa/	4916
445	epidermolysis bullosa$.ti,ab,kf.	4833
446	(johanson-blizzard$ or johanna-blizzard$).ti,ab,kf.	96
447	Xeroderma Pigmentosum/	3573
448	xeroderma pigmentosum.ti,ab,kf.	4191
449	Ectodermal Dysplasia/	3398
450	lacrimo-auriculo-dento-digital.ti,ab,kf.	54
451	ectodermal dysplas$.ti,ab,kf.	2652
452	((ladd or eec) adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	236
453	Sturge-Weber Syndrome/	1250
454	(sturge-weber or encephalotrigeminal angiomatos$).ti,ab,kf.	1423
455	Fetal Alcohol Spectrum Disorders/	4029
456	f?etal alcohol.ti,ab,kf.	3685
457	Pierre Robin Syndrome/	1344
458	pierre robin$.ti,ab,kf.	1095
459	Acrocephalosyndactylia/	1564
460	(acrocephalosyndact$ or acrocephalopolysyndact$).ti,ab,kf.	327
461	((apert$ or crouzon$ or saethre-chotzen$ or noack$ or carpenter$ or sakati-nyhan-tisdale$ or goodman$) adj (syndrome$ or disorder$ or disease$)).ti,ab,kf.	1836
462	Fraser Syndrome/	38
463	(fraser$ adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	194
464	cryptophthalmos.ti,ab,kf.	190
465	(cyclopia$1 or cyclocephal$ or synophthalmi$).ti,ab,kf.	596
466	Goldenhar Syndrome/	738
467	(goldenhar$ or oculo-auriculo-vertebral).ti,ab,kf.	791
468	Mobius Syndrome/	331

469	((m?bius$ or moebius$) adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	542
470	Orofaciodigital Syndromes/	564
471	(orofaciodigital or oro-facial-digital or oral-facial-digital or papillon-league$ or psaume$).ti,ab,kf.	457
472	(robin$ adj (syndrome$ or disorder$ or disease$)).ti,ab,kf.	733
473	(freeman-sheldon$ or distal arthrogrypos$ or craniocarpotarsal dysplas$ or craniocarpotarsal dystroph$ or canio-carpo-tarsal or windmill-vane-hand$ or whistling-face).ti,ab,kf.	403
474	De Lange Syndrome/	818
475	((de lange$ or bushy$) adj (syndrome$ or disorder$ or disease$)).ti,ab,kf.	875
476	amsterdam dwarfism.ti,ab,kf.	5
477	(aarskog or faciodigitogenital or facio-digito-genital or facial digital genital or shawl scrotum or faciogenital or facio-genital).ti,ab,kf.	191
478	Cockayne Syndrome/	876
479	(cockayne$ or neill-dingwall$).ti,ab,kf.	1313
480	(cerebro-oculo-facio-skeletal or cerebro-oculo-facial-skeletal).ti,ab,kf.	67
481	(dubowitz$ adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	103
482	(robinow$ or robinhow$).ti,ab,kf.	200
483	(f?etal face or f?etal facies or f?etal faces or acral dysostos$ or mesomelic dwarfism or covesdem$).ti,ab,kf.	243
484	Silver-Russell Syndrome/	210
485	(silver-russell$ or russell-silver$).ti,ab,kf.	633
486	(silver$ adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	337
487	((seckel$ or harper$) adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	264
488	(microcephalic primordial dwarfism or bird-headed dwarf$ or virchow-seckel dwarfism).ti,ab,kf.	81
489	Smith-Lemli-Opitz Syndrome/	580
490	(smith-lemli-opitz$ or dehydrocholesterol reductase deficien$).ti,ab,kf.	804
491	Prader-Willi Syndrome/	2916
492	(prader-willi$ or pradar-willi$).ti,ab,kf.	3200
493	Rubinstein-Taybi Syndrome/	490
494	(rubinstein-taybi$ or rubenstein-tabyii$ or broad thumb-hallux).ti,ab,kf.	616
495	((rubinstein$ or rubenstein$) adj2 (syndrome$ or disease$ or disorder$)).ti,ab,kf.	616
496	Nephritis, Hereditary/	1980
497	(alport$ adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	1702
498	(hereditary nephritis or h?emorrhagic familial nephritis).ti,ab,kf.	326
499	(hereditary deafness adj3 nephropath$).ti,ab,kf.	0
500	(h?ematuria adj3 nephropath$ adj3 deafness).ti,ab,kf.	4
501	Laurence-Moon Syndrome/	601
502	laurence-moon$.ti,ab,kf.	489
503	Bardet-Biedl Syndrome/	626
504	(bardet-biedl$ or biedl-bardet$).ti,ab,kf.	1050
505	Zellweger Syndrome/	651
506	zellweger$.ti,ab,kf.	1055
507	((cerebrohepatorenal or cerebro-hepato-renal) adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	181
508	(edward$ adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	297
509	"trisomy 18".ti,ab,kf.	2276
510	(patau$ adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	210
511	("trisomy 13" or "trisomy D").ti,ab,kf.	1469
512	"trisomy 22".ti,ab,kf.	293

513	"trisomy 9".ti,ab,kf.	291
514	"trisomy 10".ti,ab,kf.	94
515	duplication syndrome$.ti,ab,kf.	311
516	(("chromosome 8" or "chr 8") adj5 duplicat$).ti,ab,kf.	43
517	Chromosome Duplication/	820
518	exp X Chromosome/ab [Abnormalities]	1
519	exp X Chromosome/ and duplicat$.ti,ab,kf.	954
520	(("chromosome x" or "chr x") and duplicat$).ti,ab,kf.	84
521	(chromosom$ abnormality adj5 duplicat$).ti,ab,kf.	15
522	"tetrasomy 5p".ti,ab,kf.	8
523	(tetrasomy adj3 mosaic$).ti,ab,kf.	128
524	Chromosomes, Human, Pair 5/ and Mosaicism.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	47
525	Tetrasomy/	67
526	Trisomy/ and (chromosomes, human, pair 9/ or chromosomes, human, pair 10/ or chromosomes, human, pair 13/ or Chromosomes, Human, Pair 18/ or chromosomes, human, pair 22/)	3146
527	Chromosome Deletion/ and Chromosomes, Human, Pair 4/	513
528	(delet$ adj5 short arm adj5 "chrom$ 4").ti,ab,kf.	86
529	Wolf-Hirschhorn Syndrome/	135
530	((wolf-hirschhorn$ or wolff hirschorn$ or chromosome deletion dillan$ or pitt-rogers-dank$ or pitt$) adj3 (syndrome$ or disease$ or disorder$)).ti,ab,kf.	693
531	Cri-du-Chat Syndrome/	691
532	((cri du chat$ or crying cat$ or 5p or lejeune$) adj3 (syndrome$ or disease$ or disorder$)).ti,ab,kf.	533
533	Jacobsen Distal 11q Deletion Syndrome/	68
534	((jacobsen$ or 11q deletion) adj5 (syndrome$ or disease$ or disorder$)).ti,ab,kf.	127
535	exp Monosomy/ and Chromosomes, Human, Pair 9/	774
536	(9p minus or 9p deletion).ti,ab,kf.	111
537	(alfi$ adj (syndrome$ or disease$ or disorder$)).ti,ab,kf.	3
538	(degouchy$ or de gouchy$ or degrouchy$ or de grouchy$).ti,ab,kf.	13
539	distal 18q.ti,ab,kf.	17
540	Hypoventilation/cn [Congenital]	223
541	(ondine$ curse or congenital central hypoventilation or primary alveolar hypoventilation).ti,ab,kf.	684
542	Graft vs Host Disease/ and (Chronic Disease/ or chronic$.ti,ab,kf.)	7221
543	(((graft vs host or graft versus host) adj (disease$ or syndrome$ or disorder)) and chronic$).ti,ab,kf.	7423
544	exp HIV/	98462
545	exp HIV Infections/	279925
546	(HIV or human immunodeficiency virus$).ti,ab,kf.	293400
547	(htlv or human t-lymphotropic virus$ or human t cell lymphotropic virus$).ti,ab,kf.	13578
548	(acquired immune deficiency syndrome$ or acquired immunodeficiency syndrome$).ti,ab,kf.	24909
549	(AIDS adj3 (virus$ or infection$)).ti,ab,kf.	8102
550	(AIDS adj (related or associated)).ti,ab,kf.	9356
551	exp Neoplasms/	3290987

552	(cancer$ or carcin$ or tumor$ or tumour$ or neoplas$ or adenocarcin$ or oncol$ or malignan$).ti,ab,kf.	2947882
553	Cystic Fibrosis/	34771
554	(cystic fibrosis or fibrocystic or fibro-cystic or mucoviscidosis or cf).ti,ab,kf.	59866
555	Cerebral Palsy/	19638
556	(cerebr$ adj3 pals$).ti,ab,kf.	19444
557	Muscle Spasticity/	9059
558	spasticit$.ti,ab,kf.	9624
559	Quadriplegia/	8151
560	(spastic$ and (quadripleg$ or tetrapleg$)).ti,ab,kf.	1159
561	exp Renal Insufficiency/	166861
562	((kidney$ or renal) adj3 (failure$ or insufficienc$)).ti,ab,kf.	114282
563	(end stage adj3 (kidney or renal)).ti,ab,kf.	35463
564	(("stage 5" or "stage V") adj3 (kidney or renal)).ti,ab,kf.	448
565	(ESRD or ESKD or ESRF or ESKF or CRF or CKF).ti,ab,kf.	28165
566	1 or 2 or 3 or 4 or 5 or 6	3998038
567	or/14-565	5194249
568	13 and 566 and 567	11446
569	568	11446
570	limit 569 to yr="2000 -Current"	7609

Appendix 3: Systematic Review and Meta-Analysis - Data Extraction Form

Article Information:	
Date of data extraction	
Article Title	
Article Author(s)	
Date of publication	
Study Characteristics:	
Study aim(s)/objective(s)	
Study design	
Country of study	
Recruitment procedures used	
Study inclusion/exclusion criteria	
Outcome Measures:	
Anxiety definition (scale used, self-/proxy-reported? cut-off point used)	
Depression definition (scale used, self-/proxy-reported? cut-off point used)	
Participant Characteristics:	
Sample size	
Age (range, mean, standard deviation)	
Sex (n, %)	
Ethnicity (n, %)	
LLC diagnosis	
Results:	
Anxiety prevalence/incidence	
Depression prevalence/incidence	
Conclusions:	
Key conclusions	
Limitations	

Appendix 4: Systematic Review and Best Evidence Synthesis - Data Extraction Form

Article Information:	
Date of data extraction	
Article Title	
Article Author(s)	
Date of publication	
Study Characteristics:	
Study aim(s)/objective(s)	
Study design	
Country of study	
Recruitment procedures used	
Study inclusion/exclusion criteria	
Outcome Measures:	
Anxiety assessment tool	
Depression assessment tool	
Risk Factor Assessment Tools:	
Sociodemographic factors	
Clinical factors	
Other factors	
Participant Characteristics:	
Sample size	
Age (range, mean, standard deviation)	
Sex (n, %)	
Ethnicity (n, %)	
LLC diagnosis	
Anxiety Analysis Methods & Results:	
Sociodemographic factors	
Clinical factors	
Other factors	
Depression Analysis Methods & Results:	
Sociodemographic factors	
Clinical factors	
Other factors	
Conclusions:	
Key conclusions	
Limitations	

Appendix 5: Read Code and ICD-10 Code Lists – Life-Limiting Conditions

Read Codes

Medcode	Read Code	Description
4673	0	Encephalocele
4796	0	Motor neurone disease
5431	0	Spina bifida without mention of hydrocephalus
6515	0	Micrencephaly
9722	0	Meningomyelocele
25282	0	Meningocele - cranial
27686	0	Meningocele - cerebral
28955	0	Myotonia congenita (Thomsen's disease)
36433	0	Amyotrophic lateral sclerosis
44592	0	Cerebral degeneration other disease NOS
44939	0	Hydromyelia
46128	0	Flaccid tetraplegia
48609	0	Spina bifida without hydrocephalus - closed
52130	0	Meningoencephalocele
52683	0	Myelocele with hydrocephalus
53929	0	Spinal meningocele of unspecified site
54714	0	Congenital absence of brain
55850	0	Cardiomyopathy in disease EC
56288	0	Cerebral degenerations usually manifest in childhood
56362	0	Spina bifida with stenosis of aqueduct of Sylvius
57611	0	Meningomyelocele NOS
58938	0	Cardiomyopathy due to drugs and other external agents
59956	0	Childhood cerebral degenerations NOS
62376	0	Atresia of aorta
65246	0	Spina bifida without hydrocephalus - closed NOS
65778	0	Encephalocoele of orbit
65935	0	Asphyxiating thoracic dysplasia
67351	0	Cervical spinal meningocele
67878	0	Hydromyelocele
68221	0	Cervical spina bifida without mention of hydrocephalus
72018	0	Cervical spina bifida without hydrocephalus - closed
73055	0	Encephalocele NOS
73608	0	Spina bifida without hydrocephalus - open NOS
73712	0	Myelocele NOS
91600	0	Thoracic spinal meningocele
93372	0	Cerebral degeneration in diseases EC
94486	0	Chronic type 2 respiratory failure
94598	0	Cervical myelocele
94793	0	Chronic kidney disease stage 3 with proteinuria
94946	0	Chronic type 1 respiratory failure
95122	0	Chronic kidney disease stage 4 with proteinuria

Medcode	Read Code	Description
95123	0	Chronic kidney disease stage 3 without proteinuria
95145	0	CKD stage 3 with proteinuria
95175	0	Chronic kidney disease stage 3A without proteinuria
95176	0	CKD stage 3A without proteinuria
95177	0	Chronic kidney disease stage 3B without proteinuria
95178	0	Chronic kidney disease stage 3B with proteinuria
95179	0	Chronic kidney disease stage 3B
95180	0	CKD stage 3B with proteinuria
95188	0	CKD stage 3 without proteinuria
95405	0	Chronic kidney disease stage 5 without proteinuria
95406	0	Chronic kidney disease stage 4 without proteinuria
95408	0	Chronic kidney disease stage 3A with proteinuria
95478	0	Thoracic spina bifida without hydrocephalus - open
95508	0	Chronic kidney disease stage 5 with proteinuria
95571	0	CKD stage 3A with proteinuria
96709	0	Thoracic spina bifida without mention of hydrocephalus
96860	0	Cerebral degeneration in Parkinson's disease
97422	0	Cerebral degeneration in other disease EC
97587	0	CKD stage 4 without proteinuria
97683	0	CKD stage 5 without proteinuria
98020	0	Cardiomyopathy in diseases EC, NOS
99160	0	CKD stage 5 with proteinuria
99281	0	Spina bifida without hydrocephalus - open
99299	0	Thoracic meningomyelocele
99312	0	CKD stage 4 with proteinuria
99332	0	Meningomyelocele of unspecified site
100582	0	Encephalocele of other specified site
100633	0	CKD stage 3B without proteinuria
101013	0	Spina bifida without hydrocephalus, site unspecified
101312	0	Hydroencephalocele
102628	0	Spina bifida with hydrocephalus of late onset
103527	0	Hydromeningocele - cranial
104619	0	Chronic kidney disease stage 3
104963	0	Chronic kidney disease stage 4
105151	0	Chronic kidney disease stage 5
107144	0	Cervical meningomyelocele
107377	0	Cervical myelocystocele
108773	0	Cerebral degeneration in disease NOS
109243	0	Cervical spina bifida with hydrocephalus
109657	0	CKD with GFR category G3b & albuminuria category A2
109804	0	CKD with GFR category G3a & albuminuria category A1
109805	0	CKD with GFR category G3a & albuminuria category A2
109904	0	CKD with GFR category G4 & albuminuria category A2
109905	0	CKD with GFR category G3a & albuminuria category A3
109963	0	CKD with GFR category G3b & albuminuria category A1

Medcode	Read Code	Description
109980	0	CKD with GFR category G4 & albuminuria category A1
109981	0	CKD with GFR category G5 & albuminuria category A2
109990	0	CKD with GFR category G3b & albuminuria category A3
110133	0	CKD with GFR category G5 & albuminuria category A1
110467	0	CKD with GFR category G5 & albuminuria category A3
110626	0	CKD with GFR category G4 & albuminuria category A3
46733	0	Beta major thalassaemia
45151	0	Thalassaemia major - Cooley's anaemia
31405	0	Thalassaemia major NEC
16118	1	Dystrophia myotonica (Steinert's disease)
31775	1	Myelocele
94965	1	Chronic kidney disease stage 3A
21643	2	Beta thalassaemia
31663	2826	O/E - salaam attack
48991	5136	X-ray metastasis control
28355	7904	Other correction of transposition of great vessels
27475	13M3.00	Sudden infant death
8600	1D18.00	Pain from metastases
19692	1J02.00	Suspected leukaemia
19083	1J04.00	Suspected lymphoma
100035	1J0L.00	Suspected malignant mesothelioma
106858	1JW..00	Suspected cystic fibrosis
14242	42D4.00	RBC's - sickle cells present
2835	43C3.11	HIV positive
32351	44a4.00	Squamous cell carcinoma antigen level
49341	4D56.00	Pleural fluid: malignant cells
13575	4F32.00	Ascitic fluid: malignant cells
70709	4L49.00	Prion protein markers for Creutzfeldt-Jakob disease
40991	4M2..00	Lymphoma staging system
60918	4M20.00	Lymphoma stage I
94935	4M21.00	Lymphoma stage II
32240	4M22.00	Lymphoma stage III
71672	4M23.00	Lymphoma stage IV
37793	4M4..00	FIGO staging of gynaecological malignancy
67248	5A12.00	Thyroid tumour/metast irradiat
62951	5A15.00	Bone tumour/metast.irradiat.
100430	66k..00	Cystic fibrosis monitoring
64470	7904y00	Other correction of transposition of great vessels OS
38411	7904z00	Other correction of transposition of great vessels NOS
108021	790Jz00	Other repair of transposition of great arteries NOS
96637	790M400	Biventricular repair of hypoplastic left heart syndrome
48697	7A65000	Transposition of valve of vein
30283	7B2C700	Intravesical install chemotherapeutic agent for malignancy
18270	7G03K00	Excision malignant skin tumour
20699	7H19500	Closure of gastrochisis

Medcode	Read Code	Description
11773	7L1A.11	Dialysis for renal failure
38286	A411.00	Jakob-Creutzfeldt disease
109288	A411000	Sporadic Creutzfeldt-Jakob disease
52677	A412.00	Subacute sclerosing panencephalitis
46110	A75..12	Pfeiffer's disease
25657	A752.00	Pfeiffer's disease
69766	A788200	HIV infection with persistent generalised lymphadenopathy
67575	A788W00	HIV disease resulting in unspecified malignant neoplasm
71450	A788X00	HIV disease resulting/unspcf infectious+parasitic disease
37006	A789000	HIV disease resulting in mycobacterial infection
66368	A789100	HIV disease resulting in cytomegaloviral disease
23951	A789200	HIV disease resulting in candidiasis
27641	A789300	HIV disease resulting in Pneumocystis carinii pneumonia
104717	A789311	HIV disease resulting in Pneumocystis jirovecii pneumonia
50076	A789400	HIV disease resulting in multiple infections
27853	A789500	HIV disease resulting in Kaposi's sarcoma
108054	A789511	HIV disease resulting in Kaposi sarcoma
44617	A789600	HIV disease resulting in Burkitt's lymphoma
66367	A789700	HIV dis resulting oth types of non-Hodgkin's lymphoma
105324	A789800	HIV disease resulting in multiple malignant neoplasms
65117	A789900	HIV disease resulting in lymphoid interstitial pneumonitis
8281	A789A00	HIV disease resulting in wasting syndrome
51708	A789X00	HIV dis reslt/oth mal neopl/lymph,h'matopoetc+reltd tissu
107807	AyuC100	[X]HIV disease resulting in other viral infections
102117	AyuC300	[X]HIV disease resulting in multiple infections
104134	AyuC400	[X]HIV disease resulting/other infectious+parasitic diseases
69767	AyuC600	[X]HIV disease resulting in other non-Hodgkin's lymphoma
96751	AyuCB00	[X]HIV disease result/haematological+immunologic abnorms,NEC
102252	AyuCC00	[X]HIV disease resulting in other specified conditions
2755	B....11	Cancers
19415	B0...00	Malignant neoplasm of lip, oral cavity and pharynx
24374	B0...11	Carcinoma of lip, oral cavity and pharynx
14712	B00..00	Malignant neoplasm of lip
9984	B00..11	Carcinoma of lip
73962	B000.00	Malignant neoplasm of upper lip, vermilion border
66270	B000000	Malignant neoplasm of upper lip, external
50296	B000100	Malignant neoplasm of upper lip, lipstick area
98740	B000z00	Malignant neoplasm of upper lip, vermilion border NOS
67446	B001.00	Malignant neoplasm of lower lip, vermilion border
66384	B001000	Malignant neoplasm of lower lip, external
95480	B001100	Malignant neoplasm of lower lip, lipstick area
101707	B001z00	Malignant neoplasm of lower lip, vermilion border NOS
99493	B002.00	Malignant neoplasm of upper lip, inner aspect
111289	B002000	Malignant neoplasm of upper lip, buccal aspect
99001	B002100	Malignant neoplasm of upper lip, frenulum

Medcode	Read Code	Description
98500	B002200	Malignant neoplasm of upper lip, mucosa
90610	B002300	Malignant neoplasm of upper lip, oral aspect
100721	B002z00	Malignant neoplasm of upper lip, inner aspect NOS
71147	B003.00	Malignant neoplasm of lower lip, inner aspect
67504	B003000	Malignant neoplasm of lower lip, buccal aspect
91843	B003100	Malignant neoplasm of lower lip, frenulum
89909	B003200	Malignant neoplasm of lower lip, mucosa
94441	B003300	Malignant neoplasm of lower lip, oral aspect
96782	B003z00	Malignant neoplasm of lower lip, inner aspect NOS
61692	B004.00	Malignant neoplasm of lip unspecified, inner aspect
73614	B004000	Malignant neoplasm of lip unspecified, buccal aspect
68399	B004200	Malignant neoplasm of lip unspecified, mucosa
100144	B004300	Malignant neoplasm of lip, oral aspect
96783	B005.00	Malignant neoplasm of commissure of lip
18882	B006.00	Malignant neoplasm of overlapping lesion of lip
37553	B007.00	Malignant neoplasm of lip, unspecified
100906	B00z000	Malignant neoplasm of lip, unspecified, external
94251	B00z100	Malignant neoplasm of lip, unspecified, lipstick area
69761	B00zz00	Malignant neoplasm of lip, vermilion border NOS
10283	B01..00	Malignant neoplasm of tongue
43431	B010.00	Malignant neoplasm of base of tongue
69671	B010.11	Malignant neoplasm of posterior third of tongue
34409	B010000	Malignant neoplasm of base of tongue dorsal surface
91035	B010z00	Malignant neoplasm of fixed part of tongue NOS
43642	B011.00	Malignant neoplasm of dorsal surface of tongue
107258	B011100	Malignant neoplasm of midline of tongue
43781	B011z00	Malignant neoplasm of dorsum of tongue NOS
36161	B012.00	Malignant neoplasm of tongue, tip and lateral border
62840	B013.00	Malignant neoplasm of ventral surface of tongue
102142	B013000	Malignant neoplasm of anterior 2/3 of tongue ventral surface
63979	B013100	Malignant neoplasm of frenulum linguae
38488	B013z00	Malignant neoplasm of ventral tongue surface NOS
58121	B014.00	Malignant neoplasm of anterior 2/3 of tongue unspecified
37096	B015.00	Malignant neoplasm of tongue, junctional zone
24852	B016.00	Malignant neoplasm of lingual tonsil
47205	B017.00	Malignant overlapping lesion of tongue
41530	B01y.00	Malignant neoplasm of other sites of tongue
40557	B01z.00	Malignant neoplasm of tongue NOS
20292	B02..00	Malignant neoplasm of major salivary glands
4388	B020.00	Malignant neoplasm of parotid gland
51786	B021.00	Malignant neoplasm of submandibular gland
70928	B022.00	Malignant neoplasm of sublingual gland
70696	B02y.00	Malignant neoplasm of other major salivary glands
50475	B02z.00	Malignant neoplasm of major salivary gland NOS
43400	B03..00	Malignant neoplasm of gum

Medcode	Read Code	Description
32024	B030.00	Malignant neoplasm of upper gum
49360	B031.00	Malignant neoplasm of lower gum
101753	B03y.00	Malignant neoplasm of other sites of gum
93218	B03z.00	Malignant neoplasm of gum NOS
20092	B04..00	Malignant neoplasm of floor of mouth
45408	B040.00	Malignant neoplasm of anterior portion of floor of mouth
45986	B041.00	Malignant neoplasm of lateral portion of floor of mouth
17912	B042.00	Malignant neoplasm, overlapping lesion of floor of mouth
56709	B04y.00	Malignant neoplasm of other sites of floor of mouth
36716	B04z.00	Malignant neoplasm of floor of mouth NOS
14792	B05..00	Malignant neoplasm of other and unspecified parts of mouth
31364	B050.00	Malignant neoplasm of cheek mucosa
30402	B050.11	Malignant neoplasm of buccal mucosa
103796	B051.00	Malignant neoplasm of vestibule of mouth
95772	B051000	Malignant neoplasm of upper buccal sulcus
97530	B051100	Malignant neoplasm of lower buccal sulcus
37590	B052.00	Malignant neoplasm of hard palate
40292	B053.00	Malignant neoplasm of soft palate
37516	B054.00	Malignant neoplasm of uvula
70819	B055.00	Malignant neoplasm of palate unspecified
96003	B055000	Malignant neoplasm of junction of hard and soft palate
69951	B055100	Malignant neoplasm of roof of mouth
28559	B055z00	Malignant neoplasm of palate NOS
37724	B056.00	Malignant neoplasm of retromolar area
37916	B05y.00	Malignant neoplasm of other specified mouth parts
55015	B05z.00	Malignant neoplasm of mouth NOS
37549	B05z000	Kaposi's sarcoma of palate
22893	B06..00	Malignant neoplasm of oropharynx
16241	B060.00	Malignant neoplasm of tonsil
26448	B060000	Malignant neoplasm of faucial tonsil
101988	B060100	Malignant neoplasm of palatine tonsil
102151	B060200	Malignant neoplasm of overlapping lesion of tonsil
53884	B060z00	Malignant neoplasm tonsil NOS
24397	B061.00	Malignant neoplasm of tonsillar fossa
55066	B062.00	Malignant neoplasm of tonsillar pillar
51926	B062000	Malignant neoplasm of faucial pillar
99185	B062100	Malignant neoplasm of glossopalatine fold
61510	B062200	Malignant neoplasm of palatoglossal arch
93842	B062300	Malignant neoplasm of palatopharyngeal arch
100002	B062z00	Malignant neoplasm of tonsillar fossa NOS
39554	B063.00	Malignant neoplasm of vallecula
46728	B064.00	Malignant neoplasm of anterior epiglottis
26134	B064000	Malignant neoplasm of epiglottis, free border
91895	B064100	Malignant neoplasm of glossoepiglottic fold
73439	B064z00	Malignant neoplasm of anterior epiglottis NOS

Medcode	Read Code	Description
48519	B065.00	Malignant neoplasm of junctional region of epiglottis
56355	B066.00	Malignant neoplasm of lateral wall of oropharynx
90124	B067.00	Malignant neoplasm of posterior wall of oropharynx
67323	B06y.00	Malignant neoplasm of oropharynx, other specified sites
91037	B06yz00	Malignant neoplasm of other specified site of oropharynx NOS
43200	B06z.00	Malignant neoplasm of oropharynx NOS
24675	B07..00	Malignant neoplasm of nasopharynx
94390	B070.00	Malignant neoplasm of roof of nasopharynx
95429	B071.00	Malignant neoplasm of posterior wall of nasopharynx
33388	B071000	Malignant neoplasm of adenoid
46548	B071100	Malignant neoplasm of pharyngeal tonsil
96869	B071z00	Malignant neoplasm of posterior wall of nasopharynx NOS
59004	B072.00	Malignant neoplasm of lateral wall of nasopharynx
37940	B072000	Malignant neoplasm of pharyngeal recess
102205	B072z00	Malignant neoplasm of lateral wall of nasopharynx NOS
44139	B073.00	Malignant neoplasm of anterior wall of nasopharynx
106915	B073100	Malignant neoplasm of nasopharyngeal soft palate surface
99386	B073200	Malignant neoplasm posterior margin nasal septum and choanae
100918	B073z00	Malignant neoplasm of anterior wall of nasopharynx NOS
66422	B074.00	Malignant neoplasm, overlapping lesion of nasopharynx
55630	B07y.00	Malignant neoplasm of other specified site of nasopharynx
28665	B07z.00	Malignant neoplasm of nasopharynx NOS
34012	B08..00	Malignant neoplasm of hypopharynx
43548	B080.00	Malignant neoplasm of postcricoid region
39897	B081.00	Malignant neoplasm of pyriform sinus
57248	B082.00	Malignant neoplasm aryepiglottic fold, hypopharyngeal aspect
64462	B083.00	Malignant neoplasm of posterior pharynx
88362	B08y.00	Malignant neoplasm of other specified hypopharyngeal site
28451	B08z.00	Malignant neoplasm of hypopharynx NOS
16297	B0z0.00	Malignant neoplasm of pharynx unspecified
95016	B0z1.00	Malignant neoplasm of Waldeyer's ring
39084	B0z2.00	Malignant neoplasm of laryngopharynx
49758	B0zy.00	Malignant neoplasm of other sites lip, oral cavity, pharynx
39430	B0zz.00	Malignant neoplasm of lip, oral cavity and pharynx NOS
15709	B1...00	Malignant neoplasm of digestive organs and peritoneum
3357	B1...11	Carcinoma of digestive organs and peritoneum
1062	B10..00	Malignant neoplasm of oesophagus
61695	B100.00	Malignant neoplasm of cervical oesophagus
41362	B101.00	Malignant neoplasm of thoracic oesophagus
63470	B102.00	Malignant neoplasm of abdominal oesophagus
50789	B103.00	Malignant neoplasm of upper third of oesophagus
54171	B104.00	Malignant neoplasm of middle third of oesophagus
42416	B105.00	Malignant neoplasm of lower third of oesophagus
67497	B106.00	Malignant neoplasm, overlapping lesion of oesophagus
98142	B107.00	Siewert type I adenocarcinoma

Medcode	Read Code	Description
53591	B10y.00	Malignant neoplasm of other specified part of oesophagus
30700	B10z.00	Malignant neoplasm of oesophagus NOS
4865	B10z.11	Oesophageal cancer
8386	B11..00	Malignant neoplasm of stomach
10368	B11..11	Gastric neoplasm
32022	B110.00	Malignant neoplasm of cardia of stomach
100584	B110000	Malignant neoplasm of cardiac orifice of stomach
22894	B110100	Malignant neoplasm of cardio-oesophageal junction of stomach
94278	B110111	Malignant neoplasm of gastro-oesophageal junction
37859	B110z00	Malignant neoplasm of cardia of stomach NOS
21620	B111.00	Malignant neoplasm of pylorus of stomach
48237	B111000	Malignant neoplasm of prepylorus of stomach
41215	B111100	Malignant neoplasm of pyloric canal of stomach
59092	B111z00	Malignant neoplasm of pylorus of stomach NOS
19318	B112.00	Malignant neoplasm of pyloric antrum of stomach
32362	B113.00	Malignant neoplasm of fundus of stomach
43572	B114.00	Malignant neoplasm of body of stomach
42193	B115.00	Malignant neoplasm of lesser curve of stomach unspecified
55434	B116.00	Malignant neoplasm of greater curve of stomach unspecified
51690	B117.00	Malignant neoplasm, overlapping lesion of stomach
97499	B118.00	Siewert type II adenocarcinoma
96094	B119.00	Siewert type III adenocarcinoma
55019	B11y.00	Malignant neoplasm of other specified site of stomach
65312	B11y000	Malignant neoplasm of anterior wall of stomach NEC
96802	B11y100	Malignant neoplasm of posterior wall of stomach NEC
65372	B11yz00	Malignant neoplasm of other specified site of stomach NOS
14800	B11z.00	Malignant neoplasm of stomach NOS
6806	B12..00	Malignant neoplasm of small intestine and duodenum
18613	B120.00	Malignant neoplasm of duodenum
43479	B121.00	Malignant neoplasm of jejunum
33871	B122.00	Malignant neoplasm of ileum
63995	B123.00	Malignant neoplasm of Meckel's diverticulum
66166	B124.00	Malignant neoplasm, overlapping lesion of small intestine
99896	B12y.00	Malignant neoplasm of other specified site small intestine
43390	B12z.00	Malignant neoplasm of small intestine NOS
1220	B13..00	Malignant neoplasm of colon
9088	B130.00	Malignant neoplasm of hepatic flexure of colon
6935	B131.00	Malignant neoplasm of transverse colon
10864	B132.00	Malignant neoplasm of descending colon
2815	B133.00	Malignant neoplasm of sigmoid colon
3811	B134.00	Malignant neoplasm of caecum
22163	B134.11	Carcinoma of caecum
18632	B135.00	Malignant neoplasm of appendix
10946	B136.00	Malignant neoplasm of ascending colon
18619	B137.00	Malignant neoplasm of splenic flexure of colon

Medcode	Read Code	Description
93478	B138.00	Malignant neoplasm, overlapping lesion of colon
48231	B13y.00	Malignant neoplasm of other specified sites of colon
28163	B13z.00	Malignant neoplasm of colon NOS
9118	B13z.11	Colonic cancer
35357	B14..00	Malignant neoplasm of rectum, rectosigmoid junction and anus
27855	B140.00	Malignant neoplasm of rectosigmoid junction
1800	B141.00	Malignant neoplasm of rectum
7219	B141.11	Carcinoma of rectum
5901	B141.12	Rectal carcinoma
24370	B142.00	Malignant neoplasm of anal canal
9491	B142.11	Anal carcinoma
46159	B142000	Malignant neoplasm of cloacogenic zone
27897	B143.00	Malignant neoplasm of anus unspecified
50974	B14z.00	Malignant neoplasm rectum,rectosigmoid junction and anus NOS
8918	B15..00	Malignant neoplasm of liver and intrahepatic bile ducts
25535	B150.00	Primary malignant neoplasm of liver
16126	B150000	Primary carcinoma of liver
31210	B150100	Hepatoblastoma of liver
68410	B150200	Primary angiosarcoma of liver
22187	B150300	Hepatocellular carcinoma
44399	B150z00	Primary malignant neoplasm of liver NOS
16915	B151.00	Malignant neoplasm of intrahepatic bile ducts
65124	B151000	Malignant neoplasm of interlobular bile ducts
110775	B151100	Malignant neoplasm of interlobular biliary canals
89593	B151200	Malignant neoplasm of intrahepatic biliary passages
58088	B151400	Malignant neoplasm of intrahepatic gall duct
61643	B151z00	Malignant neoplasm of intrahepatic bile ducts NOS
26393	B152.00	Malignant neoplasm of liver unspecified
36147	B153.00	Secondary malignant neoplasm of liver
38978	B15z.00	Malignant neoplasm of liver and intrahepatic bile ducts NOS
54103	B16..00	Malignant neoplasm gallbladder and extrahepatic bile ducts
16105	B160.00	Malignant neoplasm of gallbladder
31393	B160.11	Carcinoma gallbladder
23433	B161.00	Malignant neoplasm of extrahepatic bile ducts
72445	B161000	Malignant neoplasm of cystic duct
52537	B161100	Malignant neoplasm of hepatic duct
7982	B161200	Malignant neoplasm of common bile duct
36495	B161211	Carcinoma common bile duct
105613	B161300	Malignant neoplasm of sphincter of Oddi
74896	B161z00	Malignant neoplasm of extrahepatic bile ducts NOS
10949	B162.00	Malignant neoplasm of ampulla of Vater
35039	B163.00	Malignant neoplasm, overlapping lesion of biliary tract
60312	B16y.00	Malignant neoplasm other gallbladder/extrahepatic bile duct
15907	B16z.00	Malignant neoplasm gallbladder/extrahepatic bile ducts NOS
8166	B17..00	Malignant neoplasm of pancreas

Medcode	Read Code	Description
8771	B170.00	Malignant neoplasm of head of pancreas
40810	B171.00	Malignant neoplasm of body of pancreas
39870	B172.00	Malignant neoplasm of tail of pancreas
35535	B173.00	Malignant neoplasm of pancreatic duct
35795	B174.00	Malignant neoplasm of Islets of Langerhans
97875	B175.00	Malignant neoplasm, overlapping lesion of pancreas
48537	B17y.00	Malignant neoplasm of other specified sites of pancreas
96635	B17y000	Malignant neoplasm of ectopic pancreatic tissue
95783	B17yz00	Malignant neoplasm of specified site of pancreas NOS
34388	B17z.00	Malignant neoplasm of pancreas NOS
44108	B18..00	Malignant neoplasm of retroperitoneum and peritoneum
21330	B180.00	Malignant neoplasm of retroperitoneum
65159	B180100	Malignant neoplasm of perinephric tissue
24048	B180200	Malignant neoplasm of retrocaecal tissue
61555	B180z00	Malignant neoplasm of retroperitoneum NOS
17874	B181.00	Mesothelioma of peritoneum
46613	B18y.00	Malignant neoplasm of specified parts of peritoneum
59388	B18y100	Malignant neoplasm of mesocaecum
30165	B18y200	Malignant neoplasm of mesorectum
50898	B18y300	Malignant neoplasm of omentum
64516	B18y400	Malignant neoplasm of parietal peritoneum
39413	B18y500	Malignant neoplasm of pelvic peritoneum
69821	B18y600	Malignant neoplasm of the pouch of Douglas
90290	B18y700	Malignant neoplasm of mesentery
64106	B18yz00	Malignant neoplasm of specified parts of peritoneum NOS
16298	B18z.00	Malignant neoplasm of retroperitoneum and peritoneum NOS
17559	B1z0.00	Malignant neoplasm of intestinal tract, part unspecified
11628	B1z0.11	Cancer of bowel
65460	B1z1.00	Malignant neoplasm of spleen NEC
108667	B1z1000	Angiosarcoma of spleen
72224	B1z1100	Fibrosarcoma of spleen
93778	B1z1z00	Malignant neoplasm of spleen NOS
94776	B1z2.00	Malignant neoplasm, overlapping lesion of digestive system
56918	B1zy.00	Malignant neoplasm other spec digestive tract and peritoneum
51255	B1zz.00	Malignant neoplasm of digestive tract and peritoneum NOS
45307	B2...11	Carcinoma of respiratory tract and intrathoracic organs
23389	B200.00	Malignant neoplasm of nasal cavities
71204	B200000	Malignant neoplasm of cartilage of nose
98911	B200100	Malignant neoplasm of nasal conchae
62761	B200200	Malignant neoplasm of septum of nose
62182	B200300	Malignant neoplasm of vestibule of nose
42856	B200z00	Malignant neoplasm of nasal cavities NOS
107916	B201000	Malignant neoplasm of auditory (Eustachian) tube
98537	B201100	Malignant neoplasm of tympanic cavity
54613	B201200	Malignant neoplasm of tympanic antrum

Medcode	Read Code	Description
71946	B201300	Malignant neoplasm of mastoid air cells
32174	B202.00	Malignant neoplasm of maxillary sinus
54636	B203.00	Malignant neoplasm of ethmoid sinus
15684	B204.00	Malignant neoplasm of frontal sinus
65215	B205.00	Malignant neoplasm of sphenoidal sinus
39590	B206.00	Malignant neoplasm, overlapping lesion of accessory sinuses
55246	B20z.00	Malignant neoplasm of accessory sinus NOS
319	B21..00	Malignant neoplasm of larynx
318	B210.00	Malignant neoplasm of glottis
26165	B211.00	Malignant neoplasm of supraglottis
22441	B212.00	Malignant neoplasm of subglottis
43111	B213.00	Malignant neoplasm of laryngeal cartilage
63460	B213000	Malignant neoplasm of arytenoid cartilage
37805	B213100	Malignant neoplasm of cricoid cartilage
107878	B213200	Malignant neoplasm of cuneiform cartilage
47862	B213300	Malignant neoplasm of thyroid cartilage
97332	B213z00	Malignant neoplasm of laryngeal cartilage NOS
50579	B214.00	Malignant neoplasm, overlapping lesion of larynx
55374	B215.00	Malignant neoplasm of epiglottis NOS
26813	B21y.00	Malignant neoplasm of larynx, other specified site
9237	B21z.00	Malignant neoplasm of larynx NOS
13243	B22..00	Malignant neoplasm of trachea, bronchus and lung
15221	B220.00	Malignant neoplasm of trachea
103946	B220100	Malignant neoplasm of mucosa of trachea
37810	B220z00	Malignant neoplasm of trachea NOS
12870	B221.00	Malignant neoplasm of main bronchus
17391	B221000	Malignant neoplasm of carina of bronchus
33444	B221100	Malignant neoplasm of hilus of lung
21698	B221z00	Malignant neoplasm of main bronchus NOS
10358	B222.00	Malignant neoplasm of upper lobe, bronchus or lung
31700	B222000	Malignant neoplasm of upper lobe bronchus
25886	B222100	Malignant neoplasm of upper lobe of lung
44169	B222z00	Malignant neoplasm of upper lobe, bronchus or lung NOS
31268	B223.00	Malignant neoplasm of middle lobe, bronchus or lung
41523	B223000	Malignant neoplasm of middle lobe bronchus
39923	B223100	Malignant neoplasm of middle lobe of lung
54134	B223z00	Malignant neoplasm of middle lobe, bronchus or lung NOS
31188	B224.00	Malignant neoplasm of lower lobe, bronchus or lung
18678	B224000	Malignant neoplasm of lower lobe bronchus
12582	B224100	Malignant neoplasm of lower lobe of lung
42566	B224z00	Malignant neoplasm of lower lobe, bronchus or lung NOS
36371	B225.00	Malignant neoplasm of overlapping lesion of bronchus & lung
7484	B226.00	Mesothelioma
38961	B22y.00	Malignant neoplasm of other sites of bronchus or lung
3903	B22z.00	Malignant neoplasm of bronchus or lung NOS

Medcode	Read Code	Description
2587	B22z.11	Lung cancer
31573	B23..00	Malignant neoplasm of pleura
67107	B230.00	Malignant neoplasm of parietal pleura
106194	B231.00	Malignant neoplasm of visceral pleura
9600	B232.00	Mesothelioma of pleura
98104	B23y.00	Malignant neoplasm of other specified pleura
34742	B23z.00	Malignant neoplasm of pleura NOS
62556	B24..00	Malignant neoplasm of thymus, heart and mediastinum
27483	B240.00	Malignant neoplasm of thymus
95644	B241.00	Malignant neoplasm of heart
63430	B241000	Malignant neoplasm of endocardium
65605	B241200	Malignant neoplasm of myocardium
94975	B241300	Malignant neoplasm of pericardium
101885	B241400	Mesothelioma of pericardium
50289	B241z00	Malignant neoplasm of heart NOS
27715	B242.00	Malignant neoplasm of anterior mediastinum
92720	B243.00	Malignant neoplasm of posterior mediastinum
61064	B24X.00	Malignant neoplasm of mediastinum, part unspecified
66750	B24z.00	Malignant neoplasm of heart, thymus and mediastinum NOS
66646	B26..00	Malignant neoplasm, overlap lesion of resp & intrathor orgs
29283	B2zy.00	Malignant neoplasm of other site of respiratory tract
42569	B2zz.00	Malignant neoplasm of respiratory tract NOS
9902	B3...11	Carcinoma of bone, connective tissue, skin and breast
12539	B3...12	Sarcoma of bone and connective tissue
18314	B30..00	Malignant neoplasm of bone and articular cartilage
59036	B300.00	Malignant neoplasm of bones of skull and face
53594	B300000	Malignant neoplasm of ethmoid bone
53599	B300100	Malignant neoplasm of frontal bone
59520	B300200	Malignant neoplasm of malar bone
95458	B300300	Malignant neoplasm of nasal bone
55953	B300400	Malignant neoplasm of occipital bone
50298	B300500	Malignant neoplasm of orbital bone
54747	B300600	Malignant neoplasm of parietal bone
55595	B300700	Malignant neoplasm of sphenoid bone
62104	B300800	Malignant neoplasm of temporal bone
50299	B300900	Malignant neoplasm of zygomatic bone
17475	B300A00	Malignant neoplasm of maxilla
96445	B300B00	Malignant neoplasm of turbinate
44452	B300C00	Malignant neoplasm of vomer
69146	B300z00	Malignant neoplasm of bones of skull and face NOS
33833	B301.00	Malignant neoplasm of mandible
16704	B302.00	Malignant neoplasm of vertebral column
46939	B302000	Malignant neoplasm of cervical vertebra
32372	B302100	Malignant neoplasm of thoracic vertebra
54691	B302200	Malignant neoplasm of lumbar vertebra

Medcode	Read Code	Description
49701	B302z00	Malignant neoplasm of vertebral column NOS
27528	B303.00	Malignant neoplasm of ribs, sternum and clavicle
37842	B303000	Malignant neoplasm of rib
49491	B303100	Malignant neoplasm of sternum
66639	B303200	Malignant neoplasm of clavicle
60403	B303300	Malignant neoplasm of costal cartilage
67763	B303400	Malignant neoplasm of costo-vertebral joint
54493	B303500	Malignant neoplasm of xiphoid process
51237	B303z00	Malignant neoplasm of rib, sternum and clavicle NOS
71810	B304.00	Malignant neoplasm of scapula and long bones of upper arm
49054	B304000	Malignant neoplasm of scapula
105797	B304100	Malignant neoplasm of acromion
61741	B304200	Malignant neoplasm of humerus
92371	B304300	Malignant neoplasm of radius
64848	B304400	Malignant neoplasm of ulna
73530	B305.00	Malignant neoplasm of hand bones
106069	B305.11	Malignant neoplasm of carpal bones
72464	B305.12	Malignant neoplasm of metacarpal bones
57988	B305000	Malignant neoplasm of carpal bone - scaphoid
69104	B305100	Malignant neoplasm of carpal bone - lunate
110993	B305800	Malignant neoplasm of first metacarpal bone
108638	B305A00	Malignant neoplasm of third metacarpal bone
94427	B305C00	Malignant neoplasm of fifth metacarpal bone
86812	B305D00	Malignant neoplasm of phalanges of hand
73556	B305z00	Malignant neoplasm of hand bones NOS
54631	B306.00	Malignant neoplasm of pelvic bones, sacrum and coccyx
44609	B306000	Malignant neoplasm of ilium
59223	B306100	Malignant neoplasm of ischium
51921	B306200	Malignant neoplasm of pubis
40966	B306300	Malignant neoplasm of sacral vertebra
66908	B306400	Malignant neoplasm of coccygeal vertebra
50152	B306500	Malignant sacral teratoma
38938	B306z00	Malignant neoplasm of pelvis, sacrum or coccyx NOS
68055	B307.00	Malignant neoplasm of long bones of leg
56513	B307000	Malignant neoplasm of femur
50402	B307100	Malignant neoplasm of fibula
40814	B307200	Malignant neoplasm of tibia
62630	B307z00	Malignant neoplasm of long bones of leg NOS
105475	B308.00	Malignant neoplasm of short bones of leg
95182	B308100	Malignant neoplasm of talus
72212	B308200	Malignant neoplasm of calcaneum
34878	B308300	Malignant neoplasm of medial cuneiform
69927	B308800	Malignant neoplasm of first metatarsal bone
111426	B308900	Malignant neoplasm of second metatarsal bone
92382	B308B00	Malignant neoplasm of fourth metatarsal bone

Medcode	Read Code	Description
58949	B308D00	Malignant neoplasm of phalanges of foot
103354	B308z00	Malignant neoplasm of short bones of leg NOS
67451	B30W.00	Malignant neoplasm/overlap lesion/bone+articulr cartilage
43614	B30X.00	Malignant neoplasm/bones+articular cartilage/limb,unspfd
16075	B30z.00	Malignant neoplasm of bone and articular cartilage NOS
19437	B30z000	Osteosarcoma
34451	B31..00	Malignant neoplasm of connective and other soft tissue
59382	B310000	Malignant neoplasm of soft tissue of head
40014	B310100	Malignant neoplasm of soft tissue of face
48517	B310200	Malignant neoplasm of soft tissue of neck
60035	B310300	Malignant neoplasm of cartilage of ear
49463	B310400	Malignant neoplasm of tarsus of eyelid
108389	B310500	Malignant neoplasm soft tissues of cervical spine
50222	B311000	Malignant neoplasm of connective and soft tissue of shoulder
64345	B311100	Malignant neoplasm of connective and soft tissue, upper arm
57482	B311200	Malignant neoplasm of connective and soft tissue of fore-arm
19321	B311300	Malignant neoplasm of connective and soft tissue of hand
91586	B311400	Malignant neoplasm of connective and soft tissue of finger
63988	B311500	Malignant neoplasm of connective and soft tissue of thumb
102949	B312000	Malignant neoplasm of connective and soft tissue of hip
54222	B312400	Malignant neoplasm of connective and soft tissue of foot
99572	B312500	Malignant neoplasm of connective and soft tissue of toe
22290	B313.00	Malignant neoplasm of connective and soft tissue of thorax
29160	B313000	Malignant neoplasm of connective and soft tissue of axilla
54186	B313100	Malignant neoplasm of diaphragm
72522	B313200	Malignant neoplasm of great vessels
45071	B314.00	Malignant neoplasm of connective and soft tissue of abdomen
51965	B315.00	Malignant neoplasm of connective and soft tissue of pelvis
70463	B315000	Malignant neoplasm of connective and soft tissue of buttock
59152	B315200	Malignant neoplasm of connective and soft tissue of perineum
111311	B317.00	Malignant neoplasm, overlap lesion connective & soft tissue
15182	B31z.00	Malignant neoplasm of connective and soft tissue, site NOS
104128	B31z000	Kaposi's sarcoma of soft tissue
865	B32..00	Malignant melanoma of skin
70637	B320.00	Malignant melanoma of lip
54632	B321.00	Malignant melanoma of eyelid including canthus
57260	B322.00	Malignant melanoma of ear and external auricular canal
59061	B322000	Malignant melanoma of auricle (ear)
102145	B322100	Malignant melanoma of external auditory meatus
73744	B322z00	Malignant melanoma of ear and external auricular canal NOS
47252	B323.00	Malignant melanoma of other and unspecified parts of face
41278	B323000	Malignant melanoma of external surface of cheek
71136	B323100	Malignant melanoma of chin
47094	B323200	Malignant melanoma of eyebrow
68133	B323300	Malignant melanoma of forehead

Medcode	Read Code	Description
45139	B323400	Malignant melanoma of external surface of nose
58958	B323500	Malignant melanoma of temple
67806	B323z00	Malignant melanoma of face NOS
65625	B324.00	Malignant melanoma of scalp and neck
55881	B324000	Malignant melanoma of scalp
45306	B324100	Malignant melanoma of neck
99257	B324z00	Malignant melanoma of scalp and neck NOS
38689	B325.00	Malignant melanoma of trunk (excluding scrotum)
49814	B325000	Malignant melanoma of axilla
32768	B325100	Malignant melanoma of breast
53629	B325200	Malignant melanoma of buttock
34259	B325300	Malignant melanoma of groin
109002	B325400	Malignant melanoma of perianal skin
95629	B325500	Malignant melanoma of perineum
43715	B325600	Malignant melanoma of umbilicus
43463	B325700	Malignant melanoma of back
51209	B325800	Malignant melanoma of chest wall
45760	B325z00	Malignant melanoma of trunk, excluding scrotum, NOS
65164	B326.00	Malignant melanoma of upper limb and shoulder
50505	B326000	Malignant melanoma of shoulder
54685	B326100	Malignant melanoma of upper arm
45755	B326200	Malignant melanoma of fore-arm
62475	B326300	Malignant melanoma of hand
25602	B326400	Malignant melanoma of finger
63997	B326500	Malignant melanoma of thumb
55292	B326z00	Malignant melanoma of upper limb or shoulder NOS
46255	B327.00	Malignant melanoma of lower limb and hip
73536	B327000	Malignant melanoma of hip
51873	B327100	Malignant melanoma of thigh
54305	B327200	Malignant melanoma of knee
39878	B327300	Malignant melanoma of popliteal fossa area
37872	B327400	Malignant melanoma of lower leg
42714	B327500	Malignant melanoma of ankle
61246	B327600	Malignant melanoma of heel
41490	B327700	Malignant melanoma of foot
36899	B327800	Malignant melanoma of toe
53369	B327900	Malignant melanoma of great toe
64327	B327z00	Malignant melanoma of lower limb or hip NOS
111079	B328.00	Malignant melanoma stage IA
109827	B329.00	Malignant melanoma stage IB
110139	B32A.00	Malignant melanoma stage IIA
110180	B32B.00	Malignant melanoma stage IIB
111413	B32C.00	Malignant melanoma stage IIC
110961	B32F.00	Malignant melanoma stage IIIC
109745	B32G.00	Malignant melanoma stage IV M1a

Medcode	Read Code	Description
110483	B32H.00	Malignant melanoma stage IV M1b
111162	B32J.00	Malignant melanoma stage IV M1c
42153	B32y.00	Malignant melanoma of other specified skin site
96585	B32y000	Overlapping malignant melanoma of skin
28556	B32z.00	Malignant melanoma of skin NOS
4632	B33..00	Other malignant neoplasm of skin
37016	B33..14	Malignant neoplasm of sebaceous gland
40443	B33..15	Malignant neoplasm of sweat gland
18245	B330.00	Malignant neoplasm of skin of lip
43087	B331.00	Malignant neoplasm of eyelid including canthus
36731	B331000	Malignant neoplasm of canthus
55550	B331100	Malignant neoplasm of upper eyelid
41958	B331200	Malignant neoplasm of lower eyelid
53515	B332.00	Malignant neoplasm skin of ear and external auricular canal
33997	B332000	Malignant neoplasm of skin of auricle (ear)
62080	B332100	Malignant neoplasm of skin of external auditory meatus
33271	B332200	Malignant neoplasm of pinna NEC
27370	B333.00	Malignant neoplasm skin of other and unspecified parts face
30645	B333000	Malignant neoplasm of skin of cheek, external
49403	B333100	Malignant neoplasm of skin of chin
55670	B333200	Malignant neoplasm of skin of eyebrow
30576	B333300	Malignant neoplasm of skin of forehead
16202	B333400	Malignant neoplasm of skin of nose (external)
21327	B333500	Malignant neoplasm of skin of temple
46008	B333z00	Malignant neoplasm skin other and unspec part of face NOS
54234	B334.00	Malignant neoplasm of scalp and skin of neck
37165	B334000	Malignant neoplasm of scalp
43619	B334100	Malignant neoplasm of skin of neck
73760	B334z00	Malignant neoplasm of scalp or skin of neck NOS
57446	B335.00	Malignant neoplasm of skin of trunk, excluding scrotum
70380	B335000	Malignant neoplasm of skin of axillary fold
37969	B335100	Malignant neoplasm of skin of chest, excluding breast
30543	B335200	Malignant neoplasm of skin of breast
18618	B335300	Malignant neoplasm of skin of abdominal wall
67748	B335400	Malignant neoplasm of skin of umbilicus
66319	B335500	Malignant neoplasm of skin of groin
46458	B335600	Malignant neoplasm of skin of perineum
45077	B335700	Malignant neoplasm of skin of back
62305	B335800	Malignant neoplasm of skin of buttock
23480	B335900	Malignant neoplasm of perianal skin
66447	B335A00	Malignant neoplasm of skin of scapular region
15868	B335z00	Malignant neoplasm of skin of trunk, excluding scrotum, NOS
30747	B336.00	Malignant neoplasm of skin of upper limb and shoulder
43122	B336000	Malignant neoplasm of skin of shoulder
42707	B336100	Malignant neoplasm of skin of upper arm

Medcode	Read Code	Description
30577	B336200	Malignant neoplasm of skin of fore-arm
54352	B336300	Malignant neoplasm of skin of hand
25245	B336400	Malignant neoplasm of skin of finger
64406	B336500	Malignant neoplasm of skin of thumb
60526	B336z00	Malignant neoplasm of skin of upper limb or shoulder NOS
57442	B337.00	Malignant neoplasm of skin of lower limb and hip
70988	B337000	Malignant neoplasm of skin of hip
58601	B337100	Malignant neoplasm of skin of thigh
56954	B337200	Malignant neoplasm of skin of knee
68197	B337300	Malignant neoplasm of skin of popliteal fossa area
33682	B337400	Malignant neoplasm of skin of lower leg
64270	B337500	Malignant neoplasm of skin of ankle
104025	B337600	Malignant neoplasm of skin of heel
70587	B337700	Malignant neoplasm of skin of foot
65782	B337800	Malignant neoplasm of skin of toe
67914	B337900	Malignant neoplasm of skin of great toe
61194	B337z00	Malignant neoplasm of skin of lower limb or hip NOS
93352	B338.00	Squamous cell carcinoma of skin
24375	B339.00	Dermatofibrosarcoma protuberans
42429	B33X.00	Malignant neoplasm overlapping lesion of skin
18354	B33y.00	Malignant neoplasm of other specified skin sites
2492	B33z.00	Malignant neoplasm of skin NOS
27931	B33z000	Kaposi's sarcoma of skin
3968	B34..00	Malignant neoplasm of female breast
348	B34..11	Ca female breast
26853	B340.00	Malignant neoplasm of nipple and areola of female breast
23380	B340000	Malignant neoplasm of nipple of female breast
64686	B340100	Malignant neoplasm of areola of female breast
59831	B340z00	Malignant neoplasm of nipple or areola of female breast NOS
31546	B341.00	Malignant neoplasm of central part of female breast
29826	B342.00	Malignant neoplasm of upper-inner quadrant of female breast
45222	B343.00	Malignant neoplasm of lower-inner quadrant of female breast
23399	B344.00	Malignant neoplasm of upper-outer quadrant of female breast
42070	B345.00	Malignant neoplasm of lower-outer quadrant of female breast
20685	B346.00	Malignant neoplasm of axillary tail of female breast
49148	B347.00	Malignant neoplasm, overlapping lesion of breast
56715	B34y.00	Malignant neoplasm of other site of female breast
95057	B34y000	Malignant neoplasm of ectopic site of female breast
38475	B34yz00	Malignant neoplasm of other site of female breast NOS
9470	B34z.00	Malignant neoplasm of female breast NOS
19423	B35..00	Malignant neoplasm of male breast
54494	B350.00	Malignant neoplasm of nipple and areola of male breast
68480	B350000	Malignant neoplasm of nipple of male breast
67884	B350100	Malignant neoplasm of areola of male breast
54202	B35z.00	Malignant neoplasm of other site of male breast

Medcode	Read Code	Description
95323	B35z000	Malignant neoplasm of ectopic site of male breast
48809	B35zz00	Malignant neoplasm of male breast NOS
105488	B36..00	Local recurrence of malignant tumour of breast
13252	B4...00	Malignant neoplasm of genitourinary organ
2744	B40..00	Malignant neoplasm of uterus, part unspecified
2747	B41..00	Malignant neoplasm of cervix uteri
3230	B41..11	Cervical carcinoma (uterus)
48820	B410.00	Malignant neoplasm of endocervix
57235	B410000	Malignant neoplasm of endocervical canal
53103	B410100	Malignant neoplasm of endocervical gland
50285	B410z00	Malignant neoplasm of endocervix NOS
50297	B411.00	Malignant neoplasm of exocervix
58094	B412.00	Malignant neoplasm, overlapping lesion of cervix uteri
32955	B41y.00	Malignant neoplasm of other site of cervix
95505	B41y000	Malignant neoplasm of cervical stump
57719	B41y100	Malignant neoplasm of squamocolumnar junction of cervix
43435	B41yz00	Malignant neoplasm of other site of cervix NOS
28311	B41z.00	Malignant neoplasm of cervix uteri NOS
93762	B42..00	Malignant neoplasm of placenta
28003	B420.00	Choriocarcinoma
7046	B43..00	Malignant neoplasm of body of uterus
3213	B430.00	Malignant neoplasm of corpus uteri, excluding isthmus
72723	B430000	Malignant neoplasm of cornu of corpus uteri
68155	B430100	Malignant neoplasm of fundus of corpus uteri
2890	B430200	Malignant neoplasm of endometrium of corpus uteri
49400	B430211	Malignant neoplasm of endometrium
45793	B430300	Malignant neoplasm of myometrium of corpus uteri
45490	B430z00	Malignant neoplasm of corpus uteri NOS
43940	B431.00	Malignant neoplasm of isthmus of uterine body
59097	B431000	Malignant neoplasm of lower uterine segment
70729	B431z00	Malignant neoplasm of isthmus of uterine body NOS
16967	B432.00	Malignant neoplasm of overlapping lesion of corpus uteri
31608	B43y.00	Malignant neoplasm of other site of uterine body
33617	B43z.00	Malignant neoplasm of body of uterus NOS
19141	B44..00	Malignant neoplasm of ovary and other uterine adnexa
7805	B440.00	Malignant neoplasm of ovary
1986	B440.11	Cancer of ovary
49828	B441.00	Malignant neoplasm of fallopian tube
101778	B442.00	Malignant neoplasm of broad ligament
46153	B443.00	Malignant neoplasm of parametrium
97996	B44y.00	Malignant neoplasm of other site of uterine adnexa
65106	B44z.00	Malignant neoplasm of uterine adnexa NOS
37328	B450.00	Malignant neoplasm of vagina
10698	B450100	Malignant neoplasm of vaginal vault
60772	B450z00	Malignant neoplasm of vagina NOS

Medcode	Read Code	Description
43761	B451.00	Malignant neoplasm of labia majora
47899	B451000	Malignant neoplasm of greater vestibular (Bartholin's) gland
59362	B451z00	Malignant neoplasm of labia majora NOS
58061	B452.00	Malignant neoplasm of labia minora
53910	B453.00	Malignant neoplasm of clitoris
4554	B454.00	Malignant neoplasm of vulva unspecified
11991	B454.11	Primary vulval cancer
26454	B45X.00	Malignant neoplasm/overlapping lesion/feml genital organs
95421	B45y.00	Malignant neoplasm of other specified female genital organ
27617	B45y000	Malignant neoplasm of overlapping lesion of vulva
20166	B45z.00	Malignant neoplasm of female genital organ NOS
780	B46..00	Malignant neoplasm of prostate
15148	B47..00	Malignant neoplasm of testis
64602	B470.00	Malignant neoplasm of undescended testis
7740	B470200	Seminoma of undescended testis
36325	B470300	Teratoma of undescended testis
96429	B470z00	Malignant neoplasm of undescended testis NOS
19475	B471.00	Malignant neoplasm of descended testis
21786	B471000	Seminoma of descended testis
9476	B471100	Teratoma of descended testis
91509	B471z00	Malignant neoplasm of descended testis NOS
38510	B47z.00	Malignant neoplasm of testis NOS
2961	B47z.11	Seminoma of testis
15989	B47z.12	Teratoma of testis
3541	B48..00	Malignant neoplasm of penis and other male genital organs
50681	B480.00	Malignant neoplasm of prepuce (foreskin)
17841	B481.00	Malignant neoplasm of glans penis
48743	B482.00	Malignant neoplasm of body of penis
43392	B483.00	Malignant neoplasm of penis, part unspecified
72127	B484.00	Malignant neoplasm of epididymis
63331	B485.00	Malignant neoplasm of spermatic cord
47767	B486.00	Malignant neoplasm of scrotum
52570	B487.00	Malignant neoplasm, overlapping lesion of penis
67949	B48y.00	Malignant neoplasm of other male genital organ
68161	B48y000	Malignant neoplasm of seminal vesicle
47668	B48y100	Malignant neoplasm of tunica vaginalis
68824	B48y200	Malignant neoplasm, overlapping lesion male genital orgs
92329	B48yz00	Malignant neoplasm of other male genital organ NOS
63224	B48z.00	Malignant neoplasm of penis and other male genital organ NOS
38862	B490.00	Malignant neoplasm of trigone of urinary bladder
44996	B491.00	Malignant neoplasm of dome of urinary bladder
35963	B492.00	Malignant neoplasm of lateral wall of urinary bladder
19162	B493.00	Malignant neoplasm of anterior wall of urinary bladder
42012	B494.00	Malignant neoplasm of posterior wall of urinary bladder
41571	B495.00	Malignant neoplasm of bladder neck

Medcode	Read Code	Description
28241	B496.00	Malignant neoplasm of ureteric orifice
42023	B497.00	Malignant neoplasm of urachus
105388	B498.00	Local recurrence of malignant tumour of urinary bladder
36949	B49y.00	Malignant neoplasm of other site of urinary bladder
47801	B49y000	Malignant neoplasm, overlapping lesion of bladder
31102	B49z.00	Malignant neoplasm of urinary bladder NOS
18712	B4A..11	Renal malignant neoplasm
1599	B4A0.00	Malignant neoplasm of kidney parenchyma
12389	B4A1.00	Malignant neoplasm of renal pelvis
27540	B4A1000	Malignant neoplasm of renal calyces
101608	B4A1100	Malignant neoplasm of ureteropelvic junction
54184	B4A1z00	Malignant neoplasm of renal pelvis NOS
15223	B4A2.00	Malignant neoplasm of ureter
15644	B4A3.00	Malignant neoplasm of urethra
72174	B4A4.00	Malignant neoplasm of paraurethral glands
44884	B4Ay.00	Malignant neoplasm of other urinary organs
59286	B4Ay000	Malignant neoplasm of overlapping lesion of urinary organs
29462	B4Az.00	Malignant neoplasm of kidney or urinary organs NOS
38931	B4y..00	Malignant neoplasm of genitourinary organ OS
52594	B4z..00	Malignant neoplasm of genitourinary organ NOS
10995	B5...00	Malignant neoplasm of other and unspecified sites
20160	B50..00	Malignant neoplasm of eye
59041	B500000	Malignant neoplasm of ciliary body
59381	B500100	Malignant neoplasm of iris
106569	B500200	Malignant neoplasm of crystalline lens
56718	B500z00	Malignant neoplasm of eyeball NOS
45667	B501.00	Malignant neoplasm of orbit
86996	B501000	Malignant neoplasm of connective tissue of orbit
63104	B501z00	Malignant neoplasm of orbit NOS
64817	B502.00	Malignant neoplasm of lacrimal gland
63657	B503.00	Malignant neoplasm of conjunctiva
73992	B504.00	Malignant neoplasm of cornea
28069	B505.00	Malignant neoplasm of retina
15991	B506.00	Malignant neoplasm of choroid
71584	B507.00	Malignant neoplasm of lacrimal duct
101805	B507000	Malignant neoplasm of lacrimal sac
65357	B507100	Malignant neoplasm of nasolacrimal duct
45922	B508.00	Malignant neoplasm, overlapping lesion of eye and adnexa
108363	B509.00	Malignant melanoma of eye
40437	B50y.00	Malignant neoplasm of other specified site of eye
54956	B50z.00	Malignant neoplasm of eye NOS
18617	B51..00	Malignant neoplasm of brain
10851	B51..11	Cerebral tumour - malignant
15711	B510.00	Malignant neoplasm cerebrum (excluding lobes and ventricles)
48073	B510000	Malignant neoplasm of basal ganglia

Medcode	Read Code	Description
61399	B510100	Malignant neoplasm of cerebral cortex
99913	B510300	Malignant neoplasm of globus pallidus
70942	B510400	Malignant neoplasm of hypothalamus
62126	B510500	Malignant neoplasm of thalamus
54133	B510z00	Malignant neoplasm of cerebrum NOS
42426	B511.00	Malignant neoplasm of frontal lobe
46792	B512.00	Malignant neoplasm of temporal lobe
67236	B512000	Malignant neoplasm of hippocampus
47556	B512z00	Malignant neoplasm of temporal lobe NOS
19226	B513.00	Malignant neoplasm of parietal lobe
39088	B514.00	Malignant neoplasm of occipital lobe
52511	B515.00	Malignant neoplasm of cerebral ventricles
46789	B515000	Malignant neoplasm of choroid plexus
45154	B516.00	Malignant neoplasm of cerebellum
44089	B517.00	Malignant neoplasm of brain stem
64557	B517000	Malignant neoplasm of cerebral peduncle
49132	B517100	Malignant neoplasm of medulla oblongata
93537	B517200	Malignant neoplasm of midbrain
91240	B517300	Malignant neoplasm of pons
68641	B517z00	Malignant neoplasm of brain stem NOS
71139	B51y.00	Malignant neoplasm of other parts of brain
59170	B51y000	Malignant neoplasm of corpus callosum
65241	B51y200	Malignant neoplasm, overlapping lesion of brain
100733	B51yz00	Malignant neoplasm of other part of brain NOS
41520	B51z.00	Malignant neoplasm of brain NOS
99621	B520.00	Malignant neoplasm of cranial nerves
64971	B520000	Malignant neoplasm of olfactory bulb
70126	B520100	Malignant neoplasm of optic nerve
65599	B520200	Malignant neoplasm of acoustic nerve
101086	B520z00	Malignant neoplasm of cranial nerves NOS
28919	B521.00	Malignant neoplasm of cerebral meninges
110766	B521000	Malignant neoplasm of cerebral dura mater
109473	B521200	Malignant neoplasm of cerebral pia mater
70104	B521z00	Malignant neoplasm of cerebral meninges NOS
51115	B522.00	Malignant neoplasm of spinal cord
49714	B523.00	Malignant neoplasm of spinal meninges
67211	B523z00	Malignant neoplasm of spinal meninges NOS
63568	B524000	Malignant neoplasm of peripheral nerves of head, face & neck
61716	B524100	Malignant neoplasm of peripheral nerve,upp limb,incl should
89258	B524200	Malignant neoplasm of peripheral nerve of low limb, incl hip
63695	B524300	Malignant neoplasm of peripheral nerve of thorax
86046	B524400	Malignant neoplasm of peripheral nerve of abdomen
73988	B524500	Malignant neoplasm of peripheral nerve of pelvis
50777	B524600	Malignant neoplasm,overlap lesion periph nerve & auton ns
9622	B525.00	Malignant neoplasm of cauda equina

Medcode	Read Code	Description
49875	B52X.00	Malignant neoplasm of meninges, unspecified
88144	B52y.00	Malignant neoplasm of other specified part of nervous system
56490	B52z.00	Malignant neoplasm of nervous system NOS
5637	B53..00	Malignant neoplasm of thyroid gland
28148	B540.00	Malignant neoplasm of adrenal gland
61390	B540000	Malignant neoplasm of adrenal cortex
94220	B540100	Malignant neoplasm of adrenal medulla
70824	B540z00	Malignant neoplasm of adrenal gland NOS
4218	B541.00	Malignant neoplasm of parathyroid gland
59823	B542.00	Malignant neoplasm pituitary gland and craniopharyngeal duct
8550	B542000	Malignant neoplasm of pituitary gland
39899	B542100	Malignant neoplasm of craniopharyngeal duct
42460	B543.00	Malignant neoplasm of pineal gland
57047	B544.00	Malignant neoplasm of carotid body
50035	B545.00	Malignant neoplasm of aortic body and other paraganglia
51795	B545000	Malignant neoplasm of glomus jugulare
47840	B545100	Malignant neoplasm of aortic body
46905	B545200	Malignant neoplasm of coccygeal body
103995	B545z00	Malignant neoplasm of aortic body or paraganglia NOS
100083	B546.00	Neuroblastoma
87113	B54X.00	Malignant neoplasm-pluriglandular involvement,unspecified
90659	B54y.00	Malignant neoplasm of other specified endocrine gland
9030	B55..00	Malignant neoplasm of other and ill-defined sites
68236	B550.00	Malignant neoplasm of head, neck and face
55098	B550000	Malignant neoplasm of head NOS
41931	B550100	Malignant neoplasm of cheek NOS
12490	B550200	Malignant neoplasm of nose NOS
51818	B550300	Malignant neoplasm of jaw NOS
16280	B550400	Malignant neoplasm of neck NOS
73510	B550500	Malignant neoplasm of supraclavicular fossa NOS
58903	B550z00	Malignant neoplasm of head, neck and face NOS
47286	B551.00	Malignant neoplasm of thorax
37618	B551000	Malignant neoplasm of axilla NOS
23861	B551100	Malignant neoplasm of chest wall NOS
97547	B551200	Malignant neoplasm of intrathoracic site NOS
64810	B551z00	Malignant neoplasm of thorax NOS
15976	B552.00	Malignant neoplasm of abdomen
52316	B553.00	Malignant neoplasm of pelvis
57854	B553000	Malignant neoplasm of inguinal region NOS
89916	B553100	Malignant neoplasm of presacral region
107126	B553200	Malignant neoplasm of sacrococcygeal region
55101	B553z00	Malignant neoplasm of pelvis NOS
27449	B554.00	Malignant neoplasm of upper limb NOS
31399	B555.00	Malignant neoplasm of lower limb NOS
42218	B55y.00	Malignant neoplasm of other specified sites

Medcode	Read Code	Description
68787	B55y000	Malignant neoplasm of back NOS
67217	B55y100	Malignant neoplasm of trunk NOS
94355	B55y200	Malignant neoplasm of flank NOS
60052	B55yz00	Malignant neoplasm of specified site NOS
45267	B55z.00	Malignant neoplasm of other and ill defined site NOS
9618	B56..00	Secondary and unspecified malignant neoplasm of lymph nodes
7830	B56..11	Lymph node metastases
66775	B560100	Secondary and unspec malignant neoplasm mastoid lymph nodes
65253	B560300	Secondary and unspec malignant neoplasm occipital lymph node
6471	B57..11	Metastases of respiratory and/or digestive systems
24301	B57..12	Secondary carcinoma of respiratory and/or digestive systems
4137	B570.00	Secondary malignant neoplasm of lung
51551	B571.00	Secondary malignant neoplasm of mediastinum
16213	B572.00	Secondary malignant neoplasm of pleura
62584	B573.00	Secondary malignant neoplasm of other respiratory organs
64680	B574.00	Secondary malignant neoplasm of small intestine and duodenum
55946	B574000	Secondary malignant neoplasm of duodenum
110433	B574100	Secondary malignant neoplasm of jejunum
99511	B574200	Secondary malignant neoplasm of ileum
44529	B575.00	Secondary malignant neoplasm of large intestine and rectum
28727	B575000	Secondary malignant neoplasm of colon
62909	B575100	Secondary malignant neoplasm of rectum
35364	B576000	Secondary malignant neoplasm of retroperitoneum
27391	B576100	Secondary malignant neoplasm of peritoneum
8154	B576200	Malignant ascites
15103	B577.00	Secondary malignant neoplasm of liver
4403	B577.11	Liver metastases
56345	B57y.00	Secondary malignant neoplasm of other digestive organ
5842	B58..00	Secondary malignant neoplasm of other specified sites
27651	B58..11	Secondary carcinoma of other specified sites
1952	B580.00	Secondary malignant neoplasm of kidney
73213	B581.00	Secondary malignant neoplasm of other urinary organs
60134	B581000	Secondary malignant neoplasm of ureter
22146	B581100	Secondary malignant neoplasm of bladder
53528	B581200	Secondary malignant neoplasm of urethra
62828	B581z00	Secondary malignant neoplasm of other urinary organ NOS
19945	B582.00	Secondary malignant neoplasm of skin
43930	B582000	Secondary malignant neoplasm of skin of head
100296	B582100	Secondary malignant neoplasm of skin of face
35999	B582200	Secondary malignant neoplasm of skin of neck
41144	B582300	Secondary malignant neoplasm of skin of trunk
63896	B582400	Secondary malignant neoplasm of skin of shoulder and arm
48828	B582500	Secondary malignant neoplasm of skin of hip and leg
9505	B582600	Secondary malignant neoplasm of skin of breast
55096	B582z00	Secondary malignant neoplasm of skin NOS

Medcode	Read Code	Description
33843	B583.00	Secondary malignant neoplasm of brain and spinal cord
5198	B583000	Secondary malignant neoplasm of brain
38918	B583100	Secondary malignant neoplasm of spinal cord
5199	B583200	Cerebral metastasis
59375	B583z00	Secondary malignant neoplasm of brain or spinal cord NOS
54120	B584.00	Secondary malignant neoplasm of other part of nervous system
7654	B585.00	Secondary malignant neoplasm of bone and bone marrow
18676	B585000	Pathological fracture due to metastatic bone disease
44615	B586.00	Secondary malignant neoplasm of ovary
36401	B587.00	Secondary malignant neoplasm of adrenal gland
18616	B58y.00	Secondary malignant neoplasm of other specified sites
16760	B58y000	Secondary malignant neoplasm of breast
55090	B58y100	Secondary malignant neoplasm of uterus
73616	B58y200	Secondary malignant neoplasm of cervix uteri
97832	B58y211	Secondary cancer of the cervix
70736	B58y300	Secondary malignant neoplasm of vagina
60335	B58y400	Secondary malignant neoplasm of vulva
65490	B58y411	Secondary cancer of the vulva
21590	B58y500	Secondary malignant neoplasm of prostate
34145	B58y600	Secondary malignant neoplasm of testis
49145	B58y700	Secondary malignant neoplasm of penis
104480	B58y800	Secondary malignant neoplasm of epididymis and vas deferens
45824	B58y900	Secondary malignant neoplasm of tongue
22524	B58yz00	Secondary malignant neoplasm of other specified site NOS
16500	B58z.00	Secondary malignant neoplasm of other specified site NOS
47810	B59..00	Malignant neoplasm of unspecified site
13569	B590.00	Disseminated malignancy NOS
6170	B590.11	Carcinomatosis
26034	B591.00	Other malignant neoplasm NOS
51352	B592.00	Malignant neoplasms of independent (primary) multiple sites
65466	B592X00	Kaposi's sarcoma of multiple organs
11035	B593.00	Primary malignant neoplasm of unknown site
54679	B594.00	Secondary malignant neoplasm of unknown site
104324	B595.00	Malignant tumour of unknown origin
54267	B59z.00	Malignant neoplasm of unspecified site NOS
49525	B59zX00	Kaposi's sarcoma, unspecified
38736	B5y..00	Malignant neoplasm of other and unspecified site OS
1056	B5z..00	Malignant neoplasm of other and unspecified site NOS
12323	B6...00	Malignant neoplasm of lymphatic and haemopoietic tissue
37112	B6...11	Malignant neoplasm of histiocytic tissue
41369	B60..00	Lymphosarcoma and reticulosarcoma
1481	B600.00	Reticulosarcoma
60242	B600000	Reticulosarcoma of unspecified site
71031	B600100	Reticulosarcoma of lymph nodes of head, face and neck
70374	B600300	Reticulosarcoma of intra-abdominal lymph nodes

Medcode	Read Code	Description
95058	B600700	Reticulosarcoma of spleen
99240	B600z00	Reticulosarcoma NOS
27416	B601.00	Lymphosarcoma
71625	B601000	Lymphosarcoma of unspecified site
71238	B601100	Lymphosarcoma of lymph nodes of head, face and neck
62380	B601200	Lymphosarcoma of intrathoracic lymph nodes
64670	B601300	Lymphosarcoma of intra-abdominal lymph nodes
100352	B601500	Lymphosarcoma of lymph nodes of inguinal region and leg
103245	B601700	Lymphosarcoma of spleen
104790	B601800	Lymphosarcoma of lymph nodes of multiple sites
63723	B601z00	Lymphosarcoma NOS
21402	B602.00	Burkitt's lymphoma
59115	B602100	Burkitt's lymphoma of lymph nodes of head, face and neck
100006	B602200	Burkitt's lymphoma of intrathoracic lymph nodes
97577	B602300	Burkitt's lymphoma of intra-abdominal lymph nodes
92380	B602500	Burkitt's lymphoma of lymph nodes of inguinal region and leg
71304	B602z00	Burkitt's lymphoma NOS
99887	B60y.00	Other specified reticulosarcoma or lymphosarcoma
99951	B60z.00	Reticulosarcoma or lymphosarcoma NOS
2462	B61..00	Hodgkin's disease
104291	B61..11	Hodgkin lymphoma
65489	B610.00	Hodgkin's paragranuloma
100423	B610100	Hodgkin's paragranuloma of lymph nodes of head, face, neck
98840	B610300	Hodgkin's paragranuloma of intra-abdominal lymph nodes
44196	B611.00	Hodgkin's granuloma
98909	B611100	Hodgkin's granuloma of lymph nodes of head, face and neck
64036	B612.00	Hodgkin's sarcoma
68039	B612400	Hodgkin's sarcoma of lymph nodes of axilla and upper limb
38939	B613.00	Hodgkin's disease, lymphocytic-histiocytic predominance
71142	B613000	Hodgkin's, lymphocytic-histiocytic predominance unspec site
68330	B613100	Hodgkin's, lymphocytic-histiocytic pred of head, face, neck
92245	B613200	Hodgkin's, lymphocytic-histiocytic pred intrathoracic nodes
73532	B613300	Hodgkin's, lymphocytic-histiocytic pred intra-abdominal node
93951	B613500	Hodgkin's, lymphocytic-histiocytic pred inguinal and leg
95338	B613600	Hodgkin's, lymphocytic-histiocytic pred intrapelvic nodes
106911	B613700	Hodgkin's, lymphocytic-histiocytic predominance of spleen
104743	B613800	Hodgkin's, lymphocytic-histiocytic pred of multiple sites
29876	B613z00	Hodgkin's, lymphocytic-histiocytic predominance NOS
29178	B614.00	Hodgkin's disease, nodular sclerosis
57225	B614000	Hodgkin's disease, nodular sclerosis of unspecified site
55303	B614100	Hodgkin's nodular sclerosis of head, face and neck
67506	B614200	Hodgkin's nodular sclerosis of intrathoracic lymph nodes
61149	B614300	Hodgkin's nodular sclerosis of intra-abdominal lymph nodes
65483	B614400	Hodgkin's nodular sclerosis of lymph nodes of axilla and arm
105472	B614700	Hodgkin's disease, nodular sclerosis of spleen

Medcode	Read Code	Description
19140	B614800	Hodgkin's nodular sclerosis of lymph nodes of multiple sites
63054	B614z00	Hodgkin's disease, nodular sclerosis NOS
49605	B615.00	Hodgkin's disease, mixed cellularity
97863	B615000	Hodgkin's disease, mixed cellularity of unspecified site
94407	B615100	Hodgkin's mixed cellularity of lymph nodes head, face, neck
58684	B615200	Hodgkin's mixed cellularity of intrathoracic lymph nodes
108886	B615500	Hodgkin's mixed cellularity of lymph nodes inguinal and leg
94005	B615z00	Hodgkin's disease, mixed cellularity NOS
67703	B616.00	Hodgkin's disease, lymphocytic depletion
95049	B616000	Hodgkin's lymphocytic depletion of unspecified site
63625	B616400	Hodgkin's lymphocytic depletion lymph nodes axilla and arm
110563	B616500	Hodgkin's lymphocytic depletion lymph nodes inguinal and leg
101715	B616700	Hodgkin's disease, lymphocytic depletion of spleen
107032	B616800	Hodgkin's lymphocytic depletion lymph nodes multiple sites
101530	B616z00	Hodgkin's disease, lymphocytic depletion NOS
104895	B617.00	Nodular lymphocyte predominant Hodgkin lymphoma
105841	B618.00	Nodular sclerosis classical Hodgkin lymphoma
108775	B619.00	Mixed cellularity classical Hodgkin lymphoma
106597	B61B.00	Lymphocyte-rich classical Hodgkin lymphoma
104484	B61C.00	Other classical Hodgkin lymphoma
53397	B61z.00	Hodgkin's disease NOS
106349	B61z.11	Hodgkin lymphoma NOS
61662	B61z000	Hodgkin's disease NOS, unspecified site
59778	B61z100	Hodgkin's disease NOS of lymph nodes of head, face and neck
59755	B61z200	Hodgkin's disease NOS of intrathoracic lymph nodes
107804	B61z300	Hodgkin's disease NOS of intra-abdominal lymph nodes
91900	B61z400	Hodgkin's disease NOS of lymph nodes of axilla and arm
99012	B61z500	Hodgkin's disease NOS of lymph nodes inguinal region and leg
94279	B61z700	Hodgkin's disease NOS of spleen
97746	B61z800	Hodgkin's disease NOS of lymph nodes of multiple sites
42461	B61zz00	Hodgkin's disease NOS
33333	B62..00	Other malignant neoplasm of lymphoid and histiocytic tissue
5179	B620.00	Nodular lymphoma (Brill - Symmers disease)
66327	B620000	Nodular lymphoma of unspecified site
45264	B620100	Nodular lymphoma of lymph nodes of head, face and neck
105203	B620200	Nodular lymphoma of intrathoracic lymph nodes
92068	B620300	Nodular lymphoma of intra-abdominal lymph nodes
94995	B620500	Nodular lymphoma of lymph nodes of inguinal region and leg
58082	B620800	Nodular lymphoma of lymph nodes of multiple sites
65701	B620z00	Nodular lymphoma NOS
44267	B623.00	Malignant histiocytosis
69497	B623000	Malignant histiocytosis of unspecified site
94415	B623100	Malignant histiocytosis of lymph nodes head, face and neck
65642	B623300	Malignant histiocytosis of intra-abdominal lymph nodes
110903	B623800	Malignant histiocytosis of lymph nodes of multiple sites

Medcode	Read Code	Description
58871	B623z00	Malignant histiocytosis NOS
27330	B624.00	Leukaemic reticuloendotheliosis
5137	B624.11	Leukaemic reticuloendotheliosis
87335	B624.12	Hairy cell leukaemia
65122	B624000	Leukaemic reticuloendotheliosis of unspecified sites
65123	B624300	Leukaemic reticuloend of intra-abdominal lymph nodes
73777	B624z00	Leukaemic reticuloendotheliosis NOS
15036	B626.00	Malignant mast cell tumours
103900	B626000	Mast cell malignancy of unspecified site
100615	B626500	Mast cell malignancy of lymph nodes inguinal region and leg
31324	B626800	Mast cell malignancy of lymph nodes of multiple sites
89657	B626z00	Malignant mast cell tumour NOS
3604	B627.00	Non - Hodgkin's lymphoma
104391	B627.11	Non-Hodgkin lymphoma
28639	B627000	Follicular non-Hodgkin's small cleaved cell lymphoma
70842	B627100	Follicular non-Hodg mixed sml cleavd & lge cell lymphoma
49262	B627200	Follicular non-Hodgkin's large cell lymphoma
50668	B627300	Diffuse non-Hodgkin's small cell (diffuse) lymphoma
108182	B627400	Diffuse non-Hodgkin's small cleaved cell (diffuse) lymphoma
50695	B627500	Diffuse non-Hodgkin mixed sml & lge cell (diffuse) lymphoma
53551	B627600	Diffuse non-Hodgkin's immunoblastic (diffuse) lymphoma
17460	B627700	Diffuse non-Hodgkin's lymphoblastic (diffuse) lymphoma
65180	B627800	Diffuse non-Hodgkin's lymphoma undifferentiated (diffuse)
95715	B627900	Mucosa-associated lymphoma
101114	B627A00	Diffuse non-Hodgkin's large cell lymphoma
31576	B627B00	Other types of follicular non-Hodgkin's lymphoma
21549	B627C00	Follicular non-Hodgkin's lymphoma
17182	B627C11	Follicular lymphoma NOS
70509	B627D00	Diffuse non-Hodgkin's centroblastic lymphoma
102594	B627E00	Diffuse large B-cell lymphoma
105038	B627G00	Mediastinal (thymic) large B-cell lymphoma
31794	B627W00	Unspecified B-cell non-Hodgkin's lymphoma
39798	B627X00	Diffuse non-Hodgkin's lymphoma, unspecified
104152	B628.00	Follicular lymphoma
105889	B628000	Follicular lymphoma grade 1
105095	B628100	Follicular lymphoma grade 2
107166	B628200	Follicular lymphoma grade 3
105020	B628300	Follicular lymphoma grade 3a
107973	B628400	Follicular lymphoma grade 3b
106969	B628500	Diffuse follicle centre lymphoma
108719	B628600	Cutaneous follicle centre lymphoma
106063	B628700	Other types of follicular lymphoma
105335	B62A.00	Sarcoma of dendritic cells
105083	B62D.00	Histiocytic sarcoma
105085	B62E.00	T/NK-cell lymphoma

Medcode	Read Code	Description
105559	B62E100	Anaplastic large cell lymphoma, ALK-positive
105955	B62E200	Anaplastic large cell lymphoma, ALK-negative
104862	B62E300	Cutaneous T-cell lymphoma
109780	B62E400	Extranodal NK/T-cell lymphoma, nasal type
107949	B62E500	Hepatosplenic T-cell lymphoma
105709	B62E600	Enteropathy-associated T-cell lymphoma
105925	B62E700	Subcutaneous panniculitic T-cell lymphoma
105375	B62E800	Blastic NK-cell lymphoma
105636	B62E900	Angioimmunoblastic T-cell lymphoma
104934	B62Ew00	Other mature T/NK-cell lymphoma
106884	B62F.00	Nonfollicular lymphoma
106867	B62F.11	Non-follicular lymphoma
104386	B62F000	Small cell B-cell lymphoma
104620	B62F100	Mantle cell lymphoma
104412	B62F200	Lymphoblastic (diffuse) lymphoma
17887	B62x.00	Malignant lymphoma otherwise specified
90201	B62x000	T-zone lymphoma
57737	B62x100	Lymphoepithelioid lymphoma
12464	B62x200	Peripheral T-cell lymphoma
62437	B62x400	Malignant reticulosis
58962	B62x500	Malignant immunoproliferative small intestinal disease
95630	B62x600	True histiocytic lymphoma
44318	B62xX00	Oth and unspecif peripheral & cutaneous T-cell lymphomas
12335	B62y.00	Malignant lymphoma NOS
57427	B62y000	Malignant lymphoma NOS of unspecified site
50696	B62y100	Malignant lymphoma NOS of lymph nodes of head, face and neck
72725	B62y200	Malignant lymphoma NOS of intrathoracic lymph nodes
42579	B62y300	Malignant lymphoma NOS of intra-abdominal lymph nodes
34089	B62y400	Malignant lymphoma NOS of lymph nodes of axilla and arm
63105	B62y500	Malignant lymphoma NOS of lymph node inguinal region and leg
71262	B62y600	Malignant lymphoma NOS of intrapelvic lymph nodes
60092	B62y700	Malignant lymphoma NOS of spleen
15504	B62y800	Malignant lymphoma NOS of lymph nodes of multiple sites
15027	B62yz00	Malignant lymphoma NOS
65434	B62z.00	Malignant neoplasms of lymphoid and histiocytic tissue NOS
95792	B62zz00	Lymphoid and histiocytic malignancy NOS
37182	B63..00	Multiple myeloma and immunoproliferative neoplasms
4944	B630.00	Multiple myeloma
22158	B630000	Malignant plasma cell neoplasm, extramedullary plasmacytoma
39187	B631.00	Plasma cell leukaemia
43450	B63z.00	Immunoproliferative neoplasm or myeloma NOS
19372	B64..00	Lymphoid leukaemia
4222	B64..11	Lymphatic leukaemia
4251	B640.00	Acute lymphoid leukaemia
104325	B640000	B-cell acute lymphoblastic leukaemia

Medcode	Read Code	Description
8625	B641.00	Chronic lymphoid leukaemia
27790	B641.11	Chronic lymphatic leukaemia
104328	B641000	B-cell chronic lymphocytic leukaemia
107017	B641011	Chronic lymphocytic leukaemia of B-cell type
107052	B641100	Clinical stage A chronic lymphocytic leukaemia
106924	B641200	Clinical stage B chronic lymphocytic leukaemia
107163	B641300	Clinical stage C chronic lymphocytic leukaemia
72774	B642.00	Subacute lymphoid leukaemia
49725	B64y.00	Other lymphoid leukaemia
31586	B64y100	Prolymphocytic leukaemia
37461	B64y200	Adult T-cell leukaemia
108656	B64y300	B-cell prolymphocytic leukaemia
107643	B64y400	T-cell prolymphocytic leukaemia
104939	B64y500	Adult T-cell lymphoma/leukaemia (HTLV-1-associated)
38331	B64yz00	Other lymphoid leukaemia NOS
38914	B64z.00	Lymphoid leukaemia NOS
7176	B65..00	Myeloid leukaemia
4413	B650.00	Acute myeloid leukaemia
10726	B651.00	Chronic myeloid leukaemia
31701	B651.11	Chronic granulocytic leukaemia
100786	B651000	Chronic eosinophilic leukaemia
105957	B651100	Chronic myeloid leukaemia, BCR/ABL positive
102783	B651200	Chronic neutrophilic leukaemia
107236	B651300	Atypical chronic myeloid leukaemia, BCR/ABL negative
27520	B651z00	Chronic myeloid leukaemia NOS
63475	B652.00	Subacute myeloid leukaemia
70724	B653.00	Myeloid sarcoma
39629	B653100	Granulocytic sarcoma
104788	B654.00	Acute myeloblastic leukaemia
27664	B65y100	Acute promyelocytic leukaemia
66089	B65yz00	Other myeloid leukaemia NOS
33344	B65z.00	Myeloid leukaemia NOS
35875	B66..00	Monocytic leukaemia
108715	B66..11	Histiocytic leukaemia
67700	B66..12	Monoblastic leukaemia
19974	B660.00	Acute monocytic leukaemia
27458	B661.00	Chronic monocytic leukaemia
101606	B662.00	Subacute monocytic leukaemia
108424	B663.00	Acute monoblastic leukaemia
99015	B66y.00	Other monocytic leukaemia
103645	B66yz00	Other monocytic leukaemia NOS
93342	B66z.00	Monocytic leukaemia NOS
37272	B67..00	Other specified leukaemia
42539	B670.00	Acute erythraemia and erythroleukaemia
57671	B672.00	Megakaryocytic leukaemia

Medcode	Read Code	Description
65777	B672.11	Thrombocytic leukaemia
65721	B673.00	Mast cell leukaemia
110838	B676.00	Acute erythroid leukaemia
94174	B67y.00	Other and unspecified leukaemia
72197	B67y000	Lymphosarcoma cell leukaemia
99413	B67yz00	Other and unspecified leukaemia NOS
30632	B67z.00	Other specified leukaemia NOS
25191	B68..00	Leukaemia of unspecified cell type
4072	B680.00	Acute leukaemia NOS
16416	B681.00	Chronic leukaemia NOS
54793	B682.00	Subacute leukaemia NOS
34692	B68y.00	Other leukaemia of unspecified cell type
4250	B68z.00	Leukaemia NOS
20440	B69..00	Myelomonocytic leukaemia
61500	B690.00	Acute myelomonocytic leukaemia
22050	B691.00	Chronic myelomonocytic leukaemia
104475	B692.00	Subacute myelomonocytic leukaemia
105069	B693.00	Juvenile myelomonocytic leukaemia
30646	B6y..00	Malignant neoplasm lymphatic or haematopoietic tissue OS
49301	B6z..00	Malignant neoplasm lymphatic or haematopoietic tissue NOS
50290	B6z0.00	Kaposi's sarcoma of lymph nodes
19657	B911000	Malignant hydatidiform mole
5136	B911013	Choriocarcinoma
16854	B927.00	Neurofibromatosis - Von Recklinghausen's disease
12067	B927.11	Von Recklinghausen's disease
100900	B927.12	Neurofibromatosis type 1
101052	B929.00	Neurofibromatosis type 2
46423	B933.11	Cystosarcoma phyllodes
15543	BB01.00	[M]Neoplasm, uncertain whether benign or malignant
21868	BB02.00	[M]Neoplasm, malignant
3197	BB03.00	[M]Neoplasm, metastatic
22267	BB04.00	[M]Neoplasm, malig, uncertain whether primary or metastatic
5932	BB06.00	[M]Tumour cells, uncertain whether benign or malignant
8627	BB07.00	[M]Tumour cells, malignant
22156	BB08.00	[M]Malignant tumour, small cell type
24511	BB09.00	[M]Malignant tumour, giant cell type
32213	BB0A.00	[M]Malignant tumour, fusiform cell type
21914	BB11.11	[M]Intraepithelial carcinoma NOS
8695	BB12.00	[M]Carcinoma NOS
3152	BB13.00	[M]Carcinoma, metastatic, NOS
9366	BB13.11	[M]Secondary carcinoma
16692	BB14.00	[M]Carcinomatosis
57336	BB16.00	[M]Epithelioma, malignant
25961	BB17.00	[M]Large cell carcinoma NOS
21609	BB18.00	[M]Carcinoma, undifferentiated type, NOS

Medcode	Read Code	Description
12609	BB19.00	[M]Carcinoma, anaplastic type, NOS
26413	BB1A.00	[M]Pleomorphic carcinoma
48048	BB1B.00	[M]Giant cell and spindle cell carcinoma
35474	BB1C.00	[M]Giant cell carcinoma
6966	BB1D.00	[M]Spindle cell carcinoma
54276	BB1E.00	[M]Pseudosarcomatous carcinoma
69300	BB1F.00	[M]Polygonal cell carcinoma
61984	BB1G.00	[M]Spheroidal cell carcinoma
9291	BB1J.00	[M]Small cell carcinoma NOS
66541	BB1J.12	[M]Round cell carcinoma
9156	BB1K.00	[M]Oat cell carcinoma
67970	BB1L.00	[M]Small cell carcinoma, fusiform cell type
30988	BB1M.00	[M]Small cell carcinoma, intermediate cell
21217	BB1N.00	[M]Small cell-large cell carcinoma
106519	BB1P.00	[M]Non-small cell carcinoma
10541	BB22.00	[M]Papillary carcinoma NOS
34395	BB24.00	[M]Verrucous carcinoma NOS
43717	BB24.11	[M]Verrucous epidermoid carcinoma
4852	BB24.12	[M]Verrucous squamous cell carcinoma
20807	BB26.00	[M]Papillary squamous cell carcinoma
67912	BB26.11	[M]Papillary epidermoid carcinoma
19041	BB29.12	[M]Intraepidermal carcinoma NOS
19678	BB29.13	[M]Intraepithelial squamous cell carcinoma
1624	BB2A.00	[M]Squamous cell carcinoma NOS
56600	BB2A.11	[M]Epidermoid carcinoma NOS
57680	BB2A.12	[M]Spinous cell carcinoma
94873	BB2A.13	[M]Squamous cell carcinoma of skin NOS
24293	BB2B.00	[M]Squamous cell carcinoma, metastatic NOS
29787	BB2C.00	[M]Squamous cell carcinoma, keratinising type NOS
57513	BB2C.11	[M]Epidermoid carcinoma, keratinising type
59143	BB2D.00	[M]Squamous cell carcinoma, large cell, non-keratinising
41816	BB2E.00	[M]Squamous cell carcinoma, small cell, non-keratinising
45458	BB2F.00	[M]Squamous cell carcinoma, spindle cell type
31004	BB2G.00	[M]Adenoid squamous cell carcinoma
45510	BB2M.00	[M]Lymphoepithelial carcinoma
35457	BB35.00	[M]Basosquamous carcinoma
13574	BB36.00	[M]Metatypical carcinoma
1950	BB4..00	[M]Transitional cell papillomas and carcinomas
6436	BB43.00	[M]Transitional cell carcinoma NOS
12388	BB43.11	[M]Urothelial carcinoma
100111	BB46.00	[M]Schneiderian carcinoma
58798	BB47.00	[M]Transitional cell carcinoma, spindle cell type
38454	BB48.00	[M]Basaloid carcinoma
65216	BB49.00	[M]Cloacogenic carcinoma
9712	BB4A.00	[M]Papillary transitional cell carcinoma

Medcode	Read Code	Description
33897	BB4z.00	[M]Transitional cell papilloma or carcinoma NOS
19091	BB5..00	[M]Adenomas and adenocarcinomas
2272	BB5..11	[M]Adenocarcinomas
37137	BB51100	[M]Adenocarcinoma in situ in tubulovillous adenoma
8930	BB52.00	[M]Adenocarcinoma NOS
44778	BB52000	[M]Adenocarcinoma in tubulovillous adenoma
5455	BB53.00	[M]Adenocarcinoma, metastatic, NOS
48223	BB54.00	[M]Scirrhous adenocarcinoma
71895	BB56.00	[M]Superficial spreading adenocarcinoma
28272	BB57.00	[M]Adenocarcinoma, intestinal type
59240	BB58.00	[M]Carcinoma, diffuse type
8101	BB5a.00	[M]Renal adenoma and carcinoma
10668	BB5a000	[M]Renal cell carcinoma
35467	BB5az00	[M]Renal adenoma or carcinoma NOS
8032	BB5B.00	[M]Pancreatic adenomas and carcinomas
34096	BB5b.00	[M]Granular cell carcinoma
63102	BB5B100	[M]Islet cell carcinoma
95609	BB5B300	[M]Insulinoma, malignant
32294	BB5B500	[M]Glucagonoma, malignant
98825	BB5B600	[M]Mixed islet cell and exocrine adenocarcinoma
21659	BB5Bz00	[M]Pancreatic adenoma or carcinoma NOS
4217	BB5c.00	[M]Parathyroid adenomas and adenocarcinomas
26858	BB5C.00	[M]Gastrinoma and carcinomas
49629	BB5C100	[M]Gastrinoma, malignant
42169	BB5cz00	[M]Parathyroid adenoma or adenocarcinoma NOS
43594	BB5Cz00	[M]Gastrinoma or carcinoma NOS
36031	BB5D.00	[M]Hepatobiliary tract adenomas and carcinomas
70516	BB5D.11	[M]Biliary tract adenomas and adenocarcinomas
8711	BB5D100	[M]Cholangiocarcinoma
40438	BB5D111	[M]Bile duct carcinoma
41313	BB5D300	[M]Bile duct cystadenocarcinoma
40240	BB5D500	[M]Hepatocellular carcinoma NOS
26814	BB5D512	[M]Hepatoma, malignant
25641	BB5D513	[M]Liver cell carcinoma
107299	BB5D700	[M]Combined hepatocellular carcinoma and cholangiocarcinoma
110147	BB5D711	[M]Hepatocholangiocarcinoma
46771	BB5D800	[M]Hepatocellular carcinoma, fibrolamellar
53987	BB5Dz00	[M]Hepatobiliary adenoma or carcinoma NOS
111238	BB5dz00	[M]Mixed cell adenoma or adenocarcinoma NOS
19263	BB5f.00	[M]Thyroid adenoma and adenocarcinoma
98781	BB5F.00	[M]Trabecular adenocarcinoma
21741	BB5f100	[M]Follicular adenocarcinoma NOS
21847	BB5f111	[M]Follicular carcinoma
59918	BB5f200	[M]Follicular adenocarcinoma, well differentiated type
61467	BB5f300	[M]Follicular adenocarcinoma, trabecular type

Medcode	Read Code	Description
46761	BB5f600	[M]Papillary and follicular adenocarcinoma
68757	BB5f700	[M]Nonencapsulated sclerosing carcinoma
38685	BB5fz00	[M]Thyroid adenoma or adenocarcinoma NOS
60775	BB5h100	[M]Adrenal cortical carcinoma
8606	BB5j.00	[M]Endometrioid adenomas and carcinomas
33775	BB5J.00	[M]Adenoid cystic carcinoma
34879	BB5J.11	[M]Cylindroid adenocarcinoma
35747	BB5j100	[M]Endometrioid adenoma, borderline malignancy
9447	BB5j200	[M]Endometrioid carcinoma
103034	BB5j500	[M]Endometrioid adenofibroma, malignant
28388	BB5jz00	[M]Endometrioid adenoma or carcinoma NOS
50140	BB5K.00	[M]Cribriform carcinoma
18255	BB5L.00	[M]Adenomatous and adenocarcinomatous polyps
52326	BB5L100	[M]Adenocarcinoma in adenomatous polyp
73434	BB5L300	[M]Adenocarcinoma in multiple adenomatous polyps
36286	BB5Lz00	[M]Adenomatous or adenocarcinomatous polyp NOS
6746	BB5M.00	[M]Tubular adenomas and adenocarcinomas
60045	BB5M100	[M]Tubular adenocarcinoma
39148	BB5Mz00	[M]Tubular adenoma or adenocarcinoma NOS
41702	BB5N.00	[M]Adenomatous and adenocarcinomatous polyps of colon
19731	BB5N.11	[M]Adenoma or or adenocarcinoma in polyposis coli
73275	BB5N100	[M]Adenocarcinoma in adenomatous polposis coli
39875	BB5Nz00	[M]Adenomatous or adenocarcinomatous polyps of the colon NOS
94083	BB5P.00	[M]Solid carcinoma NOS
34110	BB5R100	[M]Carcinoid tumour, malignant
111172	BB5R300	[M]Carcinoid tumour, argentaffin, malignant
100625	BB5R500	[M]Carcinoid tumour, nonargentaffin, malignant
55468	BB5R600	[M]Mucocarcinoid tumour, malignant
26253	BB5R900	[M]Neuroendocrine carcinoma
32641	BB5RA00	[M]Merkel cell carcinoma
26848	BB5S.00	[M]Respiratory tract adenomas and adenocarcinomas
34015	BB5S200	[M]Bronchiolo-alveolar adenocarcinoma
36530	BB5S211	[M]Alveolar cell carcinoma
16723	BB5S212	[M]Bronchiolar carcinoma
57802	BB5S400	[M]Alveolar adenocarcinoma
36221	BB5Sz00	[M]Respiratory tract adenoma or adenocarcinoma NOS
42273	BB5T.00	[M]Papillary adenomas and adenocarcinomas
35348	BB5T100	[M]Papillary adenocarcinoma NOS
96494	BB5Tz00	[M]Papillary adenoma or adenocarcinoma NOS
6920	BB5U.00	[M]Villous adenomas and adenocarcinomas
67342	BB5U100	[M]Adenocarcinoma in villous adenoma
27849	BB5U200	[M]Villous adenocarcinoma
50108	BB5Uz00	[M]Villous adenoma or adenocarcinoma NOS
26120	BB5V.00	[M]Pituitary adenomas and carcinomas
68456	BB5V100	[M]Chromophobe carcinoma

Medcode	Read Code	Description
36876	BB5V311	[M]Eosinophil carcinoma
72277	BB5V700	[M]Basophil carcinoma
40622	BB5V711	[M]Mucoid cell carcinoma
57422	BB5Vz00	[M]Pituitary adenoma or carcinoma NOS
62199	BB5W.00	[M]Oxyphilic adenomas and adenocarcinomas
71497	BB5W100	[M]Oxyphilic adenocarcinoma
29008	BB5W111	[M]Hurthle cell adenocarcinoma
53129	BB5W112	[M]Oncytic adenocarcinoma
73662	BB5Wz00	[M]Oxyphilic adenoma or adenocarcinoma NOS
36882	BB5X.00	[M]Clear cell adenomas and adenocarcinomas
37354	BB5X100	[M]Clear cell adenocarcinoma NOS
72192	BB5Xz00	[M]Clear cell adenoma or adenocarcinoma NOS
35975	BB5z.00	[M]Adenoma or adenocarcinoma NOS
68783	BB60100	[M]Skin appendage carcinoma
52496	BB61.00	[M]Sweat gland adenoma and adenocarcinomas
71627	BB61200	[M]Sweat gland adenocarcinoma
24312	BB62.00	[M]Apocrine adenoma and adenocarcinomas
38575	BB62100	[M]Apocrine adenocarcinoma
104973	BB62z00	[M]Apocrine adenoma or adenocarcinoma NOS
28291	BB69.00	[M]Sebaceous adenoma and adenocarcinoma
34269	BB69100	[M]Sebaceous adenocarcinoma
91842	BB69z00	[M]Sebaceous adenoma or adenocarcinoma NOS
67913	BB6A.00	[M]Ceruminous adenoma and adenocarcinoma
28625	BB71.00	[M]Mucoepidermoid carcinoma
34984	BB80.00	[M]Cystadenoma and carcinoma
34000	BB80100	[M]Cystadenocarcinoma NOS
65207	BB80z00	[M]Cystadenoma or carcinoma NOS
17151	BB81.11	[M]Ovarian cystadenoma or carcinoma
38442	BB81200	[M]Serous cystadenocarcinoma, NOS
65051	BB81500	[M]Papillary cystadenocarcinoma, NOS
44930	BB81800	[M]Papillary serous cystadenocarcinoma
95150	BB81B00	[M]Serous surface papillary carcinoma
51656	BB81E00	[M]Mucinous cystadenocarcinoma NOS
66876	BB81E11	[M]Pseudomucinous adenocarcinoma
54749	BB81H00	[M]Papillary mucinous cystadenocarcinoma
40632	BB82.00	[M]Mucinous adenoma and adenocarcinoma
12497	BB82100	[M]Mucinous adenocarcinoma
30416	BB82111	[M]Colloid adenocarcinoma
95008	BB82112	[M]Gelatinous adenocarcinoma
59284	BB82114	[M]Mucous adenocarcinoma
64796	BB82z00	[M]Mucinous adenoma or adenocarcinoma NOS
44074	BB84.00	[M]Mucin-producing adenocarcinoma
39038	BB85.00	[M]Signet ring carcinoma
61588	BB85000	[M]Signet ring cell carcinoma
54874	BB85100	[M]Metastatic signet ring cell carcinoma

Medcode	Read Code	Description
94438	BB85z00	[M]Signet ring carcinoma NOS
27728	BB90.00	[M]Intraductal carcinoma, noninfiltrating NOS
8351	BB91.00	[M]Infiltrating duct carcinoma
21833	BB91.11	[M]Duct carcinoma NOS
30189	BB91000	[M]Intraductal papillary adenocarcinoma with invasion
39760	BB91100	[M]Infiltrating duct and lobular carcinoma
62871	BB92.00	[M]Comedocarcinoma, noninfiltrating
58131	BB93.00	[M]Comedocarcinoma NOS
40359	BB94.00	[M]Juvenile breast carcinoma
67701	BB94.11	[M]Secretory breast carcinoma
102593	BB96.00	[M]Noninfiltrating intraductal papillary adenocarcinoma
16677	BB9B.00	[M]Medullary carcinoma NOS
47920	BB9B.11	[M]C cell carcinoma
50946	BB9C.00	[M]Medullary carcinoma with amyloid stroma
98883	BB9D.00	[M]Medullary carcinoma with lymphoid stroma
12427	BB9F.00	[M]Lobular carcinoma NOS
7319	BB9G.00	[M]Infiltrating ductular carcinoma
32472	BB9H.00	[M]Inflammatory carcinoma
42542	BB9K.00	[M]Paget's disease and infiltrating breast duct carcinoma
12480	BB9K000	[M]Paget's disease and intraductal carcinoma of breast
3969	BB9M.00	[M]Intracystic carcinoma NOS
28178	BBa0.00	[M]Craniopharyngioma
37688	BBA2.00	[M]Acinar cell carcinoma
64874	BBa4.00	[M]Melanotic neuroectodermal tumour
12309	BBb..00	[M]Gliomas
12580	BBB0.00	[M]Adenosquamous carcinoma
31574	BBb0.00	[M]Glioma, malignant
8523	BBb0.11	[M]Glioma NOS
34252	BBb0.12	[M]Gliosarcoma
3710	BBB1.00	[M]Adenolymphoma
38551	BBb1.00	[M]Gliomatosis cerebri
16146	BBB2.00	[M]Adenocarcinoma with squamous metaplasia
68808	BBb2.00	[M]Mixed glioma
39386	BBb2.11	[M]Mixed glioma
42553	BBB3.00	[M]Adenocarcinoma with cartilaginous and osseous metaplasia
94267	BBb3.00	[M]Subependymal glioma
90487	BBb3.11	[M]Subependymal astrocytoma NOS
28344	BBb3.12	[M]Subependymal astrocytoma NOS
49168	BBb4.00	[M]Subependymal giant cell astrocytoma
94810	BBB4.00	[M]Adenocarcinoma with spindle cell metaplasia
66000	BBB5.00	[M]Adenocarcinoma with apocrine metaplasia
59415	BBB6100	[M]Thymoma, malignant
38770	BBB7.00	[M]Epithelial-myoepithelial carcinoma
41695	BBba.00	[M]Primitive neuroectodermal tumour
107884	BBba000	[M]Peripheral neuroectodermal tumour

Medcode	Read Code	Description
8547	BBbB.00	[M]Astrocytoma NOS
27748	BBbB.11	[M]Astrocytic glioma
8328	BBbC.00	[M]Astrocytoma, anaplastic type
45531	BBbE.00	[M]Gemistocytic astrocytoma
27846	BBbF.00	[M]Fibrillary astrocytoma
30273	BBbG.00	[M]Pilocytic astrocytoma
61783	BBbG.11	[M]Juvenile astrocytoma
98800	BBbG.12	[M]Piloid astrocytoma
23083	BBbL.00	[M]Glioblastoma NOS
9575	BBbL.11	[M]Glioblastoma multiforme
66064	BBbM.00	[M]Giant cell glioblastoma
27744	BBbQ.00	[M]Oligodendroglioma NOS
49186	BBbR.00	[M]Oligodendroglioma, anaplastic type
34763	BBbT.00	[M]Medulloblastoma NOS
65952	BBbU.00	[M]Desmoplastic medulloblastoma
37473	BBbW.00	[M]Cerebellar sarcoma NOS
27653	BBbz.00	[M]Glioma NOS
67587	BBbZ.00	[M]Pleomorphic xanthoastrocytoma
32357	BBc0.00	[M]Ganglioneuromatous neoplasms
34713	BBc0000	[M]Ganglioneuroma
39121	BBc0100	[M]Ganglioneuroblastoma
62567	BBc0200	[M]Ganglioneuromatosis
2123	BBc1.00	[M]Neuroblastoma NOS
31609	BBC4.00	[M]Granulosa cell tumour, malignant
31629	BBc6.00	[M]Ganglioglioma
68479	BBc7.11	[M]Neuroastrocytoma
28836	BBc9.00	[M]Retinoblastomas
103883	BBc9100	[M]Retinoblastoma, undifferentiated type
48952	BBc9z00	[M]Retinoblastoma NOS
29580	BBCA.00	[M]Sertoli cell carcinoma
51878	BBcC.00	[M]Aesthesioneuroblastoma
39388	BBcC.11	[M]Olfactory neuroblastoma
95373	BBCC100	[M]Leydig cell tumour, malignant
24924	BBD..00	[M]Paragangliomas and glomus tumours
10913	BBD0.00	[M]Paraganglioma NOS
95818	BBD1.00	[M]Paraganglioma, malignant
27363	BBd2.00	[M]Meningioma, malignant
60347	BBd2.11	[M]Leptomeningeal sarcoma
96798	BBd2.12	[M]Meningothelial sarcoma
101342	BBD3.00	[M]Parasympathetic paraganglioma
70320	BBD4.11	[M]Jugular paraganglioma
93717	BBD7.00	[M]Extra-adrenal paraganglioma, NOS
109110	BBD9.11	[M]Chromaffin paraganglioma
65047	BBDA.00	[M]Phaeochromocytoma, malignant
50605	BBDB.00	[M]Glomangiosarcoma

Medcode	Read Code	Description
106134	BBdB.00	[M]Meningeal sarcomatosis
105166	BBDB.11	[M]Glomoid sarcoma
52070	BBDE.00	[M]Gangliocytic paraganglioma
69421	BBDz.00	[M]Paraganglioma or glomus tumour NOS
579	BBE1.00	[M]Malignant melanoma NOS
765	BBe1.00	[M]Neurofibromatosis NOS
24551	BBE1.11	[M]Melanocarcinoma
36785	BBe1.11	[M]Multiple neurofibromatosis
23455	BBe1.12	[M]Von Recklinghausen's disease
44157	BBE1.13	[M]Melanosarcoma NOS
67966	BBE1.14	[M]Naevocarcinoma
51353	BBE1000	[M]Malignant melanoma, regressing
58835	BBE1100	[M]Desmoplastic melanoma, malignant
62941	BBe2.00	[M]Neurofibrosarcoma
69981	BBe7.00	[M]Neurilemmoma, malignant
37477	BBe7.11	[M]Schwannoma, malignant
40492	BBe9.00	[M]Triton tumour, malignant
63574	BBEC.00	[M]Malignant melanoma in junctional naevus
62088	BBEG.00	[M]Malignant melanoma in Hutchinson's melanotic freckle
22692	BBEG000	[M]Acral lentiginous melanoma, malignant
73251	BBEM.00	[M]Malignant melanoma in giant pigmented naevus
68447	BBEV.00	[M]Blue naevus, malignant
17366	BBF..00	[M]Soft tissue tumours and sarcomas NOS
41803	BBf..00	[M]Granular cell tumours and alveolar soft part sarcoma
8085	BBF1.00	[M]Sarcoma NOS
34891	BBF2.00	[M]Sarcomatosis NOS
71869	BBf2.00	[M]Alveolar soft part sarcoma
31026	BBF3.00	[M]Spindle cell sarcoma
97463	BBF4.00	[M]Giant cell sarcoma (except of bone)
46581	BBF4.11	[M]Pleomorphic cell sarcoma
58837	BBF5.00	[M]Small cell sarcoma
69844	BBF5.11	[M]Round cell sarcoma
62396	BBF6.00	[M]Epithelioid cell sarcoma
55116	BBFz.00	[M]Soft tissue tumour or sarcoma NOS
17178	BBg..00	[M]Lymphomas, NOS or diffuse
49131	BBg0.00	[M]Lymphomatous tumour, benign
31323	BBG1.00	[M]Fibrosarcoma NOS
36114	BBg1.00	[M]Malignant lymphoma NOS
1483	BBg1.11	[M]Lymphoma NOS
23711	BBg1000	[M]Malignant lymphoma, diffuse NOS
16460	BBg2.00	[M]Malignant lymphoma, non Hodgkin's type
3371	BBg2.11	[M]Non Hodgkins lymphoma
8088	BBG3.00	[M]Fibromyxosarcoma
71117	BBg3.00	[M]Malignant lymphoma, undifferentiated cell type NOS
46931	BBg4.00	[M]Malignant lymphoma, stem cell type

Medcode	Read Code	Description
69301	BBg5.00	[M]Malignant lymphoma, convoluted cell type NOS
99655	BBg6.00	[M]Lymphosarcoma NOS
41754	BBg7.00	[M]Malignant lymphoma, lymphoplasmacytoid type
48253	BBg8.00	[M]Malignant lymphoma, immunoblastic type
95024	BBG8.00	[M]Infantile fibrosarcoma
94286	BBG8.11	[M]Congenital fibrosarcoma
68964	BBgA.00	[M]Malignant lymphoma, centroblastic-centrocytic, diffuse
41841	BBgB.00	[M]Malignant lymphoma, follicular centre cell NOS
69980	BBgC.00	[M]Malignant lymphoma, lymphocytic, well differentiated NOS
21463	BBgC.11	[M]Lymphocytic lymphoma NOS
60504	BBgC.12	[M]Lymphocytic lymphosarcoma NOS
51852	BBgD.00	[M]Malig lymphoma, lymphocytic, intermediate different NOS
39906	BBgE.00	[M]Malignant lymphoma, centrocytic
37680	BBGF.00	[M]Fibrous histiocytoma, malignant
72196	BBgG.00	[M]Malignant lymphoma, lymphocytic, poorly different NOS
67203	BBgG.11	[M]Lymphoblastic lymphosarcoma NOS
34352	BBgG.12	[M]Lymphoblastic lymphoma NOS
72241	BBgH.00	[M]Prolymphocytic lymphosarcoma
60275	BBgJ.00	[M]Malignant lymphoma, centroblastic type NOS
96231	BBGJ.00	[M]Fibroxanthoma, malignant
35034	BBGJ.11	[M]Fibroxanthosarcoma
108682	BBgJ.11	[M]Germinoblastic sarcoma NOS
66603	BBgK.00	[M]Malig lymphoma, follicular centre cell, non-cleaved NOS
46877	BBgL.00	[M]Malignant lymphoma, small lymphocytic NOS
31726	BBgM.00	[M]Malignant lymphoma, small cleaved cell, diffuse
31772	BBGM.00	[M]Dermatofibrosarcoma NOS
61251	BBgN.00	[M]Malign lymphoma,lymphocytic,intermediate differn, diffuse
31090	BBGP.00	[M]Pigmented dermatofibrosarcoma protuberans
71652	BBgP.00	[M]Malignant lymphoma, mixed small and large cell, diffuse
58015	BBgQ.00	[M]Malignant lymphomatous polyposis
33869	BBgR.00	[M]Malignant lymphoma, large cell, diffuse NOS
63994	BBgS.00	[M]Malignant lymphoma, large cell, cleaved, diffuse
71619	BBgT.00	[M]Malignant lymphoma, large cell, noncleaved, diffuse
51680	BBgV.00	[M]Malignant lymphoma, small cell, noncleaved, diffuse
51895	BBgz.00	[M]Lymphoma, diffuse or NOS
106137	BBh..00	[M]Reticulosarcomas
72433	BBh0.00	[M]Reticulosarcoma NOS
49825	BBh0.11	[M]Reticulum cell sarcoma NOS
21732	BBH1.00	[M]Myxosarcoma
100544	BBh2.00	[M]Reticulosarcoma, nodular
20710	BBj..00	[M]Hodgkin's disease
61997	BBj0.00	[M]Hodgkin's disease NOS
101429	BBj0.11	[M]Lymphogranuloma, malignant
28599	BBJ1.00	[M]Liposarcoma NOS
56041	BBj1.00	[M]Hodgkin's disease, lymphocytic predominance

Medcode	Read Code	Description
101923	BBJ1.11	[M]Fibroliposarcoma
65584	BBj1000	[M]Hodgkin,s disease, lymphocytic predominance, diffuse
31537	BBj1100	[M]Hodgkin,s disease, lymphocytic predominance, nodular
51285	BBj2.00	[M]Hodgkin's disease, mixed cellularity
28628	BBJ3.00	[M]Liposarcoma, well differentiated type
111113	BBj3.00	[M]Hodgkin's disease, lymphocytic depletion NOS
96183	BBj4.00	[M]Hodgkin's disease,lymphocytic depletion,diffuse fibrosis
56676	BBJ5.00	[M]Myxoid liposarcoma
60127	BBJ5.12	[M]Myxoliposarcoma
42198	BBj6.00	[M]Hodgkin's disease, nodular sclerosis NOS
103708	BBJ6.00	[M]Round cell liposarcoma
40508	BBj6000	[M]Hodgkin,s disease, nodular sclerosis, lymphocytic predom
64343	BBj6100	[M]Hodgkin,s disease, nodular sclerosis, mixed cellularity
31741	BBj6200	[M]Hodgkin,s disease, nodular sclerosis, lymphocytic deplet
55947	BBJ7.00	[M]Pleomorphic liposarcoma
99200	BBj7.00	[M]Hodgkin's disease, nodular sclerosis, cellular phase
59651	BBJ8.00	[M]Mixed type liposarcoma
89230	BBj9.00	[M]Hodgkin's granuloma
7856	BBJH.00	[M]Dedifferentiated liposarcoma
42769	BBjz.00	[M]Hodgkin's disease NOS
20437	BBk..00	[M]Lymphomas, nodular or follicular
63699	BBk0.00	[M]Malignant lymphoma, nodular NOS
27562	BBk0.12	[M]Follicular lymphosarcoma NOS
49253	BBk0.13	[M]Giant follicular lymphoma
10588	BBK0200	[M]Leiomyosarcoma NOS
73916	BBK0400	[M]Epithelioid leiomyosarcoma
64596	BBK0700	[M]Myxoid leiomyosarcoma
67019	BBK1100	[M]Angiomyosarcoma
31818	BBK2.00	[M]Myoma and myosarcoma
98961	BBk2.00	[M]Malignant lymphoma, centroblastic-centrocytic, follicular
55268	BBK2100	[M]Myosarcoma
68999	BBK2z00	[M]Myoma or myosarcoma NOS
106970	BBk3.00	[M]Malig lymphoma, lymphocytic, well differentiated,nodular
31421	BBK3100	[M]Rhabdomyosarcoma NOS
57505	BBK3200	[M]Pleomorphic rhabdomyosarcoma
105944	BBK3300	[M]Mixed cell rhabdomyosarcoma
48275	BBK3600	[M]Embryonal rhabdomyosarcoma
63247	BBK3611	[M]Sarcoma botryoides
42082	BBK3700	[M]Alveolar rhabdomyosarcoma
97852	BBk7.00	[M]Malignant lymphoma, centroblastic type, follicular
40513	BBkz.00	[M]Lymphoma, nodular or follicular NOS
34030	BBL0.00	[M]Endometrial stromal sarcoma
66607	BBL4.00	[M]Mixed tumour, malignant, NOS
36870	BBL7111	[M]Adenosarcoma
17314	BBL7112	[M]Wilms' tumour

Medcode	Read Code	Description
57677	BBL8.00	[M]Hepatoblastoma
19334	BBL9.00	[M]Carcinosarcoma NOS
67934	BBLA.00	[M]Carcinosarcoma, embryonal type
87003	BBLC100	[M]Mesenchymoma, malignant
98797	BBLD.00	[M]Embryonal sarcoma
63518	BBLE.00	[M]Adenosarcoma
37510	BBLG.00	[M]Carcinoma in pleomorphic adenoma
17212	BBLH.00	[M]Rhabdoid sarcoma
18771	BBLJ.00	[M]Clear cell sarcoma of kidney
63973	BBm0.00	[M]Microglioma
70383	BBM0100	[M]Brenner tumour, malignant
63239	BBm1.00	[M]Malignant histiocytosis
70740	BBm1.11	[M]Malignant reticulosis
57544	BBm4.00	[M]True histiocytic lymphoma
40766	BBm5.00	[M] Peripheral T-cell lymphoma NOS
36242	BBM7.11	[M]Cystosarcoma phyllodes, benign
39312	BBM8.00	[M]Cystosarcoma phyllodes NOS
31492	BBm9.00	[M] Monocytoid B-cell lymphoma
59251	BBM9.00	[M]Cystosarcoma phyllodes, malignant
16774	BBmD.00	[M] Cutaneous lymphoma
18383	BBmH.00	[M] Large cell lymphoma
18744	BBn0.11	[M]Multiple myeloma
50379	BBN1.00	[M]Synovial sarcoma NOS
105073	BBN2.00	[M]Synovial sarcoma, spindle cell type
99702	BBn3.00	[M]Plasma cell tumour, malignant
57796	BBN4.00	[M]Synovial sarcoma, biphasic type
63286	BBN5.00	[M]Clear cell sarcoma of tendons and aponeuroses
70951	BBP0.00	[M]Mesothelioma, benign
27509	BBP1.00	[M]Mesothelioma, malignant
94239	BBp1.00	[M]Mast cell sarcoma
67339	BBp2.00	[M]Malignant mastocytosis
96515	BBP2.00	[M]Fibrous mesothelioma, benign
104720	BBP3.11	[M]Sarcomatoid mesothelioma
100375	BBP4.00	[M]Epithelioid mesothelioma, benign
47734	BBP5.00	[M]Epithelioid mesothelioma, malignant
86820	BBP7.00	[M]Mesothelioma, biphasic type, malignant
38756	BBP9.00	[M]Cystic mesothelioma
21770	BBPX.00	[M]Mesothelioma, unspecified
17468	BBQ..00	[M]Germ cell neoplasms
7476	BBQ1.00	[M]Seminomas
57084	BBQ1000	[M]Seminoma, anaplastic type
35223	BBQ1100	[M]Spermatocytic seminoma
9859	BBQ1z00	[M]Seminoma NOS
28941	BBQ3.00	[M]Embryonal carcinoma NOS
104147	BBQ4.11	[M]Infantile embryonal carcinoma

Medcode	Read Code	Description
33636	BBQ7200	[M]Teratoma, malignant, NOS
52493	BBQ7213	[M]Teratoblastoma, malignant
37542	BBQ7300	[M]Teratocarcinoma
61542	BBQ7400	[M]Malignant teratoma, undifferentiated type
21682	BBQ7500	[M]Malignant teratoma, intermediate type
65861	BBQ9.00	[M]Dermoid cyst with malignant transformation
71301	BBQA100	[M]Struma ovarii, malignant
35071	BBQB.00	[M]Mixed germ cell tumour
43582	BBQz.00	[M]Germ cell neoplasm NOS
4637	BBr..00	[M]Leukaemias
40420	BBr0.00	[M]Leukaemias unspecified
41734	BBr0000	[M]Leukaemia NOS
6316	BBr0100	[M]Acute leukaemia NOS
22071	BBr0111	[M]Blast cell leukaemia
64963	BBr0112	[M]Blastic leukaemia
63570	BBr0113	[M]Stem cell leukaemia
72179	BBr0200	[M]Subacute leukaemia NOS
31750	BBr0300	[M]Chronic leukaemia NOS
72310	BBr0400	[M]Aleukaemic leukaemia NOS
59929	BBr0z00	[M]Leukaemia unspecified, NOS
48155	BBr2.00	[M]Lymphoid leukaemias
67712	BBR2.00	[M]Choriocarcinoma
12146	BBr2000	[M]Lymphoid leukaemia NOS
20635	BBr2011	[M]Lymphatic leukaemia
37410	BBr2100	[M]Acute lymphoid leukaemia
41500	BBr2300	[M]Chronic lymphoid leukaemia
46048	BBr2500	[M]Prolymphocytic leukaemia
50928	BBr2600	[M]Burkitt's cell leukaemia
29335	BBr2700	[M]Adult T-cell leukaemia/lymphoma
54627	BBR3.00	[M]Choriocarcinoma combined with teratoma
64618	BBr3.00	[M]Plasma cell leukaemias
110349	BBr3z00	[M]Plasma cell leukaemia NOS
29945	BBR4.00	[M]Malignant teratoma, trophoblastic
46444	BBr4.00	[M]Erythroleukaemias
70935	BBr4000	[M]Erythroleukaemia
100927	BBr4z00	[M]Erythroleukaemia NOS
35697	BBr6.00	[M]Myeloid leukaemias
71850	BBr6000	[M]Myeloid leukaemia NOS
37723	BBr6011	[M]Granulocytic leukaemia NOS
54585	BBr6100	[M]Acute myeloid leukaemia
106483	BBr6200	[M]Subacute myeloid leukaemia
52942	BBr6300	[M]Chronic myeloid leukaemia
66694	BBr6311	[M]Naegeli-type monocytic leukaemia
57316	BBr6600	[M]Acute promyelocytic leukaemia
46263	BBr6700	[M]Acute myelomonocytic leukaemia

Medcode	Read Code	Description
48049	BBr6800	[M]Chronic myelomonocytic leukaemia
108964	BBr6900	[M]Juvenile myelomonocytic leukaemia
62330	BBr6z00	[M]Other myeloid leukaemia NOS
106197	BBr7000	[M]Basophilic leukaemia
57713	BBr8.00	[M]Eosinophilic leukaemias
71377	BBr8000	[M]Eosinophilic leukaemia
107773	BBr8z00	[M]Eosinophilic leukaemia NOS
73088	BBr9000	[M]Monocytic leukaemia NOS
73066	BBrA.00	[M]Miscellaneous leukaemias
72222	BBrA100	[M]Megakaryocytic leukaemia
69299	BBrA111	[M]Thrombocytic leukaemia
96893	BBrA300	[M]Myeloid sarcoma
98009	BBrA312	[M]Granulocytic sarcoma
5915	BBrA400	[M]Hairy cell leukaemia
49327	BBrA500	[M]Acute megakaryoblastic leukaemia
108316	BBrAz00	[M]Miscellaneous leukaemia NOS
42297	BBrz.00	[M]Leukaemia NOS
62348	BBT1.00	[M]Haemangiosarcoma
22650	BBT1.11	[M]Angiosarcoma
98322	BBT7100	[M]Haemangioendothelioma, malignant
27439	BBTA.00	[M]Kaposi's sarcoma
105296	BBTD200	[M]Haemangiopericytoma, malignant
38481	BBTK.00	[M]Epithelioid haemangioendothelioma, malignant
57729	BBU1.00	[M]Lymphangiosarcoma
39522	BBV..00	[M]Osteomas and osteosarcomas
99665	BBV..11	[M]Juxtacortical osteogenic sarcoma
63571	BBV..12	[M]Parosteal osteosarcoma
105275	BBV..13	[M]Periosteal osteogenic sarcoma
31749	BBv0.00	[M]Monocytoid B-cell lymphoma
8660	BBV1.00	[M]Osteosarcoma NOS
49862	BBV1.11	[M]Osteoblastic sarcoma
59310	BBV1.12	[M]Osteochondrosarcoma
5052	BBV1.13	[M]Osteogenic sarcoma NOS
24539	BBV2.00	[M]Chondroblastic osteosarcoma
27965	BBv2.00	[M]AngiocentricT-cell lymphoma
21447	BBV3.00	[M]Fibroblastic osteosarcoma
22561	BBV4.00	[M]Telangiectatic osteosarcoma
60631	BBV5.00	[M]Osteosarcoma in Paget's disease of bone
4118	BBV9.00	[M]Myxoid chondrosarcoma
29337	BBVA.00	[M] Small cell osteosarcoma
48271	BBVz.00	[M]Osteoma or osteosarcoma NOS
7941	BBW4.00	[M]Chondrosarcoma NOS
68220	BBW4.11	[M]Fibrochondrosarcoma
63659	BBW6.00	[M]Juxtacortical chondrosarcoma
98559	BBW8.00	[M]Chondroblastoma, malignant

Medcode	Read Code	Description
52684	BBW9.00	[M]Mesenchymal chondrosarcoma
68956	BBX1.00	[M]Giant cell tumour of bone, malignant
50859	BBX1.11	[M]Giant cell bone sarcoma
31673	BBX1.12	[M]Osteoclastoma, malignant
99797	BBX3.00	[M]Malignant giant cell tumour of soft parts
4473	BBY0.00	[M]Ewing's sarcoma
49023	BBY0.11	[M]Endothelial bone sarcoma
72443	BBZ2.00	[M]Odontogenic tumour, malignant
93175	BBZ2.11	[M]Intraosseous carcinoma
46741	BBZC.00	[M]Ameloblastic odontosarcoma
97593	BBZG.00	[M]Ameloblastoma, malignant
100267	BBZG.11	[M]Adamantinoma, malignant
68730	BBZN.00	[M]Ameloblastic fibrosarcoma
98483	BBZN.11	[M]Odontogenic fibrosarcoma
58973	Byu0.00	[X]Malignant neoplasm of lip, oral cavity and pharynx
35180	Byu1.00	[X]Malignant neoplasm of digestive organs
43490	Byu1100	[X]Other specified carcinomas of liver
45766	Byu1200	[X]Malignant neoplasm of intestinal tract, part unspecified
49292	Byu1300	[X]Malignant neoplsm/ill-defin sites within digestive system
35325	Byu2.00	[X]Malignant neoplasm of respiratory and intrathoracic orga
40595	Byu2000	[X]Malignant neoplasm of bronchus or lung, unspecified
66444	Byu2100	[X]Malignant neoplasm/overlap lesion/heart,mediastinm+pleura
99096	Byu2300	[X]Malignant neopl/overlapping les/resp+intrathoracic organs
86997	Byu2400	[X]Malignant neoplasm/ill-defined sites within resp system
50292	Byu2500	[X]Malignant neoplasm of mediastinum, part unspecified
40749	Byu3.00	[X]Malignant neoplasm of bone and articular cartilage
73296	Byu3100	[X]Malignant neoplasm/bones+articular cartilage/limb,unspfd
63300	Byu3200	[X]Malignant neoplasm/overlap lesion/bone+articulr cartilage
43151	Byu3300	[X]Malignant neoplasm/bone+articular cartilage, unspecified
19144	Byu4.00	[X]Melanoma and other malignant neoplasms of skin
56925	Byu4000	[X]Malignant melanoma of other+unspecified parts of face
19444	Byu4100	[X]Malignant melanoma of skin, unspecified
57184	Byu4200	[X]Oth malignant neoplasm/skin of oth+unspecfd parts of face
56121	Byu4300	[X]Malignant neoplasm of skin, unspecified
40592	Byu5.00	[X]Malignant neoplasm of mesothelial and soft tissue
67034	Byu5000	[X]Mesothelioma of other sites
21715	Byu5011	[X]Mesothelioma of lung
30526	Byu5100	[X]Mesothelioma, unspecified
93665	Byu5300	[X]Kaposi's sarcoma, unspecified
101668	Byu5400	[X]Malignant neoplasm/peripheral nerves of trunk,unspecified
95671	Byu5700	[X]Malignant neoplasm of peritoneum, unspecified
91457	Byu5900	[X]Malignant neoplasm/connective + soft tissue,unspecified
60162	Byu5A00	[X]Malignant neoplasm overlapping lesion of skin
98361	Byu5B00	[X]Kaposi's sarcoma of other sites
12499	Byu6.00	[X]Malignant neoplasm of breast

Medcode	Read Code	Description
40598	Byu7.00	[X]Malignant neoplasm of female genital organs
64497	Byu7000	[X]Malignant neoplasm of uterine adnexa, unspecified
57756	Byu7100	[X]Malignant neoplasm/other specified female genital organs
55588	Byu7300	[X]Malignant neoplasm of female genital organ, unspecified
40671	Byu8.00	[X]Malignant neoplasm of male genital organs
57191	Byu8000	[X]Malignant neoplasm/other specified male genital organs
45262	Byu8200	[X]Malignant neoplasm of male genital organ, unspecified
35113	Byu9.00	[X]Malignant neoplasm of urinary tract
45260	Byu9000	[X]Malignant neoplasm of urinary organ, unspecified
35285	ByuA.00	[X]Malignant neoplasm of eye, brain and other parts of cent
68027	ByuA000	[X]Malignant neoplasm/other and unspecified cranial nerves
41515	ByuA100	[X]Malignant neoplasm/central nervous system, unspecified
63925	ByuA200	[X]Malignant neoplasm of meninges, unspecified
64309	ByuB100	[X]Malignant neoplasm of endocrine gland, unspecified
35186	ByuC.00	[X]Malignant neoplasm of ill-defined, secondary and unspeci
39027	ByuC000	[X]Malignant neoplasm of other specified sites
96226	ByuC100	[X]Malignant neoplasm/overlap lesion/other+ill-defined sites
66163	ByuC200	[X]2ndry+unspcf malignant neoplasm lymph nodes/multi regions
57481	ByuC300	[X]Secondary malignant neoplasm/oth+unspc respiratory organs
88022	ByuC400	[X]Secondary malignant neoplasm/oth+unspcfd digestive organs
97091	ByuC500	[X]2ndry malignant neoplasm/bladder+oth+unsp urinary organs
68332	ByuC600	[X]2ndry malignant neoplasm/oth+unspec parts/nervous system
54253	ByuC700	[X]Secondary malignant neoplasm of other specified sites
52029	ByuC800	[X]Malignant neoplasm without specification of site
40740	ByuD.00	[X]Malignant neoplasms of lymphoid, haematopoietic and rela
43415	ByuD000	[X]Other Hodgkin's disease
67518	ByuD100	[X]Other types of follicular non-Hodgkin's lymphoma
98596	ByuD200	[X]Other types of diffuse non-Hodgkin's lymphoma
64336	ByuD300	[X]Other specified types of non-Hodgkin's lymphoma
102688	ByuD400	[X]Other malignant immunoproliferative diseases
67029	ByuD500	[X]Other lymphoid leukaemia
61693	ByuD600	[X]Other myeloid leukaemia
89762	ByuD700	[X]Other monocytic leukaemia
89329	ByuD800	[X]Other specified leukaemias
65165	ByuD900	[X]Other leukaemia of unspecified cell type
64515	ByuDC00	[X]Diffuse non-Hodgkin's lymphoma, unspecified
109714	ByuDD00	[X]Oth and unspecif peripheral & cutaneous T-cell lymphomas
63375	ByuDE00	[X]Unspecified B-cell non-Hodgkin's lymphoma
8649	ByuDF00	[X]Non-Hodgkin's lymphoma, unspecified type
7940	ByuDF11	[X]Non-Hodgkin's lymphoma NOS
63598	ByuE.00	[X]Malignant neoplasms/independent (primary) multiple sites
64897	ByuE000	[X]Malignant neoplasms/independent(primary)multiple sites
93380	C10N100	Cystic fibrosis related diabetes mellitus
30119	C1zy100	Progeria
32464	C300000	Cystinosis

Medcode	Read Code	Description
111077	C300800	Juvenile nephropathic cystinosis
109608	C300A00	Congenital Fanconi syndrome
99711	C302511	Oculocerebrorenal syndrome
59343	C302512	Oculocerebrorenal dystrophy
16038	C303300	Maple syrup urine disease
102171	C304400	Sulphite oxidase deficiency
62395	C306100	Citrullinaemia
66155	C306200	Argininosuccinic aciduria
42017	C306400	Hyperammonaemia
10166	C307000	Hyperglycinaemia
42636	C307y11	Methylmalonic acidaemia
44871	C308000	Medium chain acyl-CoA dehydrogenase deficiency
107840	C308100	Multiple acyl-CoA dehydrogenase deficiencies
108041	C308200	X-linked adrenoleucodystrophy
57139	C30y800	Glutaric aciduria Type 1
59001	C310112	Pompe's disease
63359	C315000	Pyruvate dehydrogenase deficiency
105956	C315200	Kearns-Sayre syndrome
35649	C31y200	Oxalosis
1391	C327100	Gaucher's disease
46516	C327200	Niemann-Pick disease
109868	C327300	Wolman disease
12204	C354A00	Metastatic calcification
32874	C362z11	Acidaemia NOS
6220	C370.00	Cystic fibrosis
65344	C370000	Cystic fibrosis with no meconium ileus
69017	C370100	Cystic fibrosis with meconium ileus
36622	C370111	Meconium ileus in cystic fibrosis
18914	C370200	Cystic fibrosis with pulmonary manifestations
18905	C370300	Cystic fibrosis with intestinal manifestations
100610	C370400	Arthropathy in cystic fibrosis
103224	C370500	Cystic fibrosis with distal intestinal obstruction syndrome
110454	C370700	Liver disease due to cystic fibrosis
102922	C370800	Cystic fibrosis related cirrhosis
106432	C370900	Exacerbation of cystic fibrosis
73065	C370y00	Cystic fibrosis with other manifestations
49770	C370z00	Cystic fibrosis NOS
108623	C372.11	Lesch - Nyhan syndrome
62644	C372011	Lesch - Nyhan syndrome
67927	C372300	Lesch-Nyhan syndrome
22851	C375.00	Mucopolysaccharidosis
103891	C375.13	Hurler's syndrome
111036	C375.18	Sanfilippo's syndrome
69381	C375100	Mucopolysaccharidosis, type 1
33390	C375112	Hurler's syndrome

Medcode	Read Code	Description
61650	C375200	Mucopolysaccharidosis, type II
16443	C375211	Hunter's syndrome
70439	C375300	Mucopolysaccharidosis, type III
43712	C375311	Sanfilippo syndrome
103139	C375400	Mucopolysaccharidosis, type IV
62762	C375600	Mucopolysaccharidosis, type VI
104999	C375z00	Mucopolysaccharidosis NOS
69613	C377100	Mucolipidosis type III
10955	C391100	Di George syndrome
48293	C392100	Severe combined immunodeficiency
31541	C392300	Severe combined immunodefiency with reticular dysgenesis
66073	C392400	Severe combined immunodef with low T- and B-cell numbers
49542	C392500	Severe combined immunodef with low or normal B-cell numbers
37539	D2...00	Aplastic and other anaemias
15422	D20..00	Aplastic anaemia
69027	D200.00	Constitutional aplastic anaemia
69061	D200011	Constitutional aplastic anaemia without malformation
34754	D200100	Fanconi's familial refractory anaemia
64625	D200111	Fanconi's hypoplastic anaemia
102848	D200200	Constitutional aplastic anaemia with malformation
15658	D201.00	Acquired aplastic anaemia
21723	D201z00	Acquired aplastic anaemia NOS
41142	D204.00	Idiopathic aplastic anaemia
68087	D20z.00	Aplastic anaemia NOS
48145	D212000	Anaemia in ovarian carcinoma
56540	D40y400	Leukaemoid reaction
54106	Eu02100	[X]Dementia in Creutzfeldt-Jakob disease
37014	Eu02200	[X]Dementia in Huntington's disease
41185	Eu02400	[X]Dementia in human immunodef virus [HIV] disease
31042	Eu84200	[X]Rett's syndrome
54934	F030400	Encephalitis due to herpes simplex virus
41245	F030411	Herpes simplex encephalitis
43203	F100.00	Leucodystrophy
45903	F100000	Krabbe's disease
97092	F100100	Schulz's disease
53382	F100200	Pelizaeus-Merzbacher disease
59855	F100300	Metachromatic leucodystrophy
59035	F100z00	Leucodystrophy NOS
56951	F101200	Spielmeyer-Vogt (Batten) disease
49181	F101400	Gangliosidosis
93963	F101600	Sandhoff disease
65343	F102100	Cerebral degeneration in Niemann-Pick disease
63652	F103000	Cerebral degeneration in Hunter's disease
67762	F103100	Cerebral degeneration in mucopolysaccharidoses
48211	F10y000	Alper's disease

Medcode	Read Code	Description
48300	F10y100	Leigh's disease
102921	F10y200	PEHO syndrome
48531	F11x700	Cerebral degeneration due to Jakob - Creutzfeldt disease
33353	F11y000	Reye's syndrome
5443	F122.00	Malignant neuroleptic syndrome
55636	F130100	Hallervorden-Spatz disease
47974	F130600	Aicardi Goutieres syndrome
3591	F134.00	Huntington's chorea
4165	F140.00	Friedreich's ataxia
108131	F146.00	Early onset cerebellar ataxia with hypogonadism
73583	F14y000	Ataxia-telangiectasia
33334	F150.00	Werdnig - Hoffmann disease
95615	F150.11	Infantile spinal muscular atrophy
9179	F151.00	Spinal muscular atrophy
70572	F151000	Unspecified spinal muscular atrophy
101222	F151111	Juvenile spinal muscular atrophy
57632	F151z00	Spinal muscular atrophy NOS
27377	F152200	Progressive bulbar palsy
684	F20..00	Multiple sclerosis
40344	F200.00	Multiple sclerosis of the brain stem
23730	F202.00	Generalised multiple sclerosis
2298	F203.00	Exacerbation of multiple sclerosis
96291	F204.00	Benign multiple sclerosis
96607	F206.00	Primary progressive multiple sclerosis
95972	F207.00	Relapsing and remitting multiple sclerosis
96246	F208.00	Secondary progressive multiple sclerosis
20493	F20z.00	Multiple sclerosis NOS
105035	F211.00	Schilder's disease
102338	F21y600	Vanishing white matter disease
21249	F232.00	Congenital quadriplegia
48126	F232.11	Tetraplegia - congenital
9271	F240.00	Quadriplegia
16117	F240.11	Tetraplegia
35540	F240100	Spastic tetraplegia
34792	F250500	Lennox-Gastaut syndrome
4478	F256.00	Infantile spasms
39023	F256.12	West syndrome
7945	F256000	Hypsarrhythmia
23415	F256100	Salaam attacks
49322	F256z00	Infantile spasms NOS
105679	F25G.11	Dravet syndrome
8267	F363.00	Refsum's disease
30537	F373.00	Polyneuropathy in malignant disease
96256	F37y100	Axonal sensorimotor neuropathy
57551	F381100	Myasthenic syndrome due to other malignancy

Medcode	Read Code	Description
53317	F383.00	Congenital and developmental myasthenia
64690	F390.00	Congenital hereditary muscular dystrophy
34704	F390100	Central core disease
25429	F390300	Myotubular myopathy
36566	F390400	Nemaline body disease
103722	F390500	Congenital myopathy
22174	F390z00	Congenital hereditary muscular dystrophy NOS
5393	F391000	Duchenne muscular dystrophy
28210	F391300	Other limb-girdle muscular dystrophy
44272	F391B00	Cardiomyopathy in Duchenne muscular dystrophy
49482	F396200	Myopathy due to malignant disease
5964	F39B.00	Muscular dystrophy
63376	F402100	Malignant myopia
73742	F427K00	Lipofuscinosis NOS
97454	F427K11	Lipofuscinosis NEC
67906	F431400	Metastatic disseminated retinitis
85190	F562100	Malignant positional vertigo
59155	Fy04.11	Ondine's curse
50157	G210.00	Malignant hypertensive heart disease
72668	G210100	Malignant hypertensive heart disease with CCF
31755	G240.00	Secondary malignant hypertension
59383	G240000	Secondary malignant renovascular hypertension
73293	G240z00	Secondary malignant hypertension NOS
241	G30..00	Acute myocardial infarction
1204	G30..14	Heart attack
245	G410.00	Primary pulmonary hypertension
3204	G55..00	Cardiomyopathy
8010	G551.00	Hypertrophic obstructive cardiomyopathy
41488	G554100	Constrictive cardiomyopathy
21852	G554200	Familial cardiomyopathy
7535	G554400	Primary dilated cardiomyopathy
70855	G558000	Cardiomyopathy in Friedreich's ataxia
27683	G558100	Cardiomyopathy in myotonic dystrophy
64837	G558200	Dystrophic cardiomyopathy
9402	G55y.11	Secondary dilated cardiomyopathy
22993	G55z.00	Cardiomyopathy NOS
7593	H51y700	Malignant pleural effusion
39945	J600011	Acute liver failure
21769	J625.11	[X] Liver failure
23775	J62y.12	Liver failure NOS
48879	J637.00	Hepatic veno-occlusive disease
63786	K01w.00	Congenital nephrotic syndrome
72303	K01w000	Finnish nephrosis syndrome
108591	K01w100	Drash syndrome
108922	K01w112	Wilms' tumour + nephrotic syndrome + pseudohermaphroditism

Medcode	Read Code	Description
110749	K01w200	Congenital nephrotic syndrome with focal glomerulosclerosis
111370	K01wz00	Congenital nephrotic syndrome NOS
512	K05..00	Chronic renal failure
53852	K05..12	End stage renal failure
6712	K050.00	End stage renal failure
58671	K0A5300	Heredtry nephrpthy NEC difus mesangial prolif glomnephrit
61930	Kyu2.00	[X]Renal failure
38608	L250.11	Suspect fetal anencephaly
66019	L254.11	Suspect fetal damage from maternal alcohol
26111	M162800	Lymphomatoid papulosis
31418	N233000	Arthrogryposis
23320	N233011	Arthrogryposis multiplex congenita.
65405	N237300	Pseudosarcomatous fibromatosis
72707	P0...00	Anencephalus and similar anomalies
11531	P00..00	Anencephalus
68181	P002.11	Hemianencephaly
109394	P00y.00	Other specified anencephalus
66499	P00z.00	Anencephalus NOS
94467	P0z..00	Anencephalus and similar anomalies NOS
3947	P1...00	Spina bifida
46790	P10..00	Spina bifida with hydrocephalus
42497	P100.00	Unspecified spina bifida with hydrocephalus
5306	P100000	Spina bifida with hydrocephalus, unspecified
109243	P100100	Cervical spina bifida with hydrocephalus
50565	P100200	Thoracic spina bifida with hydrocephalus
57113	P100300	Lumbar spina bifida with hydrocephalus
98298	P100z00	Spina bifida with hydrocephalus NOS
98811	P102.00	Spina bifida with hydrocephalus - open
57243	P102200	Thoracic spina bifida with hydrocephalus - open
103284	P102300	Lumbar spina bifida with hydrocephalus - open
60623	P102400	Sacral spina bifida with hydrocephalus - open
47288	P102z00	Spina bifida with hydrocephalus - open NOS
93902	P103.00	Spina bifida with hydrocephalus - closed
90482	P103z11	Thoracolumbar spina bifida with hydrocephalus - closed
73085	P10y.00	Other specified spina bifida with hydrocephalus
59218	P10y000	Dandy - Walker syndrome with spina bifida
64717	P10z.00	Spina bifida with hydrocephalus NOS
21802	P1z..00	Spina bifida NOS
5712	P21..00	Microcephalus
85988	P210.00	Hydromicrocephaly
33939	P21z.00	Microcephalus NOS
34950	P223.11	Lissencephaly
34161	P225.00	Holoprosencephaly
42784	P226.00	Microgyria
98753	P228300	Aicardi syndrome

Medcode	Read Code	Description
34921	P22y111	Joubert syndrome
18537	P233.11	Dandy - Walker syndrome
46583	P234.00	Hydranencephaly
28824	P240200	Schizencephaly
105186	P26..00	Disorder of neuronal migration and differentiation
2816	P51..00	Transposition of great vessels
69858	P510.00	Total great vessel transposition
102980	P511200	Incomplete great vessel transposition
63390	P512.00	Corrected great vessel transposition
62169	P51y.00	Other specified transposition of great vessels
61100	P51y.11	Transposition of aorta
73539	P51z.00	Great vessel transposition NOS
100622	P51z.11	Transposition of arterial trunk NEC
9011	P543.00	Eisenmenger's complex
3862	P601.00	Congenital atresia of the pulmonary valve
93561	P601z00	Congenital atresia of pulmonary valve NOS
20772	P67..00	Hypoplastic left heart syndrome
31112	P732.00	Pulmonary artery atresia
32508	P738.00	Atresia of pulmonary artery with septal defect
51911	P74z800	Atresia of pulmonary vein
52258	PB33.00	Total intestinal aganglionosis
53517	PB33.12	Congenital aganglionic megacolon
44201	PB57.00	Microcolon
24437	PB5z.12	Short bowel syndrome
25597	PB61.00	Biliary atresia
50444	PB61z00	Biliary atresia NOS
63634	PD00000	Bilateral renal agenesis
23960	PD03011	Potter's syndrome
73612	PE02.00	Potter's facies
50251	PF55100	Acrocephalosyndactyly (Pfeiffer)
38479	PFy0.00	Arthrogryposis multiplex congenita
36839	PFy1.00	Larsen's syndrome
60165	PFy4.00	Other arthrogryposis syndromes
33811	PG4D.00	Metaphyseal chondrodysplasia
48184	PG4E.00	Spondylometaphyseal dysplasia
4158	PG51.00	Osteogenesis imperfecta
103017	PG51200	Osteogenesis imperfecta - unclassifiable
58635	PG51300	Osteogenesis imperfecta type I
98662	PG51400	Osteogenesis imperfecta type II
69436	PG51500	Osteogenesis imperfecta type III
97751	PG51600	Osteogenesis imperfecta type IV
53933	PG51z00	Osteogenesis imperfecta NOS
15343	PG52.00	Osteopetrosis
44759	PG52000	Osteopetrosis - unclassified
93177	PG52100	Osteopetrosis - congenita type

Medcode	Read Code	Description
103646	PG52200	Osteopetrosis - tarda type
18321	PG56012	Conradi - Hunermann syndrome
11513	PH30.00	Congenital ectodermal dysplasia
4272	PH3y200	Epidermolysis bullosa
46794	PH3y800	Epidermolysis bullosa letalis
35420	PH3y900	Epidermolysis bullosa dystrophica
65121	PHz..11	Congenital ectodermal defect
35665	PJ1..00	Patau's syndrome - trisomy 13
72139	PJ10.00	Trisomy 13, meiotic nondisjunction
43565	PJ11.00	Trisomy 13, mosaicism
46133	PJ12.00	Trisomy 13, translocation
102102	PJ12.11	Partial trisomy 13 in Patau's syndrome
72265	PJ1z.00	Patau's syndrome NOS
19038	PJ1z.11	Trisomy 13 NOS
33642	PJ2..00	Edward's syndrome - trisomy 18
103873	PJ20.00	Trisomy 18, meiotic nondisjunction
67234	PJ21.00	Trisomy 18, mosaicism
93133	PJ22.00	Trisomy 18, translocation
107162	PJ22.11	Partial trisomy 18 in Edward's syndrome
39017	PJ2z.00	Edward's syndrome NOS
46787	PJ2z.11	TRISOMY 18 NOS
33948	PJ32.11	Wolff - Hirschorn syndrome
111120	PJ33113	18q deletion syndrome
65091	PJ33211	18q- syndrome
103582	PJ33600	Chromosome 22q11 deletion syndrome
69476	PJ50200	Trisomy 8
65509	PJ50300	Trisomy 9
109223	PJ50311	Trisomy 9 Mosaic Syndrome
110833	PJ50400	Trisomy 10
106114	PJ51400	Trisomy 9p syndrome
60079	PJ63z11	Bonnevie-Ullrich syndrome NOS
10628	PJyy200	Fragile X chromosome
32603	PJyy400	Fragile X syndrome
4479	PK5..00	Tuberous sclerosis
42643	PK64.00	Proteus syndrome
23945	PK80.00	Fetal alcohol syndrome
66699	PK83.00	Fetus and newborn affected by maternal use of alcohol
41461	PKy0.11	Prader-Willi Syndrome
27280	PKy0.12	Prader-Willi syndrome
16087	PKy4.00	William syndrome
21418	PKy6011	Cornelia de Lange syndrome
36567	PKy6100	Cockayne syndrome
33522	PKy6300	Smith - Lemli - Opitz syndrome
43325	PKy7300	Rubenstein - Tayi syndrome
16711	PKy7B00	Stickler syndrome

Medcode	Read Code	Description
28663	PKy9200	Menke's syndrome
10956	PKy9300	Prader - Willi syndrome
48084	PKy9400	Zellweger's syndrome
61769	PKyC.00	Pena-Shokeir syndrome type I
110169	PKyD.00	Nicolaides-Baraitser syndrome
100175	PKyE.00	Barber-Say syndrome
71526	PKyF.00	Alstrom syndrome
104054	PKyL.00	FG syndrome
106926	PKyP.11	Wolfram syndrome
108947	PKyz.11	Cockayne's syndrome
60673	PKyz000	Ullrich - Feichtiger syndrome, chimaera
25306	PKyz511	Angelman syndrome
97059	PKyz700	Angelman's syndrome
98617	PKyz711	Angelman syndrome
106579	Pyu0400	[X]Unspecified spina bifida with hydrocephalus
94925	Pyu9D00	[X]Primary ciliary dyskinesia
108652	PyuAD00	[X]Li-Fraumeni syndrome
97916	Q007111	Fetal alcohol syndrome
43005	Q200012	Intracranial haemorrhage in fetus or newborn
6883	Q317000	Perinatal bronchopulmonary dysplasia
20151	Q400.00	Congenital rubella
19584	Q401.00	Congenital cytomegalovirus infection
25304	Q402300	Congenital toxoplasmosis
55634	Q442.00	Neonatal myasthenia gravis
19007	Q48E.00	Periventricular leucomalacia
50554	Q48E.11	Periventricular leukomalacia
104239	Q48F.00	Hypoxic ischaemic encephalopathy of newborn
106012	Q48F.11	Perinatal hypoxic - ischaemic encephalopathy
47342	Q48y000	Congenital renal failure
20822	Q48y100	Congenital cardiac failure
23566	Q490.00	Neonatal cardiac failure
44288	R109.00	[D]Laboratory evidence of human immunodeficiency virus [HIV]
13581	R210.00	[D]Sudden infant death syndrome
48288	R210200	[D]Nonspecific sudden infant death
51323	R210z00	[D]Sudden infant death syndrome NOS
94533	RyuC000	[X]Sudden infant death syndrome
22728	SP08700	Acute graft-versus-host disease
25695	SP08800	Chronic graft-versus-host disease
12106	ZV10.00	[V]Personal history of malignant neoplasm
32246	ZV10111	[V]Personal history of malignant neoplasm of bronchus
29284	ZV10112	[V]Personal history of malignant neoplasm of lung
61655	ZV10211	[V]Personal history of malignant neoplasm - accessory sinus
43311	ZV10212	[V]Personal history of malignant neoplasm of larynx
9444	ZV10400	[V]Personal history of malignant neoplasm of genital organ
23936	ZV10411	[V]Personal history of malignant neoplasm of cervix uteri

Medcode	Read Code	Description
37306	ZV10415	[V]Personal history of malignant neoplasm of prostate
46779	ZV10417	[V]Personal history of malignant neoplasm of uterine body
30322	ZV10500	[V]Personal history of malignant neoplasm of urinary organ
47683	ZV10512	[V]Personal history of malignant neoplasm of kidney
28881	ZV10513	[V]Personal history of malignant neoplasm of kidney
36693	ZV10600	[V]Personal history of leukaemia
94597	ZV10611	[V]Personal history of lymphoid leukaemia
110058	ZV10613	[V]Personal history of myeloid leukaemia
40561	ZV10711	[V]Personal history of Hodgkin's disease
68612	ZV10z00	[V]Personal history of unspecified malignant neoplasm
44421	ZV67A00	[V]Folow-up exam aft other treatment for malignant neoplasm
10439	ZV76.00	[V]Screening for malignant neoplasm
25835	ZV76200	[V]Screening for malignant neoplasm of cervix
61663	ZV76500	[V]Screening for malignant neoplasm of oral cavity

ICD-10 Codes

ICD-10 Code	Description
A17	Tuberculosis of nervous system
A81.0	Creutzfeldt-Jakob disease
A81.1	Subacute sclerosing panencephalitis
B20	Human immunodeficiency virus [HIV] disease resulting in infectious and parasitic diseases
B21	Human immunodeficiency virus [HIV] disease resulting in malignant neoplasms
B22	Human immunodeficiency virus [HIV] disease resulting in other specified diseases
B23	Human immunodeficiency virus [HIV] disease resulting in other conditions
B24	Unspecified human immunodeficiency virus [HIV] disease
C00	Malignant neoplasm of lip
C01	Malignant neoplasm of base of tongue
C02	Malignant neoplasm of other and unspecified parts of tongue
C03	Malignant neoplasm of gum
C04	Malignant neoplasm of floor of mouth
C05	Malignant neoplasm of palate
C06	Malignant neoplasm of other and unspecified parts of mouth
C07	Malignant neoplasm of parotid gland
C08	Malignant neoplasm of other and unspecified major salivary glands
C09	Malignant neoplasm of tonsil
C10	Malignant neoplasm of oropharynx
C11	Malignant neoplasm of nasopharynx
C12	Malignant neoplasm of piriform sinus
C13	Malignant neoplasm of hypopharynx
C14	Malignant neoplasm of other and ill-defined sites in the lip, oral cavity and pharynx
C15	Malignant neoplasm of oesophagus
C16	Malignant neoplasm of stomach
C17	Malignant neoplasm of small intestine
C18	Malignant neoplasm of colon
C19	Malignant neoplasm of rectosigmoid junction
C20	Malignant neoplasm of rectum
C21	Malignant neoplasm of anus and anal canal
C22	Malignant neoplasm of liver and intrahepatic bile ducts
C23	Malignant neoplasm of gallbladder
C24	Malignant neoplasm of other and unspecified parts of biliary tract
C25	Malignant neoplasm of pancreas
C26	Malignant neoplasm of other and ill-defined digestive organs
C30	Malignant neoplasm of nasal cavity and middle ear
C31	Malignant neoplasm of accessory sinuses
C32	Malignant neoplasm of larynx
C33	Malignant neoplasm of trachea
C34	Malignant neoplasm of bronchus and lung
C37	Malignant neoplasm of thymus
C38	Malignant neoplasm of heart, mediastinum and pleura
C39	Malignant neoplasm of other and ill-defined sites in the respiratory system and intrathoracic organs

ICD-10 Code	Description
C40	Malignant neoplasm of bone and articular cartilage of limbs
C41	Malignant neoplasm of bone and articular cartilage of other and unspecified sites
C43	Malignant melanoma of skin
C44	Other malignant neoplasms of skin
C45	Mesothelioma
C46	Kaposi sarcoma
C47	Malignant neoplasm of peripheral nerves and autonomic nervous system
C48	Malignant neoplasm of retroperitoneum and peritoneum
C49	Malignant neoplasm of other connective and soft tissue
C50	Malignant neoplasm of breast
C51	Malignant neoplasm of vulva
C52	Malignant neoplasm of vagina
C53	Malignant neoplasm of cervix uteri
C54	Malignant neoplasm of corpus uteri
C55	Malignant neoplasm of uterus, part unspecified
C56	Malignant neoplasm of ovary
C57	Malignant neoplasm of other and unspecified female genital organs
C58	Malignant neoplasm of placenta
C60	Malignant neoplasm of penis
C61	Malignant neoplasm of prostate
C62	Malignant neoplasm of testis
C63	Malignant neoplasm of other and unspecified male genital organs
C64	Malignant neoplasm of kidney, except renal pelvis
C65	Malignant neoplasm of renal pelvis
C66	Malignant neoplasm of ureter
C67	Malignant neoplasm of bladder
C68	Malignant neoplasm of other and unspecified urinary organs
C69	Malignant neoplasm of eye and adnexa
C70	Malignant neoplasm of meninges
C71	Malignant neoplasm of brain
C72	Malignant neoplasm of spinal cord, cranial nerves and other parts of central nervous system
C73	Malignant neoplasm of thyroid gland
C74	Malignant neoplasm of adrenal gland
C75	Malignant neoplasm of other endocrine glands and related structures
C76	Malignant neoplasm of other and ill-defined sites
C77	Secondary and unspecified malignant neoplasm of lymph nodes
C78	Secondary malignant neoplasm of respiratory and digestive organs
C79	Secondary malignant neoplasm of other and unspecified sites
C80	Malignant neoplasm, without specification of site
C81	Hodgkin lymphoma
C82	Follicular lymphoma
C83	Non-follicular lymphoma
C84	Mature T/NK-cell lymphomas
C85	Other and unspecified types of non-Hodgkin lymphoma
C86	Other specified types of T/NK-cell lymphoma
C88	Malignant immunoproliferative diseases

ICD-10 Code	Description
C90	Multiple myeloma and malignant plasma cell neoplasms
C91	Lymphoid leukaemia
C92	Myeloid leukaemia
C93	Monocytic leukaemia
C94	Other leukaemias of specified cell type
C95	Leukaemia of unspecified cell type
C96	Other and unspecified malignant neoplasms of lymphoid, haematopoietic and related tissue
C97	Malignant neoplasms of independent (primary) multiple sites
D61.9	Aplastic anaemia, unspecified
D70	Agranulocytosis
D76.1	Haemophagocytic lymphohistiocytosis
D81	Combined immunodeficiencies
D82.1	Di George syndrome
D83	Common variable immunodeficiency
D89.1	Cryoglobulinaemia
E31.0	Autoimmune polyglandular failure
E34.8	Other specified endocrine disorders
E70.2	Disorders of tyrosine metabolism
E71	Disorders of branched-chain amino-acid metabolism and fatty-acid metabolism
E72	Other disorders of amino-acid metabolism
E74	Other disorders of carbohydrate metabolism
E75	Disorders of sphingolipid metabolism and other lipid storage disorders
E76	Disorders of glycosaminoglycan metabolism
E77	Disorders of glycoprotein metabolism
E79.1	Lesch-Nyhan syndrome
E83.0	Disorders of copper metabolism
E84	Cystic fibrosis
E88.0	Disorders of plasma-protein metabolism, not elsewhere classified
E88.1	Lipodystrophy, not elsewhere classified
F80.3	Acquired aphasia with epilepsy [Landau-Kleffner]
F84.2	Rett syndrome
G10	Huntington disease
G11.1	Early-onset cerebellar ataxia
G11.3	Cerebellar ataxia with defective DNA repair
G12	Spinal muscular atrophy and related syndromes
G20	Parkinson disease
G23.0	Hallervorden-Spatz disease
G23.8	Other specified degenerative diseases of basal ganglia
G31.8	Other specified degenerative diseases of nervous system
G31.9	Degenerative disease of nervous system, unspecified
G35	Multiple sclerosis
G40.4	Other generalized epilepsy and epileptic syndromes
G40.5	Special epileptic syndromes
G60.0	Hereditary motor and sensory neuropathy
G60.1	Refsum disease
G70.2	Congenital and developmental myasthenia

ICD-10 Code	Description
G70.9	Myoneural disorder, unspecified
G71.0	Muscular dystrophy
G71.1	Myotonic disorders
G71.2	Congenital myopathies
G71.3	Mitochondrial myopathy, not elsewhere classified
G80.0	Spastic quadriplegic cerebral palsy
G80.8	Other cerebral palsy
G82.3	Flaccid tetraplegia
G82.4	Spastic tetraplegia
G82.5	Tetraplegia, unspecified
G93.4	Encephalopathy, unspecified
G93.6	Cerebral oedema
G93.7	Reye syndrome
H11.1	Conjunctival degenerations and deposits
H35.5	Hereditary retinal dystrophy
H49.8	Other paralytic strabismus
I21	Acute myocardial infarction
I27.0	Primary pulmonary hypertension
I42	Cardiomyopathy
I61.3	Intracerebral haemorrhage in brain stem
I81	Portal vein thrombosis
J84.1	Other interstitial pulmonary diseases with fibrosis
J96	Respiratory failure, not elsewhere classified
J98.4	Other disorders of lung
K55.0	Acute vascular disorders of intestine
K55.9	Vascular disorder of intestine, unspecified
K72	Hepatic failure, not elsewhere classified
K74	Fibrosis and cirrhosis of liver
K76.5	Hepatic veno-occlusive disease
K86.8	Other specified diseases of pancreas
M31.3	Wegener granulomatosis
M32.1	Systemic lupus erythematosus with organ or system involvement
M89.5	Osteolysis
N17	Acute renal failure
N18	Chronic kidney disease
N19	Unspecified kidney failure
N25.8	Other disorders resulting from impaired renal tubular function
P10.1	Cerebral haemorrhage due to birth injury
P11.2	Unspecified brain damage due to birth injury
P21.0	Severe birth asphyxia
P28.5	Respiratory failure of newborn
P29.0	Neonatal cardiac failure
P29.3	Persistent fetal circulation
P35.0	Congenital rubella syndrome
P35.1	Congenital cytomegalovirus infection
P35.8	Other congenital viral diseases

ICD-10 Code	Description
P37.1	Congenital toxoplasmosis
Q00.0	Anencephaly
Q01	Encephalocele
Q03.1	Atresia of foramina of Magendie and Luschka
Q03.9	Congenital hydrocephalus, unspecified
Q04.0	Congenital malformations of corpus callosum
Q04.2	Holoprosencephaly
Q04.3	Other reduction deformities of brain
Q04.4	Septo-optic dysplasia
Q04.6	Congenital cerebral cysts
Q04.9	Congenital malformation of brain, unspecified
Q21.8	Other congenital malformations of cardiac septa
Q22.0	Pulmonary valve atresia
Q22.1	Congenital pulmonary valve stenosis
Q22.4	Congenital tricuspid stenosis
Q22.5	Ebstein anomaly
Q22.6	Hypoplastic right heart syndrome
Q23.0	Congenital stenosis of aortic valve
Q23.4	Hypoplastic left heart syndrome
Q23.9	Congenital malformation of aortic and mitral valves, unspecified
Q25.4	Other congenital malformations of aorta
Q39.6	Diverticulum of oesophagus
Q41.0	Congenital absence, atresia and stenosis of duodenum
Q41.9	Congenital absence, atresia and stenosis of small intestine, part unspecified
Q43.7	Persistent cloaca
Q44.2	Atresia of bile ducts
Q44.5	Other congenital malformations of bile ducts
Q44.7	Other congenital malformations of liver
Q60.1	Renal agenesis, bilateral
Q60.6	Potter syndrome
Q74.8	Other specified congenital malformations of limb(s)
Q78.0	Osteogenesis imperfecta
Q78.5	Metaphyseal dysplasia
Q79.2	Exomphalos
Q79.3	Gastroschisis
Q80.4	Harlequin fetus
Q81	Epidermolysis bullosa
Q82.1	Xeroderma pigmentosum
Q82.4	Ectodermal dysplasia (anhidrotic)
Q85.8	Other phakomatoses, not elsewhere classified
Q86.0	Fetal alcohol syndrome (dysmorphic)
Q93.2	Chromosome replaced with ring or dicentric
Q93.3	Deletion of short arm of chromosome 4
Q93.4	Deletion of short arm of chromosome 5
Q93.5	Other deletions of part of a chromosome
Q93.8	Other deletions from the autosomes

ICD-10 Code	Description
Q95.2	Balanced autosomal rearrangement in abnormal individual
T86.0	Bone-marrow transplant rejection
T86.2	Heart transplant failure and rejection

Appendix 6: Read Code and ICD-10 Code Lists – Chronic Conditions

Read Codes

Medcode	Read Code	Description
8097	2828	Absence seizure
64145	5761.11	Hypothalamus hormone radioass.
4246	6664	Mental handicap problem
3970	6665	Physical handicap problem
50012	6674	Epilepsy associated problems
68132	6894	Mental retardation screen
101249	2126600	Osteopenia resolved
104307	2126800	Ostium secundum atrial septal defect resolved
35762	7010000	Ventriculocisternostomy
68651	7114200	Partial parathyroidectomy + parathyroid tissue transposition
43202	7114300	Partial parathyroidectomy NEC
98383	7904200	Left ventricle aorta tunnel right ventricle pul art val con
48206	7927300	Transposition of coronary artery NEC
50604	13L2.12	Mongol child in family
31950	13L3.12	Schizophrenic child
103821	13s7.00	Croatian as a second language
298	13VC.00	Disability
3058	13VC.11	Disabled
27462	13VC000	Disability - slight
23369	13VC100	Disability - moderate
3972	13VC200	Disability - severe
41742	13VCZ00	Disability NOS
38071	13VM.00	Physical disability
67943	13Y2.00	Schizophrenia association member
2052	13Z4E00	Learning difficulties
110439	1B96.00	Speech impairment
33403	1B9Z.00	Speech problem NOS
4035	1C13300	Bilateral deafness
104570	1I12.00	Atrial fibrillation excluded
11370	1O2..00	Asthma confirmed
22341	1O30.00	Epilepsy confirmed
37948	1P01.00	Psychomotor retardation
22713	1S42.00	Manic mood
104288	1X0..00	Sick Cell Thalas Scr Prog fam orig African or African-Carib
103055	1X1..00	Sick Cell Thalas Scr Prog fam orig South Asia (Asian)
29013	1Z10.00	Chronic kidney disease stage 1
94789	1Z17.00	Chronic kidney disease stage 1 with proteinuria
97980	1Z17.11	CKD stage 1 with proteinuria
95572	1Z18.00	Chronic kidney disease stage 1 without proteinuria
111022	1Z18.11	CKD stage 1 without proteinuria
95146	1Z19.00	Chronic kidney disease stage 2 with proteinuria
97979	1Z19.11	CKD stage 2 with proteinuria
95121	1Z1A.00	Chronic kidney disease stage 2 without proteinuria

Medcode	Read Code	Description
97978	1Z1A.11	CKD stage 2 without proteinuria
110033	1Z1M.00	CKD with GFR category G1 & albuminuria category A1
110003	1Z1N.00	CKD with GFR category G1 & albuminuria category A2
110484	1Z1P.00	CKD with GFR category G1 & albuminuria category A3
110269	1Z1Q.00	CKD with GFR category G2 & albuminuria category A1
110108	1Z1R.00	CKD with GFR category G2 & albuminuria category A2
110251	1Z1S.00	CKD with GFR category G2 & albuminuria category A3
26362	212P.00	Hyperthyroidism resolved
28994	212R.00	Atrial fibrillation resolved
107402	28E2.00	Severe cognitive impairment
101873	337C.00	Obstructive ventilatory defect
110345	38B8.00	Severe asthma exacerbation risk assessment
103690	38G3.00	Hyperten, abnorm renal/liver funct, stroke, BLED score
94706	42d6.00	Vitamin B profile
49820	42e0.00	Homozygous SS genotype
109412	42hB.00	von Willebrand Normandy screening test
34555	42jf.00	von Willebrand factor antigen level
34554	42jg.00	von Willebrand factor collagen binding assay
16420	42P2.11	Auto-immune thrombocytopenia
23137	42Qx.00	von Willebrand factor activity
110474	44lz.00	Additional biochemical ratios
55159	46F7.11	Tyrosine cryst.- urine
32466	46T6.11	Aminoaciduria
96587	4L4C.00	Charcot-Marie-Tooth disease type 1A gene detection test
104331	4Q21000	Metadrenaline level
94908	4Q73.00	Copper level
102672	5A14.00	Polycythaemia irradiation
10487	663j.00	Asthma - currently active
3018	663V100	Mild asthma
13065	663V200	Moderate asthma
3366	663V300	Severe asthma
1684	66A4.00	Diabetic on oral treatment
8842	66A5.00	Diabetic on insulin
13071	66AI.00	Diabetic - good control
2378	66AJ.00	Diabetic - poor control
22023	66AJz00	Diabetic - poor control NOS
96010	66Ap.00	Insulin treatment initiated
100791	66Ar.00	Insulin treatment stopped
101728	66As.00	Diabetic on subcutaneous treatment
102704	66At000	Type I diabetic dietary review
104453	66At011	Type 1 diabetic dietary review
101801	66At100	Type II diabetic dietary review
102611	66At111	Type 2 diabetic dietary review
28769	66AV.00	Diabetic on insulin and oral treatment
28530	66B4.00	Thyroid eye disease
24681	66B8.00	Thyroid dis.treatment changed
38292	66B9.00	Thyroid dis.treatment started

Medcode	Read Code	Description
72576	66g..00	Congenital heart condition monitoring
105507	66HB000	Rheumatoid arthritis annual review
100820	66HC.00	Rheumatic disorder annual review invitation
110344	66o2.00	Diabetic on non-insulin injectable medication
110379	66o5.00	Diabetic on oral treatment and glucagon-like peptide 1
111483	66o6.00	Diabetic on insulin and glucagon-like peptide 1
65761	68A4.00	Congenital eye disorder screen
101067	6A61.00	Attention deficit hyperactivity disorder annual review
45773	6A9..00	Atrial fibrillation annual review
39541	710..11	Pineal gland operations
95444	790M000	Total cavopulmonary con extrac inf cav vein pulmon art con
91455	790M100	Total cavopulmonary connection with lateral atrial tunnel
93699	791C000	Aortic root replac us pul val auto ri vent pulm art val cond
70353	791C200	Aortic root replacement using homograft
91004	791C300	Aortic root replacement using mechanical prosthesis
71668	791C400	Aortic root replacement
68138	7A04.00	Other connection from aorta to pulmonary artery
39857	7H40600	Transposition of iliopsoas muscle
91177	7J02C00	Hemicraniotomy
92968	7Q09100	Hypoplastic haemolytic and renal anaemia drugs Band 2
91091	7Q0B100	Hyperuricaemia drugs Band 1
61670	889A.00	Diab mellit insulin-glucose infus acute myocardial infarct
53111	8B73.00	Vitamin D supplements
105554	8CMW200	Atrial fibrillation care pathway
107340	9mM..00	Rheumatoid arthritis monitoring invitation
107435	9mM0.00	Rheumatoid arthritis monitoring invitation first letter
107575	9mM1.00	Rheumatoid arthritis monitoring invitation second letter
107676	9mM2.00	Rheumatoid arthritis monitoring invitation third letter
107606	9mM3.00	Rheumatoid arthritis monitoring verbal invitation
107797	9mM4.00	Rheumatoid arthritis monitoring telephone invitation
57832	9Os..00	Atrial fibrillation monitoring administration
68816	A213.00	Oculoglandular tularaemia
39419	A3A2.11	Lipodystrophy, intestinal
52673	A413.00	Progressive multifocal leucoencephalopathy
49541	A413.11	Progressive multifocal leukoencephalopathy
49468	A57y400	Pseudoscarlatina
2413	A70z000	Hepatitis C
23770	A788.00	Acquired immune deficiency syndrome
103962	A78y300	Marburg disease
27420	A90..00	Congenital syphilis
50581	A900.12	Congenital syphilitic choroiditis
69219	A900.14	Congenital syphilitic epiphysitis
22157	A900.16	Congenital syphilitic osteochondritis
45320	A904.00	Juvenile neurosyphilis
57279	A904200	Congenital syphilitic meningitis
46401	A905000	Congenital syphilitic gumma
96000	A907.00	Unspecified late congenital syphilis

Medcode	Read Code	Description
60039	A90z.00	Congenital syphilis NOS
67955	A985z11	Rheumatism - gonococcal
8103	A993.00	Reiter's disease / syndrome
2194	A993.11	Reiter's syndrome
73638	AB4zz00	Unspecified histoplasmosis NOS
52030	AB68.00	Phaeohyphomycosis
42603	AC22.00	Thyroid echinococcus granulosus
3865	AD5..00	Sarcoidosis
33980	AD50.00	Sarcoidosis of lung
49075	AD51.00	Sarcoidosis of lymph nodes
58841	AD52.00	Sarcoidosis of lung with sarcoidosis of lymph nodes
27769	AD53.00	Sarcoidosis of skin
72595	AD54.00	Sarcoidosis of inferior turbinates
40613	AD55.00	Sarcoid arthropathy
16235	AD61.00	Behcet's syndrome
29735	B30..12	Osteoma
36325	B470300	Teratoma of undescended testis
18231	B540.11	Phaeochromocytoma
35014	B622.00	Sezary's disease
100532	B622z00	Sezary's disease NOS
4870	B625.11	Histiocytosis X (acute, progressive)
105762	B62C.00	Unifocal Langerhans-cell histiocytosis
105069	B693.00	Juvenile myelomonocytic leukaemia
4794	B73..12	Osteoma
15118	B7B..11	Teratoma, benign
2321	B7H2.11	Pituitary adenoma
34693	B7J1.11	Congenital lymphangioma
101374	B7J1000	Cystic hygroma of neck
5542	B934.11	Polycythaemia rubra vera
31560	B937.12	Idiopathic thrombocythaemia
677	C02..00	Thyrotoxicosis
1472	C02..11	Hyperthyroidism
23315	C020.00	Toxic diffuse goitre
5257	C020.12	Graves' disease
26702	C020000	Toxic diffuse goitre with no crisis
57011	C020100	Toxic diffuse goitre with crisis
49334	C020z00	Toxic diffuse goitre NOS
53280	C021.00	Toxic uninodular goitre
26869	C021000	Toxic uninodular goitre with no crisis
61498	C021z00	Toxic uninodular goitre NOS
68512	C023000	Toxic nodular goitre unspecified with no crisis
100004	C023100	Toxic nodular goitre unspecified with crisis
49361	C023z00	Toxic nodular goitre NOS
49508	C024.00	Thyrotoxicosis from ectopic thyroid nodule
64656	C024000	Thyrotoxicosis from ectopic thyroid nodule with no crisis
56270	C024z00	Thyrotoxicosis from ectopic thyroid nodule NOS
43136	C02y.00	Thyrotoxicosis of other specified origin

Medcode	Read Code	Description
51273	C02y000	Thyrotoxicosis of other specified origin with no crisis
106532	C02y100	Thyrotoxicosis of other specified origin with crisis
64856	C02y200	Thyrotoxicosis factitia
34220	C02yz00	Thyrotoxicosis of other specified origin NOS
15565	C02z.00	Thyrotoxicosis without mention of goitre or other cause
26701	C02z000	Thyrotoxicosis without mention of goitre or cause no crisis
3194	C02z100	Thyrotoxicosis without mention of goitre, cause with crisis
26699	C02zz00	Thyrotoxicosis NOS
10097	C03..00	Congenital hypothyroidism
67513	C03..11	Cretinism
11892	C030.00	Pendred's syndrome
31612	C03y000	Congenital hypothyroidism with diffuse goitre
93159	C03y100	Congenital hypothyroidism without goitre
51481	C03z.00	Congenital hypothyroidism NOS
93323	C03z.11	Congenital thyroid insufficiency
27533	C03z.12	Cretinism
3290	C04..00	Acquired hypothyroidism
14704	C04..12	Thyroid deficiency
273	C04..13	Hypothyroidism
38976	C043z00	Iatrogenic hypothyroidism NOS
31971	C046.00	Autoimmune myxoedema
3941	C04z.00	Hypothyroidism NOS
23014	C04z.12	Thyroid insufficiency
18282	C04z.13	Hypothyroid goitre, acquired
1346	C05..00	Thyroiditis
3857	C052.11	Autoimmune thyroiditis
61026	C054.00	Iatrogenic thyroiditis
69113	C06y100	Thyroid atrophy
35957	C06z.00	Thyroid disorder NOS
96787	C0A..00	Congenital iodine deficiency syndrome
72331	C0A0.00	Congenital iodine-deficiency syndrome, neurological type
39166	C0A1.00	Congenital iodine-deficiency syndrome, myxoedematous type
37518	C0A3.00	Iodine-deficiency-related diffuse (endemic) goitre
44459	C0A4.00	Iodine-deficiency-related multinodular (endemic) goitre
54511	C0AX.00	Iodine-deficiency-related (endemic) goitre, unspecified
711	C10..00	Diabetes mellitus
38986	C100.00	Diabetes mellitus with no mention of complication
24490	C100000	Diabetes mellitus, juvenile type, no mention of complication
1038	C100011	Insulin dependent diabetes mellitus
506	C100112	Non-insulin dependent diabetes mellitus
50972	C100z00	Diabetes mellitus NOS with no mention of complication
1682	C101.00	Diabetes mellitus with ketoacidosis
53200	C101000	Diabetes mellitus, juvenile type, with ketoacidosis
42505	C101z00	Diabetes mellitus NOS with ketoacidosis
21482	C102.00	Diabetes mellitus with hyperosmolar coma
40023	C102000	Diabetes mellitus, juvenile type, with hyperosmolar coma
72345	C102z00	Diabetes mellitus NOS with hyperosmolar coma

Medcode	Read Code	Description
15690	C103.00	Diabetes mellitus with ketoacidotic coma
42567	C103000	Diabetes mellitus, juvenile type, with ketoacidotic coma
65062	C103z00	Diabetes mellitus NOS with ketoacidotic coma
16502	C104.00	Diabetes mellitus with renal manifestation
93922	C104000	Diabetes mellitus, juvenile type, with renal manifestation
35107	C104z00	Diabetes mellitus with nephropathy NOS
33254	C105.00	Diabetes mellitus with ophthalmic manifestation
69748	C105000	Diabetes mellitus, juvenile type, + ophthalmic manifestation
34283	C105z00	Diabetes mellitus NOS with ophthalmic manifestation
7795	C106.12	Diabetes mellitus with neuropathy
16491	C106.13	Diabetes mellitus with polyneuropathy
67853	C106000	Diabetes mellitus, juvenile, + neurological manifestation
22573	C106z00	Diabetes mellitus NOS with neurological manifestation
35399	C107.00	Diabetes mellitus with peripheral circulatory disorder
32403	C107.11	Diabetes mellitus with gangrene
70448	C107000	Diabetes mellitus, juvenile +peripheral circulatory disorder
69124	C107300	IDDM with peripheral circulatory disorder
65025	C107z00	Diabetes mellitus NOS with peripheral circulatory disorder
1647	C108.00	Insulin dependent diabetes mellitus
18505	C108.11	IDDM-Insulin dependent diabetes mellitus
17858	C108.12	Type 1 diabetes mellitus
24423	C108.13	Type I diabetes mellitus
46963	C108000	Insulin-dependent diabetes mellitus with renal complications
61344	C108011	Type I diabetes mellitus with renal complications
21983	C108012	Type 1 diabetes mellitus with renal complications
49276	C108100	Insulin-dependent diabetes mellitus with ophthalmic comps
102740	C108112	Type 1 diabetes mellitus with ophthalmic complications
52283	C108200	Insulin-dependent diabetes mellitus with neurological comps
49146	C108211	Type I diabetes mellitus with neurological complications
61829	C108212	Type 1 diabetes mellitus with neurological complications
52104	C108300	Insulin dependent diabetes mellitus with multiple complicatn
108007	C108311	Type I diabetes mellitus with multiple complications
44443	C108500	Insulin dependent diabetes mellitus with ulcer
51957	C108511	Type I diabetes mellitus with ulcer
68390	C108512	Type 1 diabetes mellitus with ulcer
60499	C108600	Insulin dependent diabetes mellitus with gangrene
6509	C108700	Insulin dependent diabetes mellitus with retinopathy
38161	C108711	Type I diabetes mellitus with retinopathy
41049	C108712	Type 1 diabetes mellitus with retinopathy
6791	C108800	Insulin dependent diabetes mellitus - poor control
46850	C108811	Type I diabetes mellitus - poor control
45914	C108812	Type 1 diabetes mellitus - poor control
31310	C108900	Insulin dependent diabetes maturity onset
63017	C108911	Type I diabetes mellitus maturity onset
97446	C108912	Type 1 diabetes mellitus maturity onset
56448	C108A00	Insulin-dependent diabetes without complication
95992	C108A11	Type I diabetes mellitus without complication

Medcode	Read Code	Description
111106	C108A12	Type 1 diabetes mellitus without complication
24694	C108B00	Insulin dependent diabetes mellitus with mononeuropathy
99231	C108B11	Type I diabetes mellitus with mononeuropathy
41716	C108C00	Insulin dependent diabetes mellitus with polyneuropathy
57621	C108D00	Insulin dependent diabetes mellitus with nephropathy
66872	C108D11	Type I diabetes mellitus with nephropathy
44440	C108E00	Insulin dependent diabetes mellitus with hypoglycaemic coma
42729	C108E11	Type I diabetes mellitus with hypoglycaemic coma
70766	C108E12	Type 1 diabetes mellitus with hypoglycaemic coma
44260	C108F00	Insulin dependent diabetes mellitus with diabetic cataract
17545	C108F11	Type I diabetes mellitus with diabetic cataract
110400	C108F12	Type 1 diabetes mellitus with diabetic cataract
64446	C108G00	Insulin dependent diab mell with peripheral angiopathy
65616	C108H00	Insulin dependent diabetes mellitus with arthropathy
62352	C108H11	Type I diabetes mellitus with arthropathy
39809	C108J00	Insulin dependent diab mell with neuropathic arthropathy
60208	C108J11	Type I diabetes mellitus with neuropathic arthropathy
18230	C108J12	Type 1 diabetes mellitus with neuropathic arthropathy
64449	C108z00	Unspecified diabetes mellitus with multiple complications
17859	C109.12	Type 2 diabetes mellitus
18219	C109.13	Type II diabetes mellitus
52303	C109000	Non-insulin-dependent diabetes mellitus with renal comps
50225	C109011	Type II diabetes mellitus with renal complications
50429	C109100	Non-insulin-dependent diabetes mellitus with ophthalm comps
59725	C109111	Type II diabetes mellitus with ophthalmic complications
70316	C109112	Type 2 diabetes mellitus with ophthalmic complications
55842	C109200	Non-insulin-dependent diabetes mellitus with neuro comps
67905	C109211	Type II diabetes mellitus with neurological complications
45919	C109212	Type 2 diabetes mellitus with neurological complications
62146	C109300	Non-insulin-dependent diabetes mellitus with multiple comps
108005	C109312	Type 2 diabetes mellitus with multiple complications
34912	C109400	Non-insulin dependent diabetes mellitus with ulcer
55075	C109411	Type II diabetes mellitus with ulcer
65704	C109412	Type 2 diabetes mellitus with ulcer
40401	C109500	Non-insulin dependent diabetes mellitus with gangrene
62107	C109511	Type II diabetes mellitus with gangrene
46150	C109512	Type 2 diabetes mellitus with gangrene
58604	C109611	Type II diabetes mellitus with retinopathy
42762	C109612	Type 2 diabetes mellitus with retinopathy
8403	C109700	Non-insulin dependent diabetes mellitus - poor control
24458	C109711	Type II diabetes mellitus - poor control
45913	C109712	Type 2 diabetes mellitus - poor control
29979	C109900	Non-insulin-dependent diabetes mellitus without complication
109103	C109911	Type II diabetes mellitus without complication
105784	C109912	Type 2 diabetes mellitus without complication
72320	C109A00	Non-insulin dependent diabetes mellitus with mononeuropathy
50813	C109A11	Type II diabetes mellitus with mononeuropathy

Medcode	Read Code	Description
45467	C109B00	Non-insulin dependent diabetes mellitus with polyneuropathy
47409	C109B11	Type II diabetes mellitus with polyneuropathy
109865	C109B12	Type 2 diabetes mellitus with polyneuropathy
59365	C109C00	Non-insulin dependent diabetes mellitus with nephropathy
64571	C109C11	Type II diabetes mellitus with nephropathy
24836	C109C12	Type 2 diabetes mellitus with nephropathy
43785	C109D00	Non-insulin dependent diabetes mellitus with hypoglyca coma
56268	C109D11	Type II diabetes mellitus with hypoglycaemic coma
61071	C109D12	Type 2 diabetes mellitus with hypoglycaemic coma
69278	C109E00	Non-insulin depend diabetes mellitus with diabetic cataract
48192	C109E11	Type II diabetes mellitus with diabetic cataract
44779	C109E12	Type 2 diabetes mellitus with diabetic cataract
54212	C109F00	Non-insulin-dependent d m with peripheral angiopath
54899	C109F11	Type II diabetes mellitus with peripheral angiopathy
60699	C109F12	Type 2 diabetes mellitus with peripheral angiopathy
24693	C109G00	Non-insulin dependent diabetes mellitus with arthropathy
18143	C109G11	Type II diabetes mellitus with arthropathy
49869	C109G12	Type 2 diabetes mellitus with arthropathy
40962	C109H00	Non-insulin dependent d m with neuropathic arthropathy
47816	C109H11	Type II diabetes mellitus with neuropathic arthropathy
66965	C109H12	Type 2 diabetes mellitus with neuropathic arthropathy
18278	C109J00	Insulin treated Type 2 diabetes mellitus
37648	C109J11	Insulin treated non-insulin dependent diabetes mellitus
43453	C10C.00	Diabetes mellitus autosomal dominant
46624	C10C.11	Maturity onset diabetes in youth
98392	C10C.12	Maturity onset diabetes in youth type 1
36695	C10D.00	Diabetes mellitus autosomal dominant type 2
59991	C10D.11	Maturity onset diabetes in youth type 2
1549	C10E.00	Type 1 diabetes mellitus
51261	C10E.12	Insulin dependent diabetes mellitus
47582	C10E000	Type 1 diabetes mellitus with renal complications
109837	C10E011	Type I diabetes mellitus with renal complications
102946	C10E012	Insulin-dependent diabetes mellitus with renal complications
47649	C10E100	Type 1 diabetes mellitus with ophthalmic complications
99311	C10E111	Type I diabetes mellitus with ophthalmic complications
98071	C10E112	Insulin-dependent diabetes mellitus with ophthalmic comps
42831	C10E200	Type 1 diabetes mellitus with neurological complications
101735	C10E212	Insulin-dependent diabetes mellitus with neurological comps
47650	C10E300	Type 1 diabetes mellitus with multiple complications
91942	C10E311	Type I diabetes mellitus with multiple complications
45276	C10E312	Insulin dependent diabetes mellitus with multiple complicat
93878	C10E511	Type I diabetes mellitus with ulcer
98704	C10E512	Insulin dependent diabetes mellitus with ulcer
69993	C10E600	Type 1 diabetes mellitus with gangrene
102112	C10E611	Type I diabetes mellitus with gangrene
109051	C10E612	Insulin dependent diabetes mellitus with gangrene
18387	C10E700	Type 1 diabetes mellitus with retinopathy

Medcode	Read Code	Description
95343	C10E711	Type I diabetes mellitus with retinopathy
93875	C10E712	Insulin dependent diabetes mellitus with retinopathy
35288	C10E800	Type 1 diabetes mellitus - poor control
105337	C10E811	Type I diabetes mellitus - poor control
72702	C10E812	Insulin dependent diabetes mellitus - poor control
40682	C10E900	Type 1 diabetes mellitus maturity onset
96235	C10E911	Type I diabetes mellitus maturity onset
97849	C10E912	Insulin dependent diabetes maturity onset
69676	C10EA00	Type 1 diabetes mellitus without complication
62613	C10EA11	Type I diabetes mellitus without complication
99719	C10EA12	Insulin-dependent diabetes without complication
68105	C10EB00	Type 1 diabetes mellitus with mononeuropathy
46301	C10EC00	Type 1 diabetes mellitus with polyneuropathy
91943	C10EC11	Type I diabetes mellitus with polyneuropathy
101311	C10EC12	Insulin dependent diabetes mellitus with polyneuropathy
10418	C10ED00	Type 1 diabetes mellitus with nephropathy
102163	C10ED12	Insulin dependent diabetes mellitus with nephropathy
39070	C10EE00	Type 1 diabetes mellitus with hypoglycaemic coma
99716	C10EE12	Insulin dependent diabetes mellitus with hypoglycaemic coma
49554	C10EF00	Type 1 diabetes mellitus with diabetic cataract
100770	C10EF12	Insulin dependent diabetes mellitus with diabetic cataract
93468	C10EG00	Type 1 diabetes mellitus with peripheral angiopathy
18642	C10EH00	Type 1 diabetes mellitus with arthropathy
54008	C10EJ00	Type 1 diabetes mellitus with neuropathic arthropathy
30323	C10EK00	Type 1 diabetes mellitus with persistent proteinuria
30294	C10EL00	Type 1 diabetes mellitus with persistent microalbuminuria
102620	C10EL11	Type I diabetes mellitus with persistent microalbuminuria
10692	C10EM00	Type 1 diabetes mellitus with ketoacidosis
62209	C10EM11	Type I diabetes mellitus with ketoacidosis
40837	C10EN00	Type 1 diabetes mellitus with ketoacidotic coma
66145	C10EN11	Type I diabetes mellitus with ketoacidotic coma
22871	C10EP00	Type 1 diabetes mellitus with exudative maculopathy
97894	C10EP11	Type I diabetes mellitus with exudative maculopathy
55239	C10EQ00	Type 1 diabetes mellitus with gastroparesis
108724	C10EQ11	Type I diabetes mellitus with gastroparesis
758	C10F.00	Type 2 diabetes mellitus
22884	C10F.11	Type II diabetes mellitus
18777	C10F000	Type 2 diabetes mellitus with renal complications
57278	C10F011	Type II diabetes mellitus with renal complications
47321	C10F100	Type 2 diabetes mellitus with ophthalmic complications
100964	C10F111	Type II diabetes mellitus with ophthalmic complications
34268	C10F200	Type 2 diabetes mellitus with neurological complications
98616	C10F211	Type II diabetes mellitus with neurological complications
65267	C10F300	Type 2 diabetes mellitus with multiple complications
43227	C10F311	Type II diabetes mellitus with multiple complications
49074	C10F400	Type 2 diabetes mellitus with ulcer
91646	C10F411	Type II diabetes mellitus with ulcer

Medcode	Read Code	Description
12736	C10F500	Type 2 diabetes mellitus with gangrene
104323	C10F511	Type II diabetes mellitus with gangrene
18496	C10F600	Type 2 diabetes mellitus with retinopathy
49655	C10F611	Type II diabetes mellitus with retinopathy
25627	C10F700	Type 2 diabetes mellitus - poor control
47315	C10F711	Type II diabetes mellitus - poor control
39481	C10F811	Metabolic syndrome X
47954	C10F900	Type 2 diabetes mellitus without complication
53392	C10F911	Type II diabetes mellitus without complication
62674	C10FA00	Type 2 diabetes mellitus with mononeuropathy
95351	C10FA11	Type II diabetes mellitus with mononeuropathy
18425	C10FB00	Type 2 diabetes mellitus with polyneuropathy
50527	C10FB11	Type II diabetes mellitus with polyneuropathy
12640	C10FC00	Type 2 diabetes mellitus with nephropathy
102201	C10FC11	Type II diabetes mellitus with nephropathy
46917	C10FD00	Type 2 diabetes mellitus with hypoglycaemic coma
98723	C10FD11	Type II diabetes mellitus with hypoglycaemic coma
44982	C10FE00	Type 2 diabetes mellitus with diabetic cataract
93727	C10FE11	Type II diabetes mellitus with diabetic cataract
37806	C10FF00	Type 2 diabetes mellitus with peripheral angiopathy
104639	C10FF11	Type II diabetes mellitus with peripheral angiopathy
59253	C10FG00	Type 2 diabetes mellitus with arthropathy
103902	C10FG11	Type II diabetes mellitus with arthropathy
35385	C10FH00	Type 2 diabetes mellitus with neuropathic arthropathy
109197	C10FH11	Type II diabetes mellitus with neuropathic arthropathy
1407	C10FJ00	Insulin treated Type 2 diabetes mellitus
64668	C10FJ11	Insulin treated Type II diabetes mellitus
26054	C10FL00	Type 2 diabetes mellitus with persistent proteinuria
60796	C10FL11	Type II diabetes mellitus with persistent proteinuria
18390	C10FM00	Type 2 diabetes mellitus with persistent microalbuminuria
32627	C10FN00	Type 2 diabetes mellitus with ketoacidosis
106528	C10FN11	Type II diabetes mellitus with ketoacidosis
51756	C10FP00	Type 2 diabetes mellitus with ketoacidotic coma
106061	C10FP11	Type II diabetes mellitus with ketoacidotic coma
25591	C10FQ00	Type 2 diabetes mellitus with exudative maculopathy
111798	C10FQ11	Type II diabetes mellitus with exudative maculopathy
63690	C10FR00	Type 2 diabetes mellitus with gastroparesis
51697	C10G.00	Secondary pancreatic diabetes mellitus
96506	C10G000	Secondary pancreatic diabetes mellitus without complication
61122	C10H.00	Diabetes mellitus induced by non-steroid drugs
37957	C10K.00	Type A insulin resistance
56885	C10K000	Type A insulin resistance without complication
43857	C10M.00	Lipoatrophic diabetes mellitus
22487	C10N.00	Secondary diabetes mellitus
94383	C10N000	Secondary diabetes mellitus without complication
108360	C10P000	Type I diabetes mellitus in remission
109628	C10P011	Type 1 diabetes mellitus in remission

Medcode	Read Code	Description
107824	C10P100	Type II diabetes mellitus in remission
110611	C10P111	Type 2 diabetes mellitus in remission
33343	C10y.00	Diabetes mellitus with other specified manifestation
110997	C10y000	Diabetes mellitus, juvenile, + other specified manifestation
70821	C10yz00	Diabetes mellitus NOS with other specified manifestation
45491	C10z.00	Diabetes mellitus with unspecified complication
68792	C10z000	Diabetes mellitus, juvenile type, + unspecified complication
64357	C10zz00	Diabetes mellitus NOS with unspecified complication
61520	C110000	Iatrogenic hyperinsulinism
27304	C111.00	Other hyperinsulinism
50491	C111z00	Other hyperinsulinism NOS
23355	C115.11	Zollinger - Ellison syndrome
16433	C12..00	Parathyroid gland disorders
3559	C120.00	Hyperparathyroidism
18740	C120000	Primary hyperparathyroidism
73934	C120100	Hyperparathyroid bone disease
15096	C121.00	Hypoparathyroidism
61859	C121000	Autoimmune parathyroiditis
25379	C121200	Idiopathic hypoparathyroidism
63512	C121z00	Hypoparathyroidism NOS
64789	C12z.00	Parathyroid disorder NOS
22732	C13..11	Hypothalamus disorders
5316	C130200	Acromegaly
23560	C131.00	Other anterior pituitary hyperfunction
6732	C131000	Hyperprolactinaemia
5026	C132.00	Panhypopituitarism
8552	C132.11	Hypopituitarism NOS
48590	C132000	Idiopathic panhypopituitarism
33653	C132z00	Panhypopituitarism NOS
20287	C133.00	Pituitary dwarfism
105861	C133.12	Hypophyseal dwarfism
61409	C133z00	Pituitary dwarfism NOS
52426	C134000	Prolactin deficiency
16004	C134011	Hypoprolactinaemia
11146	C134300	TSH - thyroid-stimulating hormone deficiency
11147	C134411	ACTH deficiency
15488	C134z00	Other anterior pituitary disorder NOS
43908	C134z11	Anterior pituitary hormone deficiency NEC
1045	C135.00	Diabetes insipidus
60046	C135.12	Diabetes insipidus - pituitary
56983	C137.00	Iatrogenic pituitary disorders
50958	C137.11	Iatrogenic hypopituitarism
44881	C137100	Post-hypophysectomy hypopituitarism
34459	C137z00	Iatrogenic pituitary disorder NOS
98210	C139.00	Hypogonadotropic hypogonadism
36881	C13X.00	Hypothalamic dysfunction, not elsewhere classified
44186	C13y.00	Other pituitary disorders + diencephalohypophyseal syndromes

Medcode	Read Code	Description
69820	C13y400	Other diencephalic syndrome
12449	C13z.00	Pituitary disorders NOS
103025	C14z.00	Thymus disease NOS
70967	C150000	Idiopathic Cushing's syndrome
20275	C150100	Iatrogenic Cushing's syndrome
53682	C150200	Pituitary dependent Cushing's syndrome
32275	C151.00	Hyperaldosteronism
52688	C151.11	Aldosteronism
47778	C151.12	Bartter's syndrome
29028	C151000	Primary hyperaldosteronism
37119	C151100	Secondary hyperaldosteronism
40288	C151200	Bartter's syndrome
68567	C151z00	Hyperaldosteronism NOS
29640	C152000	Congenital adrenogenital syndrome
69916	C152100	Acquired adrenogenital syndrome
67273	C152700	Other adrenogenital syndrome with salt loss
69764	C152800	Other adrenogenital syndrome without mention of salt loss
31446	C152811	Adrenogenital syndrome NOS
36786	C152813	Congenital adrenal gland hypertrophy NEC
93135	C152814	Pseudohermaphrodite, male with adrenocortical disorder
70360	C152912	Precocious puberty with adrenal hyperplasia
57321	C152z00	Adrenogenital disorder NOS
44962	C153.00	Other corticoadrenal overactivity
43641	C153.11	ACTH overproduction
32642	C153.12	Adrenocortical hyperfunction
3113	C154.00	Corticoadrenal insufficiency
4042	C154011	Addisonian crisis
42873	C154012	Adrenal crisis
4481	C154100	Addison's disease
21594	C154300	Hypoaldosteronism
12227	C154600	Addisonian crisis
108019	C154700	Hyporeninaemic hypoaldosteronism
12396	C154z00	Corticoadrenal insufficiency NOS
28896	C154z11	Adrenal hypofunction
20786	C154z12	Adrenal insufficiency NEC
73529	C155000	Adrenal medullary insufficiency
54838	C155z00	Other adrenal hypofunction NOS
33400	C156.00	Medulloadrenal hyperfunction
41542	C15z.00	Adrenal gland disorder NOS
23802	C163.11	Ovarian hypogonadism
31274	C163200	Hypergonadotrophic ovarian failure
22836	C163300	Ovarian hypogonadism
16103	C164.12	Stein - Leventhal syndrome
30041	C164.13	Multicystic ovaries
9577	C172.12	Testicular hypogonadism
63528	C172000	Testicular hypofunc- defect adrenocortical hormone synthesis
21876	C172111	Kallman's syndrome

Medcode	Read Code	Description
39898	C18..00	Polyglandular dysfunction and related disorders
66490	C180.11	Wermer's syndrome
48130	C181.12	Schmidt's syndrome
52843	C182.00	Autoimmune polyglandular failure
92901	C183.00	Polyglandular hyperfunction
47995	C18z.00	Polyglandular dysfunction NOS
12724	C1A0.00	Metabolic syndrome
15995	C1z1.11	Precocious puberty
3031	C1z1000	Precocious puberty
25424	C1z1011	Precocious pubarche
22704	C1z1111	Precocious thelarche
34706	C1z4.00	Dwarfism NEC
65402	C1z4100	Constitutional dwarfism
66781	C1z4z00	Dwarfism NEC NOS
49161	C1z5.11	Androgen insensitivity syndrome
68146	C1zy000	Pineal gland dysfunction
36314	C1zy211	Sotos syndrome
57803	C1zy400	Werner's syndrome
35737	C20..00	Kwashiorkor
35893	C201.00	Marasmic kwashiorkor
5007	C24..00	Vitamin A deficiency
50073	C240.00	Vitamin A deficiency with conjunctival xerosis
31479	C241.00	Vitamin A deficiency + Bitot's spot and conjunctival xerosis
61766	C242.00	Vitamin A deficiency with corneal xerosis
102237	C244.00	Vitamin A deficiency with keratomalacia
66943	C245.00	Vitamin A deficiency with night blindness
60199	C246.00	Vitamin A deficiency with xerophthalmic corneal scars
49266	C247000	Vitamin A deficiency with xerophthalmia
45889	C24y.00	Vitamin A deficiency with other manifestation
49270	C24y100	Vitamin A deficiency with xeroderma
4667	C25..11	Vitamin B1 deficiency
31444	C252.00	Pellagra
45946	C26..00	Vitamin B-complex deficiency
33375	C260.11	Riboflavin deficiency
24059	C260.12	Vitamin B2 deficiency
48023	C261.00	Vitamin B6 deficiency syndrome
43354	C261.11	Vitamin B6 deficiency
42792	C26z.00	Vitamin B deficiency NOS
37282	C27..12	Vitamin C deficiency
10450	C28..11	Osteomalacia
5074	C28..12	Rickets
37350	C282.00	Osteomalacia unspecified
105896	C28A.00	Vitamin D-dependent rickets
51679	C291000	Vitamin E deficiency
100830	C291100	Vitamin P deficiency
47068	C294.00	Trace element deficiency
25194	C294200	Copper deficiency

Medcode	Read Code	Description
30100	C294400	Magnesium deficiency
106409	C2B..00	Vitamin D insufficiency
27435	C300100	Cystinuria
32371	C300200	Cystinaemia
23515	C300300	Fanconi-de-Toni syndrome
60390	C300311	Cystine storage disease
49217	C300400	Hartnup disease
107206	C300600	Acquired Fanconi syndrome
46357	C300z00	Amino-acid transport disorder NOS
4318	C301.00	Phenylketonuria
53954	C302.11	Albinism
45295	C302300	Tyrosinosis
63807	C302400	Tyrosinuria
47768	C302500	Lowe disease
53977	C302600	Hypertyrosinaemia
31001	C302611	Tyrosinaemia
15624	C302700	Albinism
31388	C302712	Albino
61861	C302900	Hermansky-Pudlak syndrome
69114	C303000	Leucinosis
60584	C303400	Hypervalinaemia
33575	C304300	Homocystinuria
104314	C304500	Hyperhomocysteinaemia
43907	C305000	Histidinaemia
55198	C305200	Histidinuria
10166	C307000	Hyperglycinaemia
48144	C307400	Hyperlysinaemia
22111	C309.00	Glutaryl CoA dehydrogenase deficiency
66720	C30y000	Alaninaemia
30533	C30y400	Hyperprolinaemia
57552	C30yy11	Adenosine-deaminase deficiency
31383	C310.00	Glycogenosis - glycogen storage disease
24186	C310.13	Glycogen storage disease
49317	C310000	McArdle's disease
65925	C310211	Von Gierke's disease
21934	C310212	Glucose-6-phosphatase deficiency
31944	C310412	Andersen's disease
5561	C311.00	Galactosaemia
20730	C311000	Galactose-1-phosphate uridyl transferase deficiency
65371	C311100	Galactokinase deficiency
64321	C311z00	Galactosaemia NOS
31384	C312.00	Hereditary fructose intolerance
57431	C313011	Malabsorption of glucose - galactose
37854	C313111	Lactose malabsorption
36042	C313200	Sucrose-isomaltose intolerance
38805	C313511	Malabsorption of glucose
42815	C313700	Disaccharidase deficiency

Medcode	Read Code	Description
92869	C313911	Malabsorption of disaccharide NEC
66577	C31y300	Mannosidosis
65382	C31yX00	Disorder of glycoprotein metabolism, unspecified
3484	C320.11	Familial hypercholesterolaemia
3386	C320000	Familial hypercholesterolaemia
102958	C320600	Polygenic hypercholesterolaemia
637	C324.00	Hyperlipidaemia NOS
56796	C326z00	Lipodystrophy NOS
35717	C327.12	Fabry's disease
109868	C327300	Wolman disease
71522	C327400	Alpha-galactosidase A deficiency
24161	C327411	Fabry's disease
93886	C327412	Anderson's disease
24660	C327413	Anderson-Fabry disease
107252	C329.00	Hypercholesterolaemia
57509	C330000	Waldenstrom's hypergammaglobulinaemic purpura
12386	C332z00	Paraproteinaemia NOS
16527	C333.00	Macroglobulinaemia
10411	C333000	Waldenstrom's macroglobulinaemia
108235	C333011	Waldenstrom macroglobulinaemia
71994	C333z00	Macroglobulinaemia NOS
5073	C33y000	Hypoproteinaemia
2983	C350000	Haemochromatosis
29966	C350300	Idiopathic pulmonary haemosiderosis
3870	C351011	Wilson's disease
26371	C352000	Hypermagnesaemia
33347	C353000	Hypophosphatasia
22028	C353100	Hypophosphatasia rickets
33586	C353200	Vitamin-D-resistant rickets
21870	C353211	Hypophosphataemic rickets
7902	C353300	Hypophosphataemia
9423	C353400	Hyperphosphataemia
105061	C353500	Acquired hypophosphataemia
106860	C353600	Renal failure-associated hyperphosphataemia
107983	C353700	X-linked hypophosphataemic rickets
106346	C353800	Autosomal dominant hypophosphataemic rickets
70714	C354111	Secondary hypercalcaemia
23540	C354300	Pseudohypoparathyroidism
60587	C354311	Pseudopseudohypoparathyroidism
60113	C362300	Lactic acidaemia
23337	C371000	Congenital porphyria
65126	C371600	Pseudoporphyria
43743	C371z00	Porphyria NOS
68482	C372000	Hypoxanthine-guanine-phosphoribosyltransferase deficiency
68112	C373600	Nephropathic amyloidosis
53970	C373700	Primary amyloidosis NEC
107595	C373H00	Amyloid A amyloidosis

Medcode	Read Code	Description
46738	C374000	Crigler - Najjar syndrome
39293	C374100	Dubin - Johnson syndrome
46507	C374300	Rotor syndrome
34624	C375.14	Lipochondrodystrophy
55775	C375.17	Osteochondrodystrophy
107648	C375000	Mannosidosis
69375	C375113	Scheie's syndrome
58584	C375411	Morquio - Brailsford syndrome
62281	C375611	Maroteaux - Lamy syndrome
52080	C375X00	Disorder of glucosaminoglycan metabolism, unspecified
25589	C376100	Alpha-1-antitrypsin hepatitis
3019	C376200	Alpha-1-antitrypsin deficiency
46749	C377111	Pseudo - Hurler's disease
62310	C37y300	Trypsinogen deficiency
51718	C37y500	Histiocytosis X , chronic
36736	C37y600	Histiocytosis X , unspecified
37126	C37y700	Histiocytosis, unspecified
51041	C37y800	Haemophagocytic lymphohistiocytosis
27934	C37y900	Haemophagocytic syndrome, infection-associated
40000	C37yB00	Langerhans' cell histiocytosis
11631	C37z.11	Marinesco-Sjogren syndrome
64905	C382.00	Hypervitaminosis A
32143	C384.00	Hypervitaminosis D
24755	C38y.11	Pickwickian syndrome
38294	C38y000	Pickwickian syndrome
35682	C390.11	Agammaglobulinaemia
15137	C390000	Hypogammaglobulinaemia NOS
8548	C390100	Selective IgA immunodeficiency
18701	C390200	Selective IgM immunodeficiency
18700	C390300	Selective IgG immunodeficiency
57161	C390500	Congenital hypogammaglobulinaemia
60880	C390512	Congenital X-linked agammaglobulinaemia
69373	C390600	Immunodeficiency with IgM hypergammaglobulinaemia
57322	C390700	Common variable immunodeficiency
62598	C390900	Agammaglobulinaemia NEC
50665	C391000	Predominantly T-cell immuno-deficiency NOS
31322	C391200	Wiskott - Aldrich syndrome
62236	C392.00	Combined immunity deficiency
72804	C392600	Adenosine deaminase deficiency
62328	C392z00	Combined immunity deficiency NOS
26410	C394.00	Autoimmune disease NOS
65617	C395.00	Immunodeficiency with short-limbed stature
54203	C397.00	Hyperimmunoglobulin E syndrome
21975	C398.00	Common variable immunodeficiency
66857	C398200	Common variable immunodef wth autoantibod to B- or T-cells
109671	C399000	Mannose-binding lectin deficiency
39800	C39X.00	Immunodeficiency associated+major defect, unspecified

Medcode	Read Code	Description
66218	C3A..00	Iodine-deficiency syndromes
52212	Cyu2.00	[X]Diabetes mellitus
795	D00..00	Iron deficiency anaemias
27726	D000.00	Iron deficiency anaemia due to chronic blood loss
48338	D000.12	Iron deficiency anaemia due to blood loss
40750	D00z200	Idiopathic hypochromic anaemia
15439	D00zz00	Iron deficiency anaemia NOS
4475	D01..11	Megaloblastic anaemia
2813	D010.11	Addison's anaemia
55370	D010.12	Biermer's congenital pernicious anaemia
46289	D010.13	Congenital deficiency of intrinsic factor
5271	D011.11	Vitamin B12 deficiency anaemia
32953	D011000	Vitamin B12 deficiency anaemia due to dietary causes
2482	D011100	Vit B12 defic anaemia due to malabsorption with proteinuria
62637	D011200	Transcobalamin II deficiency
59103	D012112	Megaloblastic anaemia due to dietary causes
64601	D014000	Amino-acid deficiency anaemia
104812	D01y000	Vitamin C deficiency anaemia
62257	D01y100	Vitamin E deficiency anaemia
57274	D01z.00	Other deficiency anaemias NOS
53799	D01z.11	Megaloblastic anaemia NOS
3326	D1...00	Haemolytic anaemias
39456	D10..00	Hereditary haemolytic anaemias
7237	D100.00	Hereditary spherocytosis
71808	D102.00	Haemolytic anaemia due to glutathione metabolism disorder
22531	D102000	Glucose-6-phosphate dehydrogenase deficiency anaemia
107820	D103000	Haemolytic anaemia due to hexokinase deficiency
55561	D103100	Haemolytic anaemia due to pyruvate kinase deficiency
1171	D104.00	Thalassaemia
1174	D104100	Thalassaemia minor NEC
54429	D104200	Thalassaemia with haemoglobin S disease
31075	D104211	Sickle-cell thalassaemia
8866	D104300	Alpha thalassaemia
37808	D104311	Homozygous alpha thalassaemia
12235	D104400	Alpha trait thalassaemia
9864	D104500	Beta trait thalassaemia
57144	D104600	Beta intermedia thalassaemia
27761	D104800	Beta minor thalassaemia
32943	D104900	Delta-beta thalassaemia
4666	D104z00	Thalassaemia NOS
3616	D105.00	Sickle-cell trait
23519	D106.00	Sickle-cell anaemia
69964	D106000	Sickle-cell anaemia of unspecified type
32937	D106100	Sickle-cell anaemia with no crisis
31370	D106200	Sickle-cell anaemia with crisis
31306	D106300	Sickle-cell anaemia with haemoglobin C disease
8119	D106400	Sickle-cell anaemia with haemoglobin D disease

Medcode	Read Code	Description
93872	D106500	Sickle-cell anaemia with haemoglobin E disease
57397	D106z00	Sickle-cell anaemia NOS
57298	D107000	Congenital Heinz-body anaemia
31800	D107300	Haemoglobin-C disease
7624	D107400	Haemoglobin-D disease
32373	D107500	Haemoglobin-E disease
31662	D107600	Haemoglobin Zurich disease
7526	D107700	Haemoglobin-H disease
14698	D10z.00	Hereditary haemolytic anaemia NOS
27771	D11..00	Acquired haemolytic anaemias
3818	D110.00	Autoimmune haemolytic anaemias
39876	D110z00	Autoimmune haemolytic anaemia NOS
57897	D111.00	Non-autoimmune haemolytic anaemia
29323	D111300	Haemolytic-uraemic syndrome
94214	D111z00	Non-autoimmune haemolytic anaemia NOS
100022	D112012	Marchiafava - Micheli syndrome
35612	D112100	Paroxysmal nocturnal haemoglobinuria
50495	D112z12	Acquired haemolytic anaemia with haemoglobinuria NEC
29933	D11z000	Acquired spherocytosis
18631	D1z..00	Haemolytic anaemias NOS
109273	D200.13	Blackfan - Diamond syndrome
44913	D200.15	Hypoplastic anaemia - familial
37320	D200000	Congenital hypoplastic anaemia
72252	D200300	Constitutional red cell aplasia and hypoplasia
32900	D200311	Blackfan - Diamond syndrome
7225	D200312	Congenital pure red cell aplasia
47438	D200313	Constitutional red cell hypoplasia
61462	D200314	Congenital red cell hypoplasia
43166	D201100	Aplastic anaemia due to drugs
32715	D201111	Hypoplastic anaemia due to drug or chemical substance
57859	D201200	Aplastic anaemia due to infection
65351	D201211	Hypoplastic anaemia due to infection
66239	D201400	Aplastic anaemia due to toxic cause
57114	D201412	Hypoplastic anaemia due to toxic cause
31774	D201z13	Secondary red cell hypoplasia NEC
65502	D201z14	Secondary red cell aplasia NEC
69269	D20X.00	Acquired pure red cell aplasia, unspecified
43330	D210000	Congenital sideroblastic anaemia
41699	D210100	Acquired sideroblastic anaemia
31550	D210300	Secondary sideroblastic anaemia due to disease
47225	D210400	Secondary sideroblastic anaemia due to drugs and toxins
53422	D21y000	Congenital dyshaematopoietic anaemia
31040	D21y011	Congenital dyserythropoietic anaemia
56752	D21y012	Congenital dyserythropoiesis NEC
5632	D300.00	Haemophilia-A (factor VIII deficiency)
2833	D300.12	Haemophilia A
31166	D301.12	Haemophilia B

Medcode	Read Code	Description
22706	D302.00	Haemophilia-C (factor XI deficiency)
56664	D302.11	Haemophilia C
46026	D303.00	Congenital deficiency of other clotting factors
59314	D303000	Congenital afibrinogenaemia
36588	D303100	Deficiency of factor II or prothrombin
51291	D303111	Hypoprothrombinaemia
15556	D303200	Deficiency of factor V or labile factor
45637	D303300	Deficiency of factor VII or stable factor
47198	D303400	Deficiency of factor X or Stuart-Prower factor
34673	D303500	Deficiency of factor XII or Hageman factor
20174	D303600	Deficiency of factor XIII or fibrin stabilizing factor
44146	D303800	Homozygous factor V Leiden mutation
54725	D303y00	Congenital deficiency of other clotting factor OS
57275	D303z00	Congenital deficiency of other clotting factor NOS
17520	D304.00	Von Willebrand's disease
46025	D307.00	Acquired coagulation factor deficiency
46546	D307200	Acquired factor II deficiency
43824	D307211	Acquired prothrombin deficiency
103789	D307212	Acquired hypoprothrombinaemia
37587	D307z00	Acquired coagulation factor deficiency NOS
8479	D309.00	Protein S deficiency
26102	D30B.00	Protein C deficiency
46726	D311000	Hereditary haemorrhagic thrombasthenia
5144	D313.12	Idiopathic thrombocytopenic purpura
65723	D313.14	Megakaryocytic hypoplasia
12234	D313000	Idiopathic thrombocytopenic purpura
55582	D313100	Congenital thrombocytopenic purpura
58906	D313111	Hereditary thrombocytopenia NEC
68533	D313211	TAR syndrome
53113	D400500	Congenital neutropenia
66049	D401000	Congenital dysphagocytosis
50985	D402.16	Pelger - Huet anomaly
44611	D410300	Polycythaemia due to cyanotic respiratory disease
44894	D410400	Renal polycythaemia
10702	D414.00	Hypersplenism
111382	D417.12	Sulphaemoglobinaemia
34150	D41y000	Hypergammaglobulinaemia
2337	D41y200	Pseudocholinesterase deficiency
18636	E011200	Wernicke-Korsakov syndrome
854	E10..00	Schizophrenic disorders
73295	E100.11	Schizophrenia simplex
58687	E100500	Schizophrenia in remission
66506	E101000	Unspecified hebephrenic schizophrenia
1494	E103.00	Paranoid schizophrenia
36172	E103500	Paranoid schizophrenia in remission
9281	E103z00	Paranoid schizophrenia NOS
56438	E107500	Schizo-affective schizophrenia in remission

Medcode	Read Code	Description
8407	E10z.00	Schizophrenia NOS
8567	E11..11	Bipolar psychoses
26161	E11..13	Manic psychoses
37070	E110.00	Manic disorder, single episode
36611	E110z00	Manic disorder, single episode NOS
26227	E111.00	Recurrent manic episodes
46425	E111100	Recurrent manic episodes, mild
27739	E111200	Recurrent manic episodes, moderate
65811	E111300	Recurrent manic episodes, severe without mention psychosis
32295	E111400	Recurrent manic episodes, severe, with psychosis
58863	E111500	Recurrent manic episodes, partial or unspecified remission
37178	E111600	Recurrent manic episodes, in full remission
46415	E111z00	Recurrent manic episode NOS
3702	E114.00	Bipolar affective disorder, currently manic
35738	E114000	Bipolar affective disorder, currently manic, unspecified
36126	E114100	Bipolar affective disorder, currently manic, mild
46434	E114200	Bipolar affective disorder, currently manic, moderate
55829	E114400	Bipolar affect disord, currently manic,severe with psychosis
59011	E114500	Bipolar affect disord,currently manic, part/unspec remission
63784	E114600	Bipolar affective disorder, currently manic, full remission
57605	E114z00	Bipolar affective disorder, currently manic, NOS
4677	E115.00	Bipolar affective disorder, currently depressed
35734	E115100	Bipolar affective disorder, currently depressed, mild
27890	E115200	Bipolar affective disorder, currently depressed, moderate
35607	E115300	Bipolar affect disord, now depressed, severe, no psychosis
63701	E115400	Bipolar affect disord, now depressed, severe with psychosis
72026	E115500	Bipolar affect disord, now depressed, part/unspec remission
57465	E115600	Bipolar affective disorder, now depressed, in full remission
37296	E115z00	Bipolar affective disorder, currently depressed, NOS
31316	E116.00	Mixed bipolar affective disorder
31535	E116000	Mixed bipolar affective disorder, unspecified
24689	E116100	Mixed bipolar affective disorder, mild
63150	E116200	Mixed bipolar affective disorder, moderate
63284	E116300	Mixed bipolar affective disorder, severe, without psychosis
54195	E116400	Mixed bipolar affective disorder, severe, with psychosis
63651	E116500	Mixed bipolar affective disorder, partial/unspec remission
55064	E116600	Mixed bipolar affective disorder, in full remission
63583	E116z00	Mixed bipolar affective disorder, NOS
49763	E117000	Unspecified bipolar affective disorder, unspecified
63698	E117100	Unspecified bipolar affective disorder, mild
68647	E117200	Unspecified bipolar affective disorder, moderate
73423	E117300	Unspecified bipolar affective disorder, severe, no psychosis
68326	E117400	Unspecified bipolar affective disorder,severe with psychosis
70721	E117500	Unspecified bipolar affect disord, partial/unspec remission
24230	E117600	Unspecified bipolar affective disorder, in full remission
27986	E117z00	Unspecified bipolar affective disorder, NOS
109634	E121.11	Sander's disease

Medcode	Read Code	Description
43225	E14..00	Psychoses with origin in childhood
22098	E140.00	Infantile autism
43444	E140.11	Kanner's syndrome
1276	E140.12	Autism
7302	E140.13	Childhood autism
36662	E140z00	Infantile autism NOS
71819	E14y.00	Other childhood psychoses
24244	E14y000	Atypical childhood psychoses
66757	E14yz00	Other childhood psychoses NOS
37395	E14z.11	Childhood schizophrenia NOS
3208	E203.00	Obsessive-compulsive disorders
15566	E203z00	Obsessive-compulsive disorder NOS
2135	E271.00	Anorexia nervosa
36541	E2D2211	Mutism of childhood or adolescence
3775	E2E..00	Childhood hyperkinetic syndrome
34199	E2E0000	Attention deficit without hyperactivity
58069	E2E1.00	Hyperkinesis with developmental delay
45263	E2E2.00	Hyperkinetic conduct disorder
41769	E2Ez.00	Hyperkinetic syndrome NOS
3567	E2F3.00	Speech or language developmental disorder
6340	E2F3.11	Language development disorder
3417	E2F3.12	Speech development disorder
1277	E2F3z00	Speech or language developmental disorder NOS
1362	E3...00	Mental retardation
302	E310.00	Moderate mental retardation, IQ in range 35-49
45133	E312.00	Profound mental retardation with IQ less than 20
37867	E3z..00	Mental retardation NOS
91547	Eu20311	[X]Atypical schizophrenia
26299	Eu31100	[X]Bipolar affect disorder cur epi manic wout psychotic symp
28277	Eu31200	[X]Bipolar affect disorder cur epi manic with psychotic symp
23713	Eu31400	[X]Bipol aff disord, curr epis sev depress, no psychot symp
44693	Eu31600	[X]Bipolar affective disorder, current episode mixed
27584	Eu31700	[X]Bipolar affective disorder, currently in remission
104065	Eu31800	[X]Bipolar affective disorder type I
103915	Eu31900	[X]Bipolar affective disorder type II
33751	Eu31z00	[X]Bipolar affective disorder, unspecified
34929	Eu50100	[X]Atypical anorexia nervosa
9581	Eu50200	[X]Bulimia nervosa
33863	Eu50300	[X]Atypical bulimia nervosa
36946	Eu50z00	[X]Eating disorder, unspecified
28962	Eu7..00	[X]Mental retardation
36143	Eu72.00	[X]Severe mental retardation
6514	Eu80z00	[X]Developmental disorder of speech and language unspecified
98342	Eu81400	[X]Moderate learning disability
98293	Eu81500	[X]Severe learning disability
4477	Eu81z11	[X]Learning disability NOS
3637	Eu84000	[X]Childhood autism

Medcode	Read Code	Description
9982	Eu84011	[X]Autistic disorder
50337	Eu84012	[X]Infantile autism
24044	Eu84100	[X]Atypical autism
24062	Eu84111	[X]Atypical childhood psychosis
34174	Eu84112	[X]Mental retardation with autistic features
51375	Eu84511	[X]Autistic psychopathy
42941	Eu84z11	[X]Autistic spectrum disorder
100899	Eu85.00	[X]Global developmental delay
33505	Eu90100	[X]Hyperkinetic conduct disorder
45799	Eu90111	[X]Hyperkinetic disorder associated with conduct disorder
50015	Eu90z00	[X]Hyperkinetic disorder, unspecified
97421	Eu90z11	[X]Hyperkinetic reaction of childhood or adolescence NOS
96770	Eu90z12	[X]Hyperkinetic syndrome NOS
26285	Eu9y700	[X]Attention deficit disorder
6494	F037.00	Transverse myelitis
34092	F1...00	Hereditary and degenerative diseases of the CNS
59035	F100z00	Leucodystrophy NOS
21169	F101300	Tay-Sach's disease
31892	F11..00	Other cerebral degenerations
11136	F111.00	Pick's disease
4675	F113.00	Acquired communicating hydrocephalus
3584	F115.00	Hydrocephalus
34976	F11y.00	Other cerebral degeneration
31524	F11yz00	Other cerebral degeneration NOS
21863	F130.00	Other basal ganglia degenerative diseases
40553	F130400	Progressive supranuclear ophthalmoplegia
35839	F130500	Shy-Drager syndrome
50762	F130z00	Other basal ganglia degenerative disease NOS
37644	F132100	Progressive myoclonic epilepsy
45602	F132200	Myoclonic encephalopathy
37897	F132z00	Myoclonus NOS
8487	F132z12	Myoclonic seizure
62243	F136000	Idiopathic familial dystonia
66314	F137111	Congenital athetosis
23356	F138100	Orofacial dyskinesia
107057	F139000	Paroxysmal non-kinesigenic dyskinesia
94690	F13B.00	Myoclonic dystonia
97143	F13C.00	Segawa syndrome
3514	F141.00	Hereditary spastic paraplegia
99763	F142000	Marie's cerebellar ataxia
111807	F142100	Sanger-Brown cerebellar ataxia
109176	F143.11	Roussy-Levy syndrome
50096	F145.00	Congenital nonprogressive ataxia
21889	F15..00	Anterior horn cell disease
70109	F151300	X-linked bulbo-spinal atrophy
7470	F152111	Duchenne Aran muscular atrophy
71400	F15y.00	Other anterior horn cell disease

Medcode	Read Code	Description
58729	F15z.00	Anterior horn cell disease NOS
69740	F160.00	Syringomyelia and syringobulbia
47358	F160100	Syringobulbia
96785	F160z00	Syringomyelia or syringobulbia NOS
5600	F172.00	[X] Horners syndrome
16167	F17z.11	Horner's syndrome
61968	F1y..00	Hereditary and degenerative diseases of the CNS OS
105180	F1y0.00	Fragile X associated tremor ataxia syndrome
56006	F1z..00	Hereditary and degenerative diseases of the CNS NOS
69886	F201.00	Multiple sclerosis of the spinal cord
44795	F210.00	Neuromyelitis optica
56153	F21y000	Marchiafava-Bignami disease
1749	F22..00	Hemiplegia
807	F22..11	Hemiparesis
39085	F220.00	Flaccid hemiplegia
8933	F222.00	Left hemiplegia
3293	F223.00	Right hemiplegia
8492	F22z.00	Hemiplegia NOS
2069	F23..00	Congenital cerebral palsy
15530	F23..11	Congenital spastic cerebral palsy
5560	F23..12	Infantile cerebral palsy
25324	F230.00	Congenital diplegia
99040	F230.11	Paraplegia - congenital
37160	F230000	Congenital paraplegia
5512	F230100	Cerebral palsy with spastic diplegia
104775	F230111	Spastic diplegic cerebral palsy
45551	F230z00	Congenital diplegia NOS
27966	F231.00	Congenital hemiplegia
33925	F233.00	Congenital monoplegia
55593	F233.11	Congenital spastic foot
2019	F234.00	Infantile hemiplegia NOS
53178	F23y.00	Other congenital cerebral palsy
21548	F23y000	Ataxic infantile cerebral palsy
104828	F23y100	Flaccid infantile cerebral palsy
25570	F23y200	Spastic cerebral palsy
52659	F23y400	Ataxic diplegic cerebral palsy
100627	F23y511	Congenital suprabulbar paresis
28306	F23z.00	Congenital cerebral palsy NOS
46175	F241000	Flaccid paraplegia
9375	F241100	Spastic paraplegia
9385	F24y000	Progressive supranuclear palsy
49034	F24y011	Steele Richardson Olszewsk syn
93910	F24y012	Steele - Richardson Oszewski syndrome
18688	F24y100	Todd's paralysis
7037	F24y200	Steele-Richardson-Olszewski syndrome
573	F25..00	Epilepsy
2907	F250000	Petit mal (minor) epilepsy

Medcode	Read Code	Description
1715	F250011	Epileptic absences
24309	F250200	Epileptic seizures - atonic
31830	F250300	Epileptic seizures - akinetic
17399	F250400	Juvenile absence epilepsy
44252	F250z00	Generalised nonconvulsive epilepsy NOS
26144	F251.00	Generalised convulsive epilepsy
988	F251000	Grand mal (major) epilepsy
22804	F251011	Tonic-clonic epilepsy
37782	F251100	Neonatal myoclonic epilepsy
18471	F251200	Epileptic seizures - clonic
4801	F251300	Epileptic seizures - myoclonic
5152	F251400	Epileptic seizures - tonic
8187	F251500	Tonic-clonic epilepsy
5668	F251600	Grand mal seizure
40806	F251z00	Generalised convulsive epilepsy NOS
5117	F253.00	Grand mal status
4093	F253.11	Status epilepticus
32288	F254.00	Partial epilepsy with impairment of consciousness
3175	F254000	Temporal lobe epilepsy
23634	F254100	Psychomotor epilepsy
36203	F254200	Psychosensory epilepsy
31920	F254z00	Partial epilepsy with impairment of consciousness NOS
26015	F255.00	Partial epilepsy without impairment of consciousness
5525	F255011	Focal epilepsy
65699	F255012	Motor epilepsy
98870	F255311	Partial epilepsy with autonomic symptoms
68946	F255500	Unilateral epilepsy
26733	F255y00	Partial epilepsy without impairment of consciousness OS
27526	F255z00	Partial epilepsy without impairment of consciousness NOS
71719	F257.00	Kojevnikov's epilepsy
51998	F259.11	Ohtahara syndrome
19363	F25A.00	Juvenile myoclonic epilepsy
108409	F25G.00	Severe myoclonic epilepsy in infancy
106571	F25H.00	Generalised seizure
38307	F25y.00	Other forms of epilepsy
19170	F25y400	Benign Rolandic epilepsy
9979	F25yz00	Other forms of epilepsy NOS
9747	F25z.00	Epilepsy NOS
161	F26..00	Migraine
103502	F260.11	Migraine with aura
103602	F261.11	Migraine without aura
103577	F262E00	Trigeminal autonomic cephalalgia
23621	F262z00	Migraine variant NOS
28031	F26y.00	Other forms of migraine
3658	F26y000	Hemiplegic migraine
65262	F26y111	Moebius' ophthalmoplegic migraine
22685	F26y200	Status migrainosus

Medcode	Read Code	Description
28092	F26yz00	Other forms of migraine NOS
14700	F26z.00	Migraine NOS
11779	F271.00	Narcolepsy
49810	F280200	Pseudoporencephaly
37877	F280z11	Intracerebral cyst NOS
46041	F282.11	Pseudotumour cerebri
7529	F286.11	CFS - Chronic fatigue syndrome
98734	F286200	Severe chronic fatigue syndrome
26280	F28y300	Ventriculomegaly
101224	F28y400	GLUT1 deficiency syndrome
65275	F2Az.00	Hemiparesis NOS
104498	F2B..00	Cerebral palsy
104580	F2B0.00	Spastic quadriplegic cerebral palsy
105133	F2B1.00	Spastic hemiplegic cerebral palsy
104782	F2By.00	Other cerebral palsy
104654	F2Bz.00	Cerebral palsy NOS
28294	F326100	Polyneuritis cranialis
36560	F326200	Moebius congenital oculofacial paralysis
24409	F335.11	Parsonage - Aldren - Turner syndrome
28901	F361.00	Peroneal muscular atrophy
5584	F361000	Charcot-Marie-Tooth disease
108834	F361012	Charcot-Marie-Tooth syndrome
70040	F361z00	Peroneal muscular atrophy NOS
32527	F368.00	Hereditary motor and sensory neuropathy
56910	F368000	Hereditary motor and sensory neuropathy type I
35465	F368100	Hereditary motor and sensory neuropathy type II
106103	F368200	Hereditary motor and sensory neuropathy type III
45081	F37..11	Toxic neuropathy
33841	F370200	Miller-Fisher syndrome
57313	F371.00	Polyneuropathy in collagen vascular disease
44095	F371000	Polyneuropathy in disseminated lupus erythematosus
47465	F371100	Polyneuropathy in polyarteritis nodosa
62401	F371200	Polyneuropathy in rheumatoid arthritis
71258	F371z00	Polyneuropathy in collagen vascular disease NOS
31790	F372.00	Polyneuropathy in diabetes
30537	F373.00	Polyneuropathy in malignant disease
56272	F374.00	Polyneuropathy in disease EC
66336	F374000	Polyneuropathy in amyloidosis
73337	F374100	Polyneuropathy in beriberi
24355	F374200	Polyneuropathy in vitamin B deficiency
52089	F374300	Polyneuropathy in diphtheria
39692	F374400	Polyneuropathy in herpes zoster
68960	F374500	Polyneuropathy in hypoglycaemia
100064	F374600	Polyneuropathy in mumps
58758	F374800	Polyneuropathy in porphyria
40751	F374900	Polyneuropathy in sarcoidosis
63555	F374z00	Polyneuropathy in disease NOS

Medcode	Read Code	Description
24222	F376.00	Polyneuropathy due to drugs
24226	F37z.11	Polyneuropathy unspecified
104026	F38..11	Neuromuscular disease
66740	F380100	Juvenile or adult myasthenia gravis
27515	F380z00	Myasthenia gravis NOS
51640	F381.00	Myasthenic syndrome due to disease EC
105082	F381011	Lambert-Eaton syndrome
57551	F381100	Myasthenic syndrome due to other malignancy
95005	F381200	Myasthenic syndrome due to botulism
39420	F381300	Myasthenic syndrome due to diabetic amyotrophy
61069	F381400	Myasthenic syndrome due to hypothyroidism
56973	F381500	Myasthenic syndrome due to pernicious anaemia
47695	F381600	Myasthenic syndrome due to thyrotoxicosis
65825	F381z00	Myasthenic syndrome due to disease NOS
63323	F382.00	Toxic myoneural disorder
36697	F38y.11	Amyotonia congenita
22246	F38y.13	Congenital benign hypotonia
63333	F390000	Benign congenital myopathy
68118	F391.00	Hereditary progressive muscular dystrophy
26210	F391011	Pseudohypertrophic dystrophy
48036	F391100	Erb's muscular dystrophy
66726	F391500	Distal (Gower's) muscular dystrophy
38448	F391700	Oculopharyngeal muscular dystrophy
32749	F391800	Becker muscular dystrophy
34985	F391A00	Emery-Dreifuss muscular dystrophy
23484	F392111	Thomsen's disease
54014	F392300	Infantile myotonia
101786	F392400	Neuromyotonia
44867	F392z00	Myotonic disorder NOS
32916	F394.00	Toxic myopathy
18307	F39X.00	Mitochondrial myopathy, not elsewhere classified
45876	F421200	Renal retinopathy
39637	F421A11	Retinitis proliferans
66964	F426500	Pseudoretinitis pigmentosa
22727	F427.00	Hereditary retinal dystrophies
42511	F427000	Unspecified hereditary retinal dystrophies
97370	F427200	Hereditary retinal dystrophies with other diseases
28450	F427300	Juvenile retinoschisis
2745	F427600	Retinitis pigmentosa
43899	F427700	Other pigmented retinal dystrophies
44058	F427811	Progressive rod dystrophy
29168	F427C00	Vitelliform dystrophy
69100	F427H00	Other Bruch's membrane dystrophy
28113	F427J00	Leber's congenital amaurosis
50363	F427z00	Hereditary retinal dystrophy NOS
64654	F435.00	Hereditary choroid dystrophies
99620	F435000	Unspecified hereditary choroid dystrophy

Medcode	Read Code	Description
41668	F460.00	Infantile, juvenile and presenile cataracts
49621	F475100	Total internal ophthalmoplegia
9884	F480011	Congenital amblyopia
40637	F486300	Congenital night blindness NOS
28386	F4A0400	Hypopyon ulcer
94708	F4B2100	Idiopathic corneal oedema
64693	F4B5100	Juvenile epithelial corneal dystrophy
52610	F4E3411	Pseudoptosis
45341	F4E4113	Marcus - Gunn syndrome
24805	F4G1111	Pseudotumour of orbit
3826	F4H1.00	Optic atrophy
95763	F4H1300	Optic atrophy due to retinal dystrophy
45706	F4H1600	Leber's hereditary optic atrophy
48037	F4H1711	Leber's optic atrophy
41833	F4H1z00	Optic atrophy NOS
22373	F4H3400	Toxic optic neuropathy
26835	F4H3z00	Optic neuritis NOS
47132	F4H5.00	Optic chiasm disorders
47676	F4H5z00	Optic chiasm disorder NOS
94560	F4J3000	Unspecified heterotropia
22632	F4J4600	Pseudostrabismus
7766	F4J7000	Duane's syndrome
98579	F4J7011	Stilling-Turck-Duane syndrome
15996	F4K0.00	Scleritis and episcleritis
5318	F4K0.12	Scleritis
37665	F4K0500	Sclerokeratitis
44859	F4K0z00	Scleritis or episcleritis NOS
1523	F4K4600	Adie's pupil syndrome
32176	F4K5600	Other forms of nystagmus
536	F591.00	Sensorineural hearing loss
3171	F591211	Nerve deafness
10665	F591400	Congenital sensorineural deafness
10112	F591600	Sensorineural hearing loss, bilateral
29191	F591700	Sensorineurl hear loss,unilat unrestrict hear/contralat side
100736	F591800	Congenital prelingual deafness
107323	F591A00	Bilateral congenital sensorineural hearing loss
107607	F591B00	Profound sensorineural hearing loss
107350	F591C00	Moderate sensorineural hearing loss
107610	F591E00	Severe sensorineural hearing loss
3747	F593.00	Deaf mutism, NEC
686	F59z.00	Deafness NOS
7603	Fy03.00	Sleep apnoea
108703	Fy1..12	Deafblind
48189	G00..00	Rheumatic fever without heart involvement
44756	G01..00	Rheumatic fever with heart involvement
69995	G020.00	Rheumatic chorea with heart involvement
63252	G021.00	Rheumatic chorea without mention of heart involvement

Medcode	Read Code	Description
72936	G02z.00	Rheumatic chorea NOS
9312	G1...00	Chronic rheumatic heart disease
1267	G11..00	Mitral valve diseases
1885	G110.00	Mitral stenosis
32435	G110.11	Rheumatic mitral stenosis
51879	G111.00	Rheumatic mitral insufficiency
21807	G111.11	Mitral incompetence - rheumatic
22837	G111.12	Mitral regurgitation - rheumatic
44488	G112.00	Mitral stenosis with insufficiency
50983	G112.12	Mitral stenosis with incompetence
44328	G112.13	Mitral stenosis with regurgitation
30443	G11z.00	Mitral valve disease NOS
9391	G120.00	Rheumatic aortic stenosis
32211	G121.00	Rheumatic aortic insufficiency
43347	G121.11	Aortic incompetence - rheumatic
7963	G121.12	Aortic regurgitation - rheumatic
63960	G122.00	Rheumatic aortic stenosis with insufficiency
50809	G12z.00	Rheumatic aortic valve disease NOS
49355	G131.00	Mitral stenosis and aortic insufficiency
61250	G131.13	Mitral stenosis and aortic incompetence
33262	G132.00	Mitral insufficiency and aortic stenosis
31759	G132.12	Mitral incompetence and aortic stenosis
33907	G132.13	Mitral regurgitation and aortic stenosis
31727	G133.00	Mitral and aortic incompetence
94872	G133.11	Mitral and aortic insufficiency
11878	G133.12	Mitral and aortic regurgitation
29158	G13z.00	Mitral and aortic valve disease NOS
16373	G140.00	Tricuspid valve disease NEC
31505	G140000	Rheumatic tricuspid stenosis
60266	G140100	Rheumatic tricuspid insufficiency
21980	G140111	Tricuspid regurgitation - rheumatic
42239	G140112	Tricuspid incompetence - rheumatic
93114	G140200	Rheumatic tricuspid stenosis and insufficiency
93113	G14021X	Rheumatic tricuspid stenosis and regurgitation
62186	G14021Y	Rheumatic tricuspid stenosis and incompetence
56029	G140300	Tricuspid stenosis, cause unspecified
42128	G140400	Tricuspid insufficiency, cause unspecified
34869	G140412	Tricuspid incompetence, cause unspecified
9286	G140413	Tricuspid regurgitation, cause unspecified
72306	G140500	Tricuspid stenosis and insufficiency, cause unspecified
49551	G140514	Tricuspid stenosis and regurgitation, cause unspecified
72613	G140z00	Rheumatic tricuspid valve disease NOS
44167	G141.00	Rheumatic pulmonary valve disease
62207	G141000	Rheumatic pulmonary stenosis
54088	G141100	Rheumatic pulmonary insufficiency
105626	G141200	Rheumatic pulmonary stenosis and insufficiency
36768	G141z00	Rheumatic pulmonary valve disease NOS

Medcode	Read Code	Description
59275	G14z.11	Rheumatic valvulitis, chronic NOS
62404	G1y0.00	Rheumatic myocarditis
53878	G1yz000	Rheumatic heart disease unspecified
22262	G1yz100	Rheumatic left ventricular failure
799	G20..00	Essential hypertension
107704	G20..12	Primary hypertension
31464	G21z.00	Hypertensive heart disease NOS
61166	G21z000	Hypertensive heart disease NOS without CCF
62718	G21z100	Hypertensive heart disease NOS with CCF
4668	G22..00	Hypertensive renal disease
32423	G222.00	Hypertensive renal disease with renal failure
63466	G23..00	Hypertensive heart and renal disease
21837	G232.00	Hypertensive heart&renal dis wth (congestive) heart failure
28684	G233.00	Hypertensive heart and renal disease with renal failure
57987	G234.00	Hyperten heart&renal dis+both(congestv)heart and renal fail
68659	G23z.00	Hypertensive heart and renal disease NOS
7329	G24..00	Secondary hypertension
42229	G24zz00	Secondary hypertension NOS
7057	G2z..00	Hypertensive disease NOS
15661	G310.11	Dressler's syndrome
2155	G341000	Ventricular cardiac aneurysm
91774	G341300	Acquired atrioventricular fistula of heart
23708	G361.00	Atrial septal defect/curr comp folow acut myocardal infarct
7180	G4...00	Pulmonary circulation diseases
24444	G401.11	Infarction - pulmonary
54113	G41y.00	Other chronic pulmonary heart disease
34065	G41y000	Secondary pulmonary hypertension
71046	G41yz00	Other chronic pulmonary heart disease NOS
37807	G42y000	Pulmonary arteritis
55416	G52y700	Toxic myocarditis
59140	G532100	Pick's disease of heart
65807	G532z00	Constrictive pericarditis NOS
2977	G540.00	Mitral valve incompetence
40949	G540.12	Mitral valve insufficiency
9450	G540.14	Mitral valve regurgitation
1294	G540.15	Mitral valve prolapse
561	G540.16	Mitral regurgitation
5058	G540000	Mitral incompetence, non-rheumatic
34240	G540100	Mitral incompetence, cause unspecified
31839	G540200	Mitral valve prolapse
39916	G540300	Mitral valve leaf prolapse
24557	G540z00	Mitral valve disorders NOS
4548	G541.00	Aortic valve disorders
14998	G541000	Aortic incompetence, non-rheumatic
47887	G541011	Aortic insufficiency, non-rheumatic
10187	G541012	Aortic regurgitation, non-rheumatic
999	G541100	Aortic stenosis, non-rheumatic

Medcode	Read Code	Description
1007	G541200	Aortic incompetence alone, cause unspecified
58810	G541211	Aortic insufficiency alone, cause unspecified
1005	G541212	Aortic regurgitation alone, cause unspecified
2343	G541300	Aortic stenosis alone, cause unspecified
10964	G541400	Aortic valve stenosis with insufficiency
9591	G541500	Aortic stenosis
30610	G541600	Aortic valve sclerosis
49185	G541700	Aortic valve calcification
2817	G542.00	Tricuspid valve disorders, non-rheumatic
1779	G542000	Tricuspid incompetence, non-rheumatic
97738	G542011	Tricuspid insufficiency, non-rheumatic
35372	G542012	Tricuspid regurgitation, non-rheumatic
35724	G542100	Tricuspid stenosis, non-rheumatic
43855	G542z00	Tricuspid valve disorders NOS
12312	G543.00	Pulmonary valve disorders
23608	G543000	Pulmonary incompetence, non-rheumatic
15496	G543012	Pulmonary regurgitation, non-rheumatic
14723	G543100	Pulmonary stenosis, non-rheumatic
46736	G543200	Pulmonary incompetence, cause unspecified
38299	G543213	Pulmonary insufficiency, cause unspecified
2669	G543300	Pulmonary stenosis, cause unspecified
61878	G543311	Pulmonary stenosis, cause unspecified
34932	G543400	Pulmonary valve stenosis with insufficiency
40239	G544.00	Multiple valve diseases
57338	G544X00	Multiple valve disease, unspecified
22003	G54z013	Regurgitation of unspecified heart valve
73283	G552.11	Becker's disease
68766	G554011	Congestive obstructive cardiomyopathy
30667	G557000	Amyloid heart disease
47037	G558300	Sarcoid heart disease
105651	G558400	Amyloid cardiomyopathy
4549	G56..12	Heart block
58032	G561000	Atrioventricular block unspecified
27928	G561300	Mobitz type I (Wenckebach) atrioventricular block
103752	G561311	Mobitz type 1 second degree atrioventricular block
27375	G561z00	Atrioventricular block NOS
53826	G562z00	Left bundle branch hemiblock NOS
26318	G563.00	Left main stem bundle branch block
98675	G565100	Right BBB with left posterior fascicular block
57069	G565200	Right BBB with left anterior fascicular block
72653	G565300	Other bilateral bundle branch block
39003	G565z00	Other bundle branch block NOS
39843	G566.00	Other heart block
18437	G566000	Sinoatrial block
46178	G566z00	Other heart block NOS
25147	G567.00	Anomalous atrioventricular excitation
8230	G567400	Wolff-Parkinson-White syndrome

Medcode	Read Code	Description
42803	G567z00	Anomalous atrioventricular excitation NOS
22691	G56y200	Romano - Ward syndrome
19337	G56y500	Long Q-T syndrome
3769	G56z000	Stokes-Adams syndrome
4940	G570.00	Paroxysmal supraventricular tachycardia
23647	G570100	Paroxysmal atrioventricular tachycardia
51845	G570200	Paroxysmal junctional tachycardia
29491	G570300	Paroxysmal nodal tachycardia
35124	G570z00	Paroxysmal supraventricular tachycardia NOS
7794	G571.11	Ventricular tachycardia
25266	G572.00	Paroxysmal tachycardia unspecified
1381	G572z00	Paroxysmal tachycardia NOS
2212	G573.00	Atrial fibrillation and flutter
1664	G573000	Atrial fibrillation
96277	G573400	Permanent atrial fibrillation
107472	G573600	Paroxysmal atrial flutter
23437	G573z00	Atrial fibrillation and flutter NOS
9023	G576300	Atrial premature depolarization
426	G577.00	Sinus arrhythmia
7827	G57y.00	Other cardiac dysrhythmias
1536	G57y900	Supraventricular tachycardia NOS
31133	G57yz00	Other cardiac dysrhythmia NOS
10079	G580.12	Right heart failure
884	G581.00	Left ventricular failure
23481	G581.11	Asthma - cardiac
104275	G584.00	Right ventricular failure
509	G5y3.00	Cardiomegaly
562	G5y3411	Left ventricular hypertrophy
98751	G5y3600	Right ventricular dilatation
34437	G5y7.00	Sarcoid myocarditis
49787	G5y8.00	Rheumatoid myocarditis
29180	G5y9.00	Cardiac septal defect, acquired
43816	G5yA.00	Rheumatoid carditis
21854	G5yy700	Left ventricular thrombosis
107397	G5yyD00	Left ventricular cardiac dysfunction
108180	G5yyE00	Right ventricular systolic dysfunction
5051	G61..00	Intracerebral haemorrhage
30202	G617.00	Intracerebral haemorrhage, intraventricular
57315	G618.00	Intracerebral haemorrhage, multiple localized
31060	G61X.00	Intracerebral haemorrhage in hemisphere, unspecified
3535	G61z.00	Intracerebral haemorrhage NOS
57495	G63..11	Infarction - precerebral
569	G64..12	Infarction - cerebral
26424	G64z400	Infarction of basal ganglia
16956	G669.00	Cerebral palsy, not congenital or infantile, acute
98277	G71A.00	Aortic root dilatation
62323	G75..00	Polyarteritis nodosa and allied conditions

Medcode	Read Code	Description
6157	G751000	Kawasaki disease
4810	G754.00	Wegener's granulomatosis
37640	G757.00	Takayasu's disease
18380	G759.00	Juvenile polyarteritis
68136	G75z.00	Polyarteritis nodosa and allied conditions NOS
37980	G764.11	Marable's syndrome
4942	G770.00	Hereditary haemorrhagic telangiectasia
35157	G770.11	Rendu - Osler - Weber disease
20676	G820.00	Budd - Chiari syndrome (hepatic vein thrombosis)
8412	G8y2200	Superior vena cava syndrome
107462	GA...00	Rheumatic heart disease
5798	H312000	Chronic asthmatic bronchitis
111668	H32yz11	Sawyer - Jones syndrome
78	H33..00	Asthma
2290	H330.11	Allergic asthma
1208	H330.12	Childhood asthma
25796	H332.00	Mixed asthma
106805	H335.00	Chronic asthma with fixed airflow obstruction
4442	H33z.00	Asthma unspecified
4892	H33z000	Status asthmaticus NOS
233	H33z011	Severe asthma attack
232	H33z100	Asthma attack
8335	H33z111	Asthma attack NOS
21232	H33zz12	Allergic asthma NEC
30214	H54..00	Pulmonary congestion and hypostasis
61229	H54z.00	Pulmonary congestion and hypostasis NOS
27348	H561.00	Idiopathic pulmonary haemosiderosis
103753	H563.13	Idiopathic pulmonary fibrosis
103472	H563200	Pulmonary fibrosis
28229	H563z00	Idiopathic fibrosing alveolitis NOS
64799	H571.00	Rheumatic pneumonia
3859	H57y200	Pulmonary sarcoidosis
93880	H585000	Pulmonary insufficiency following shock
72221	H585100	Pulmonary insufficiency following surgery
96754	H585200	Pulmonary insufficiency following trauma
109815	H58y600	Interstitial lung disease due to collagen vascular disease
104915	H58y700	Interstitial lung disease due to connective tissue disease
25249	H59..00	Respiratory failure
24814	H591.00	Chronic respiratory failure
23779	H5B..00	Sleep apnoea
51167	H5y0400	Tracheo-oesophageal fistula following tracheostomy
29172	H5y1200	Stenosis of trachea
47533	J000200	Congenital anodontia
27325	J040.12	Macrognathism
15363	J040.15	Micrognathism
73766	J040A00	Macrognathism unspecified
95850	J040B00	Micrognathism unspecified

Medcode	Read Code	Description
23896	J041.12	Retrognathism
26364	J041z00	Retrognathism NOS
26444	J046100	Costen's syndrome
102267	J06y700	Unilateral condylar mandibular hyperplasia
103529	J06y800	Unilateral condylar mandibular hypoplasia
29616	J08z900	Orofacial Crohn's disease
22814	J08zB00	Orofacial granulomatosis
104428	J08zF11	Ulcerative oral mucositis
52270	J094200	Moeller's glossodynia exfoliativa
41905	J100.12	Megaoesophagus
69752	J100000	Megaoesophagus in Chagas' disease
16713	J103.00	Oesophageal stricture and stenosis
41141	J103z00	Oesophageal stricture and stenosis NOS
73431	J106300	Subdiaphragmatic oesophageal diverticulum
63815	J106500	Acquired oesophagocoele
4048	J10y200	Tracheo-oesophageal fistula
38418	J32..11	Omphalocele
100368	J321000	Omphalocele with obstruction
4987	J34..00	Diaphragmatic hernia
24703	J340.00	Diaphragmatic hernia with gangrene
44233	J341.00	Diaphragmatic hernia with obstruction
60697	J342.00	Diaphragmatic hernia - irreducible
62920	J34y.00	Unspecified diaphragmatic hernia
44111	J34y.11	Sandifer's syndrome
11780	J34z.00	Diaphragmatic hernia NOS
1796	J4...12	Inflammatory bowel disease
593	J40..11	Crohn's disease
28476	J400200	Crohn's disease of the terminal ileum
66238	J400300	Crohn's disease of the ileum unspecified
39278	J400400	Crohn's disease of the ileum NOS
9359	J400z00	Crohn's disease of the small bowel NOS
20688	J401z00	Crohn's disease of the large bowel NOS
6538	J401z11	Crohn's colitis
59994	J40z.11	Crohn's disease NOS
1784	J41..12	Ulcerative colitis and/or proctitis
6650	J410.00	Ulcerative proctocolitis
48732	J410000	Ulcerative ileocolitis
704	J410100	Ulcerative colitis
24858	J410200	Ulcerative rectosigmoiditis
8347	J410300	Ulcerative proctitis
33456	J410z00	Ulcerative proctocolitis NOS
30433	J411.00	Ulcerative (chronic) enterocolitis
42822	J412.00	Ulcerative (chronic) ileocolitis
104259	J413.00	Ulcerative pancolitis
36434	J421000	Superior mesenteric artery syndrome
35852	J50z200	Stenosis of intestine NOS
35863	J527.00	Megacolon excluding Hirschsprung's disease

Medcode	Read Code	Description
4816	J527z00	Megacolon NOS
29179	J572.00	Stenosis of rectum and anus
53581	J572z00	Stenosis of rectum and anus NOS
6863	J61..00	Cirrhosis and chronic liver disease
9029	J614100	Chronic active hepatitis
7957	J614111	Autoimmune chronic active hepatitis
53480	J614300	Recurrent hepatitis
47257	J615.11	Portal cirrhosis
96664	J615800	Juvenile portal cirrhosis
55454	J615y00	Portal cirrhosis unspecified
71453	J615z15	Hepatic fibrosis
9494	J616.00	Biliary cirrhosis
5638	J616000	Primary biliary cirrhosis
91591	J616200	Biliary cirrhosis of children
58630	J616z00	Biliary cirrhosis NOS
10234	J61y100	Non-alcoholic fatty liver
40963	J61y300	Portal fibrosis without cirrhosis
25383	J61y400	Hepatic fibrosis
100592	J61y600	Hepatic fibrosis with hepatic sclerosis
5129	J623.00	Portal hypertension
10636	J624.00	Hepatorenal syndrome
18652	J63B.00	Autoimmune hepatitis
29066	J66..00	Other biliary tract disorders
35667	J661800	Secondary sclerosing cholangitis
44791	J661900	Sclerosing cholangitis unspecified
37613	J66yz00	Other bile duct disorder NOS
16005	J66z.00	Bile duct disorder NOS
9355	J69..00	Intestinal malabsorption
1515	J690.00	Coeliac disease
62397	J690000	Congenital coeliac disease
63195	J690100	Acquired coeliac disease
44310	J690z00	Coeliac disease NOS
29513	J69y011	Malabsorption due to intolerance to fat
49191	J69y200	Intestinal malabsorption of protein
49739	J69y300	Intestinal malabsorption of carbohydrate
31392	J69y600	Intestinal malabsorption of fat
31419	J69y700	Malabsorption - iron
11934	J69yz13	Malabsorption syndrome NOS
42715	J69z.00	Intestinal malabsorption NOS
2773	K0...00	Nephritis, nephrosis and nephrotic syndrome
108711	K000111	CGN - Crescentic glomerulonephritis
2999	K01..00	Nephrotic syndrome
9840	K010.00	Nephrotic syndrome with proliferative glomerulonephritis
1803	K011.00	Nephrotic syndrome with membranous glomerulonephritis
99644	K012.00	Nephrotic syndrome+membranoproliferative glomerulonephritis
29634	K013.00	Nephrotic syndrome with minimal change glomerulonephritis
23913	K014.00	Nephrotic syndrome, minor glomerular abnormality

Medcode	Read Code	Description
22852	K015.00	Nephrotic syndrome, focal and segmental glomerular lesions
21947	K017.00	Nephrotic syn difus mesangial prolifertiv glomerulonephritis
50472	K018.00	Nephrotic syn,difus endocapilary proliftv glomerulonephritis
21989	K019.00	Nephrotic syn,diffuse mesangiocapillary glomerulonephritis
56987	K01A.00	Nephrotic syndrome, dense deposit disease
17365	K01B.00	Nephrotic syndrome, diffuse crescentic glomerulonephritis
108816	K01x.00	Nephrotic syndrome in diseases EC
47922	K01x000	Nephrotic syndrome in amyloidosis
2471	K01x100	Nephrotic syndrome in diabetes mellitus
99201	K01x200	Nephrotic syndrome in malaria
58750	K01x300	Nephrotic syndrome in polyarteritis nodosa
47672	K01x400	Nephrotic syndrome in systemic lupus erythematosus
94373	K01y.00	Nephrotic syndrome with other pathological kidney lesions
27427	K01z.00	Nephrotic syndrome NOS
7804	K02..00	Chronic glomerulonephritis
10647	K02..11	Nephritis - chronic
11875	K02..12	Nephropathy - chronic
60960	K02y.00	Other chronic glomerulonephritis
97758	K02y000	Chronic glomerulonephritis + diseases EC
4669	K02y200	Chronic focal glomerulonephritis
63615	K02yz00	Other chronic glomerulonephritis NOS
15097	K02z.00	Chronic glomerulonephritis NOS
33580	K03..00	Nephritis and nephropathy unspecified
4850	K03..11	Nephritis and nephropathy unspecified
11873	K03..12	Nephropathy, unspecified
107814	K032200	Focal glomerulon + focal recurr macroscop glomerulonephritis
24384	K032400	Familial glomerulonephritis in Alport's syndrome
67193	K032y00	Nephritis unsp+OS membranoprolif glomerulonephritis lesion
50305	K032y11	Hypocomplementaemic persistent glomerulonephritis NEC
36342	K032y13	Mesangioproliferative glomerulonephritis NEC
41881	K032y14	Mesangiocapillary glomerulonephritis NEC
94350	K032z00	Nephritis unsp+membranoprolif glomerulonephritis lesion NOS
36125	K03U.00	Unspecif nephr synd, diff concentric glomerulonephritis
62520	K03W.00	Unsp nephrit synd, diff endocap prolif glomerulonephritis
30301	K03X.00	Unsp nephrit synd, diff mesang prolif glomerulonephritis
5182	K03z.00	Unspecified glomerulonephritis NOS
104981	K05..13	Chronic kidney disease
105392	K051.00	Chronic kidney disease stage 1
105383	K052.00	Chronic kidney disease stage 2
350	K06..00	Renal failure unspecified
26220	K07..00	Renal sclerosis unspecified
22876	K071.00	Renal fibrosis
4480	K07z.00	Renal sclerosis NOS
29638	K080.00	Renal osteodystrophy
34648	K080100	Renal dwarfism
66062	K080300	Renal rickets
34637	K080z00	Renal osteodystrophy NOS

Medcode	Read Code	Description
30310	K081.00	Nephrogenic diabetes insipidus
110481	K081000	Acquired nephrogenic diabetes insipidus
41013	K08y300	Renal function impairment with growth failure
5072	K08y400	Renal tubular acidosis
110983	K08y412	Renal tubular acidaemia
111300	K08yB00	Hyperkalaemic renal tubular acidosis
111509	K08yB11	Type IV renal tubular acidosis
48475	K08yz11	Renal acidaemia
43919	K090.00	Unilateral small kidney
105369	K090100	Unilateral small kidney with contralateral hypertrophy
38774	K091.00	Bilateral small kidneys
68364	K0A2100	Recur+persist haematuria, focal+segmental glomerular lesions
61317	K0A2200	Recur+persist haematuria difus membranous glomerulonephritis
49642	K0A2300	Recur+persist haemuria df mesangial prolif glomerulnephritis
60484	K0A2500	Recur+persist hmuria df mesangiocapilary glomerulonephritis
60856	K0A2700	Recur+persist haematuria difus crescentic glomerulonephritis
21297	K0A3.00	Chronic nephritic syndrome
66505	K0A3000	Chronic nephritic syndrome, minor glomerular abnormality
40413	K0A3100	Chronic nephritic syndrm focal+segmental glomerular lesions
73026	K0A3500	Chronic neph syn difus mesangiocapillary glomerulonephritis
60198	K0A3600	Chronic nephritic syndrome, dense deposit disease
60857	K0A3700	Chronic nephritic syn diffuse crescentic glomerulonephritis
36205	K0A5.00	Hereditary nephropathy not elsewhere classified
51113	K0A5000	Hereditary nephropathy NEC, minor glomerular abnormality
41239	K0A5100	Hereditary nephropathy NEC,focal+segmnt glomerular lesion
44270	K0A5200	Hereditry nephropathy NEC,difus membran glomerulnephritis
91738	K0A5600	Hereditary nephropathy, NEC, dense deposit disease
62980	K0A5X00	Hereditary nephropathy, unspecif morphological changes
45523	K0B..00	Renal tubulo-interstitial disorders in diseases EC
64622	K0B1.00	Renal tubulo-interstitial disorder/ neoplastic diseases
45904	K0B2.00	Ren tub-interst disordr/blood dis+disordr inv immune mech
67261	K0B4.00	Ren tub-interstitl disordr/systemc connectv tiss disorder
41148	K0B4000	Renal tubulo-interstitial disorder in SLE
48057	K0B5.00	Renal tubulo-interstitial disordrs in transplant rejectn
41159	K0C1.00	Nephropathy induced by other drugs meds and biologl substncs
57784	K0C2.00	Nephropathy induced by unspec drug medicament or biol subs
50893	K0C4.00	Toxic nephropathy, not elsewhere classified
107027	K0G..00	Sickle cell nephropathy
107765	K0J..00	Renal disorders in systemic disease
53944	K10y.00	Pyelonephritis and pyonephrosis unspecified
95710	K10y300	Pyelonephritis in diseases EC
3277	K11..00	Hydronephrosis
17778	K111.00	Hydroureteronephrosis
27592	K112.00	Hydronephrosis with renal and ureteral calculous obstruction
10410	K113.00	Hydronephrosis with ureteropelvic junction obstruction
8522	K113.11	Hydronephrosis with pelviureteric junction obstruction
28159	K11X.00	Hydronephrosis with ureteral stricture NEC

Medcode	Read Code	Description
27302	K11z.00	Hydronephrosis NOS
104079	K132.11	Acquired renal cystic disease
31841	K135.00	Hydroureter
40049	K13y700	Megaloureter - acquired
31097	K16X.00	Uninhibited neuropathic bladder, NEC
3354	K274.00	Peyronie's disease
73156	K562.12	Atresia of vagina
27648	K562300	Atresia of vagina
38312	L162.12	Nephropathy NOS in pregnancy without hypertension
61935	L185.11	Congenital heart disease in pregnancy
107689	M12A400	Juvenile spring eruption
50627	M142.00	Juvenile dermatitis herpetiformis
17810	M142.11	Juvenile pemphigoid
53763	M144z00	Pemphigus NOS
31667	M145300	Acquired epidermolysis bullosa
58116	M145z00	Pemphigoid NOS
4125	M154.00	Lupus erythematosus
33449	M154000	Lupus erythematosus chronicus
2667	M154100	Discoid lupus erythematosus
40797	M154200	Lupus erythematosus migrans
65391	M154300	Lupus erythematosus nodularis
46148	M154400	Lupus erythematosus profundus
44984	M154500	Lupus erythematosus tumidus
63955	M154600	Lupus erythematosus unguium mutilans
7522	M154z00	Lupus erythematosus NOS
36466	M15y200	Pityriasis rubra (Hebra)
476	M160.00	Psoriatic arthropathy
96880	M160.11	Psoriatic arthritis
26368	M160000	Psoriasis spondylitica
12500	M160z00	Psoriatic arthropathy NOS
162	M161000	Psoriasis unspecified
30272	M161200	Psoriasis circinata
42008	M161300	Psoriasis diffusa
21633	M161500	Psoriasis geographica
65839	M161700	Psoriasis gyrata
48257	M161800	Psoriasis inveterata
60169	M161900	Psoriasis ostracea
24136	M161C00	Psoriasis punctata
30210	M161F00	Psoriasis vulgaris
172	M161z00	Psoriasis NOS
107491	M162111	Pityriasis lichenoides et varioliformis acuta
107401	M162311	Pityriasis lichenoides chronica
36838	M163.11	Pityriasis circinata
48641	M165200	Pityriasis streptogenes
37538	M210500	Sclerodactyly
23639	M211600	Acquired ichthyosis
108683	M21yD00	Hemifacial atrophy

Medcode	Read Code	Description
1037	M240.00	Alopecia
976	M240000	Alopecia unspecified
685	M240100	Alopecia areata
52294	M240600	Alopecia senilis
50780	M240700	Alopecia febrilis
43109	M240900	Alopecia disseminata
48735	M240C00	Alopecia follicularis
48719	M240H00	Alopecia seborrhoeica
40947	M240J00	Alopecia hereditaria
36298	M250.11	Hypohidrosis
975	M295100	Vitiligo
7859	M2y4800	Juvenile plantar dermatosis
72688	Myu1.00	[X]Bullous disorders
7871	N000.00	Systemic lupus erythematosus
29519	N000300	Systemic lupus erythematosus with organ or sys involv
99435	N000500	Neonatal lupus erythematosus
42719	N000z00	Systemic lupus erythematosus NOS
3670	N001.00	Scleroderma
28417	N001.12	Systemic sclerosis
44141	N001000	Progressive systemic sclerosis
110174	N001200	Systemic sclerosis induced by drugs and chemicals
2360	N002.00	Sicca (Sjogren's) syndrome
32649	N003000	Juvenile dermatomyositis
15511	N004.00	Polymyositis
58818	N012011	Behcet's syndrome arthropathy
27603	N04..00	Rheumatoid arthritis and other inflammatory polyarthropathy
844	N040.00	Rheumatoid arthritis
44743	N040000	Rheumatoid arthritis of cervical spine
107963	N040300	Rheumatoid arthritis of sternoclavicular joint
100914	N040400	Rheumatoid arthritis of acromioclavicular joint
59738	N040500	Rheumatoid arthritis of elbow
63365	N040600	Rheumatoid arthritis of distal radio-ulnar joint
48832	N040700	Rheumatoid arthritis of wrist
42299	N040800	Rheumatoid arthritis of MCP joint
41941	N040900	Rheumatoid arthritis of PIP joint of finger
63198	N040A00	Rheumatoid arthritis of DIP joint of finger
49067	N040B00	Rheumatoid arthritis of hip
100776	N040C00	Rheumatoid arthritis of sacro-iliac joint
50863	N040D00	Rheumatoid arthritis of knee
107791	N040E00	Rheumatoid arthritis of tibio-fibular joint
51239	N040F00	Rheumatoid arthritis of ankle
73619	N040G00	Rheumatoid arthritis of subtalar joint
70658	N040H00	Rheumatoid arthritis of talonavicular joint
71784	N040J00	Rheumatoid arthritis of other tarsal joint
51238	N040K00	Rheumatoid arthritis of 1st MTP joint
99414	N040L00	Rheumatoid arthritis of lesser MTP joint
107112	N040M00	Rheumatoid arthritis of IP joint of toe

Medcode	Read Code	Description
30548	N040N00	Rheumatoid vasculitis
31054	N040S00	Rheumatoid arthritis - multiple joint
46436	N042100	Rheumatoid lung disease
37431	N042z00	Rheumatoid arthropathy + visceral/systemic involvement NOS
4186	N043.00	Juvenile rheumatoid arthritis - Still's disease
50644	N043000	Juvenile rheumatoid arthropathy unspecified
36276	N043300	Monarticular juvenile rheumatoid arthritis
27557	N043z00	Juvenile rheumatoid arthritis NOS
7196	N045.00	Other juvenile arthritis
42405	N045000	Juvenile ankylosing spondylitis
31181	N045100	Juvenile seronegative polyarthritis
28456	N045200	Juvenile arthritis in psoriasis
12575	N045300	Juvenile arthritis in Crohn's disease
71083	N045400	Juvenile arthritis in ulcerative colitis
31360	N045500	Juvenile rheumatoid arthritis
31724	N04y000	Rheumatoid lung
7454	N065.11	Polyarthropathy NEC
1670	N065z11	Polyarthritis
64871	N082N00	Neuromuscular dislocation of the hip
97623	N093.11	Hench - Rosenberg syndrome
2184	N100.00	Ankylosing spondylitis
44026	N10y.00	Other inflammatory spondylopathies
37892	N10yz00	Other inflammatory spondylopathies NOS
23390	N121.00	Thoracic disc displacement without myelopathy
51550	N129200	Thoracic disc disorder with myelopathy
51691	N12B100	Thoracic disc prolapse with myelopathy
40333	N12C100	Thoracic disc prolapse with radiculopathy
62875	N135100	Rheumatic torticollis
59014	N13y100	Klippel's disease
1408	N20..00	Polymyalgia rheumatica
40319	N216211	Pellegrini - Stieda syndrome
21970	N21z312	Osteophyte of unspecified site
93927	N231400	Polymyositis ossificans
31439	N232000	Amyotrophia NOS
65405	N237300	Pseudosarcomatous fibromatosis
33474	N240.00	Rheumatism and fibrositis unspecified
35937	N240z00	Rheumatism or fibrositis NOS
96966	N248000	Myofascial pain syndrome
37298	N3...00	Osteopathy/chondropathy/acquired musculoskeletal deformity
54213	N307.00	Osteopathy from poliomyelitis
3528	N310.11	Paget's disease of bone
50862	N310000	Paget's disease-cervical spine
71514	N310100	Paget's disease-thoracic spine
56021	N310200	Paget's disease-lumbar spine
56578	N310300	Paget's disease-sacrum
68199	N310500	Paget's disease-clavicle
70397	N310600	Paget's disease-scapula

Medcode	Read Code	Description
63779	N310700	Paget's disease-humerus
65387	N310800	Paget's disease-radius
73964	N310900	Paget's disease-ulna
95037	N310A00	Paget's disease-carpal bone
27501	N310D00	Paget's disease-pelvis
57905	N310E00	Paget's disease-femur
56897	N310F00	Paget's disease-patella
35769	N310G00	Paget's disease-tibia
72456	N310H00	Paget's disease-fibula
51146	N310P00	Paget's disease-skull
66795	N310x00	Paget's disease-multiple sites
56078	N310y00	Paget's disease OS
37902	N310z00	Paget's disease NOS
36725	N320.00	Juvenile osteochondritis of the spine
50510	N320000	Juvenile osteochondritis of the spine, unspecified
1721	N320100	Scheuermann's disease
69739	N320z00	Juvenile osteochondritis of the spine NOS
34369	N321.00	Juvenile osteochondritis of the hip and pelvis
66495	N321000	Juvenile osteochondritis of the hip and pelvis, unspecified
21502	N321400	Juvenile osteochondritis of the iliac crest
94462	N321500	Juvenile osteochondritis of the symphysis pubis
95730	N321511	Pierson's disease
68673	N321z00	Juvenile osteochondritis of the hip and pelvis NOS
62237	N323.00	Juvenile osteochondritis of the arm and hand
63370	N323.11	Juvenile osteochondritis of the arm
101671	N323000	Juvenile osteochondritis of the arm, unspecified
39819	N323100	Juvenile osteochondritis of the hand, unspecified
73645	N323z00	Juvenile osteochondritis of the arm and hand NOS
33667	N324.00	Juvenile osteochondrosis of the leg
24028	N324000	Juvenile osteochondrosis of the leg, unspecified
35026	N324111	Juvenile osteochondrosis of the primary patellar centre
48242	N324300	Juvenile osteochondrosis of the secondary patellar centre
38898	N324z00	Juvenile osteochondrosis of the leg, NOS
48042	N325.00	Juvenile osteochondrosis of the foot
63567	N325000	Juvenile osteochondrosis of the foot, unspecified
60589	N325z00	Juvenile osteochondrosis of the foot NOS
50425	N326.00	Other juvenile osteochondroses
6975	N326200	Juvenile osteochondritis NOS
9691	N326300	Juvenile osteochondrosis NOS
94547	N326z00	Juvenile osteochondroses NOS
3156	N327.00	Osteochondritis dissecans
54563	N327000	Osteochondritis dissecans of patella
38335	N327100	Osteochondritis dissecans of lateral femoral condyle
103515	N327300	Osteochondritis dissecans of the humeral head
70914	N327400	Osteochondritis dissecans of the capitellum
97447	N327500	Osteochondritis dissecans of the radial head
97466	N327700	Osteochondritis dissecans of the wrist

Medcode	Read Code	Description
34206	N327800	Osteochondritis dissecans of the femoral head
38518	N327900	Osteochondritis dissecans of the talus
42068	N327y00	Osteochondritis dissecans of other site
52681	N328.00	Juvenile osteochondrosis of spine
17135	N32z300	Osteochondrosis NOS
22861	N32zz00	Osteochondropathy NOS
277	N330.00	Osteoporosis
40428	N330300	Idiopathic osteoporosis
60433	N330900	Osteoporosis in multiple myelomatosis
31580	N330A00	Osteoporosis in endocrine disorders
25650	N330D00	Osteoporosis due to corticosteroids
34798	N330z00	Osteoporosis NOS
33526	N331300	Osteoporosis of disuse with pathological fracture
27597	N331600	Idiopathic osteoporosis with pathological fracture
42657	N334900	Osteonecrosis due to drugs
45737	N334A00	Osteonecrosis due to previous trauma
58843	N334B00	Osteonecrosis in caisson disease
69157	N334C00	Osteonecrosis due to haemoglobinopathy
4098	N337100	Sudek's atrophy
29734	N33z.11	Osteolytic lesion
26864	N33zD00	Osteolysis
22417	N33zH00	Osteolytic lesion
53972	N373900	Scoliosis secondary to other treatment
40041	N374300	Scoliosis associated with other condition
64218	N374A00	Scoliosis in skeletal dysplasia
67445	N374C00	Scoliosis in neurofibromatosis
43192	N374D00	Scoliosis in connective tissue anomalies
110165	P002.00	Hemicephaly
62968	P101000	Chiari malformation type I
72928	P103400	Sacral spina bifida with hydrocephalus - closed
95018	P110z00	Unspecified spina bifida without hydrocephalus NOS
71525	P117400	Sacral spina bifida without hydrocephalus - open
69370	P118000	Unspecified spina bifida without hydrocephalus - closed
70923	P118400	Sacral spina bifida without hydrocephalus - closed
43593	P11y.11	Syringomyelocele
101703	P11z.14	Congenital hernia of dura mater
53474	P20..13	Congenital cerebral hernia
72048	P20..14	Congenital endaural hernia
31717	P20..15	Sinus pericranii
67264	P205.00	Frontal encephalocele
23457	P220.00	Agenesis of brain, part unspecified
100305	P221.00	Aplasia of brain, part unspecified
63668	P222.00	Hypoplasia of brain, part unspecified
53723	P223.00	Agyria
95892	P226000	Congenital bilateral perisylvian syndrome
39724	P227.00	Anomalies of cerebrum
40777	P227000	Agenesis of cerebrum

Medcode	Read Code	Description
103611	P227100	Congenital hypoplasia of cerebrum
111258	P227z00	Anomaly of cerebrum NOS
32468	P228.00	Anomalies of corpus callosum
41775	P228000	Congenital absence of corpus callosum
39486	P228011	Agenesis of corpus callosum
37600	P228100	Hypoplasia of corpus callosum
103057	P228200	Aplasia of corpus callosum
60648	P228z00	Anomaly of corpus callosum NOS
46471	P229.00	Anomalies of hypothalamus
28318	P22A.00	Anomalies of cerebellum
25316	P22A000	Congenital absence of cerebellum
54877	P22A011	Agenesis of cerebellum
44717	P22A100	Hypoplasia of cerebellum
91846	P22A200	Aplasia of cerebellum
44253	P22Az00	Anomaly of cerebellum NOS
58710	P22z.12	Agenesis of part of brain NEC
60216	P22z.13	Hypoplasia of part of brain NEC
9611	P23..00	Congenital hydrocephalus
40588	P230.11	Hydrocephauls with anomaly of aqueduct of Sylvius
46120	P230.12	Stenosis of aqueduct of Sylvius
51345	P233.00	Atresia of foramina of Magendie and Luschka
97663	P233.12	Hydrocephalus with atresia of foramina of Magendie+Luschka
107207	P235.00	X-linked hydrocephalus
28353	P23z.00	Congenital hydrocephalus NOS
39391	P240.00	Congenital cerebral cyst
95632	P240.11	Congenital intracerebral cyst
107846	P240000	Single congenital cerebral cyst
109441	P240100	Multiple congenital cerebral cysts
71733	P240z00	Congenital cerebral cyst NOS
37474	P241.00	Macroencephaly
33442	P241.11	Megalencephaly
72094	P242.00	Macrogyria
64134	P248.00	Congenital dilated lateral ventricles of brain
50169	P249.00	Megalencephaly
95697	P24A.00	Hemimegalencephaly
48940	P252.00	Congenital tethering of spinal cord
45918	P25y200	Congenital anomaly of spinal meninges
67476	P2x0.00	Agenesis of nerve, unspecified
3884	P2x4.00	Marcus - Gunn syndrome
31616	P2x5.00	Riley - Day syndrome
43808	P2x6.00	Chiari malformation type I
93911	P2xz000	Agenesis of nerve NEC
39392	P2xz100	Congenital optic atrophy
73574	P2y..00	Unspec nervous system anomaly of brain/cord/nervous system
8893	P2y0.00	Congenital brain anomaly
36974	P2y1.00	Congenital spinal cord anomaly
23605	P30..00	Anophthalmos

Medcode	Read Code	Description
68208	P300200	Congenital absence of eye
70742	P300z00	Anophthalmos NOS
51185	P301.00	Congenital cystic eyeball
67756	P303.00	Congenital absence of eyes
37557	P30z.00	Anophthalmos NOS
26462	P31..00	Microphthalmos
72284	P310.00	Microphthalmos, unspecified
48507	P312.00	Microphthalmos with other eye anomaly
63439	P31z.00	Microphthalmos NOS
23407	P320000	Congenital glaucoma
49829	P322000	Congenital keratoglobus
38026	P322100	Congenital megalocornea
94176	P322112	Congenital macrocornea
35351	P33..11	Congenital lens anomaly
299	P330.00	Congenital cataract, unspecified
39081	P334000	Total congenital cataract
69823	P335.00	Congenital aphakia
62531	P335.11	Congenital absence of lens
52652	P336000	Microphakia
29474	P337.00	Congenital ectopic lens
99424	P33y100	Congenital membranous cataract
45926	P33z.00	Congenital cataract or lens anomaly NOS
23783	P340100	Congenital keratoconus
71732	P341000	Congenital corneal opacity with visual deficit
66259	P341z00	Congenital corneal opacities NOS
51768	P342200	Rieger's anomaly
44851	P344000	Congenital anisocoria
73673	P344100	Atresia of pupil
59944	P344600	Aplasia of iris
34924	P352.00	Congenital chorioretinal degeneration
60812	P353100	Congenital cysts of the posterior segment
62976	P355.00	Other congenital retinal changes
50584	P355100	Congenital retinal fold
101194	P355200	Congenital hypertrophy of retinal pigment epithelium
25692	P355z00	Other congenital retinal changes NOS
26024	P356000	Congenital optic disc coloboma
49791	P357000	Congenital retinal aneurysm
62587	P357100	Congenital arteriovenous malformation of retina
94285	P35z.00	Congenital anomalies of posterior chamber NOS
94280	P36..00	Congenital anomalies of eyelid, lacrimal system and orbit
31998	P361300	Congenital ectropion
67169	P361z00	Congenital eyelid deformity NOS
67919	P362000	Agenesis of cilia
30468	P364.00	Congenital lacrimal passage anomalies
97779	P364111	Congenital absence of punctum lacrimale
50282	P365.00	Congenital orbit anomalies
58909	P37..00	Macrophthalmos

Medcode	Read Code	Description
25819	P402000	Atresia of external auditory canal
102497	P402111	Congenital stricture of external auditory canal
95103	P402112	Congenital stricture of osseous meatus
31374	P40z.11	Deafness due to congenital anomaly NEC
93879	P41..11	Polyotia
42721	P421.11	Congenital big ears
101739	P423100	Congenital stenosis of eustachian tube
48936	P42z300	Congenital prominent auricle
35616	P45..00	Congenital webbing of neck
99458	P45z.00	Congenital webbing of neck NOS
35942	P4y4.00	Congenital absence of chin
70982	P4z..00	Congenital face or neck anomaly NOS
93198	P4z0.00	Congenital anomaly of neck NOS
37784	P4z1.00	Congenital anomaly of face NOS
21943	P5...11	Cardiac septal defects
23754	P5...12	Congenital heart disease, septal and bulbar anomalies
37405	P50..11	Aortic septal defect
98893	P50..12	Common truncus
45187	P500.12	Truncus arteriosus
45505	P501.00	Aortic septal defect
65330	P501.12	Aorticopulmonary septal defect
41371	P502.11	Truncus arteriosus
1778	P511.00	Double outlet right ventricle
40025	P511300	Taussig-Bing syndrome
65318	P511z00	Double outlet right ventricle NOS
4864	P52..00	Tetralogy of Fallot
38967	P520.00	Tetralogy of Fallot, unspecified
23692	P520.11	Ventricular septal defect in Fallot's tetralogy
63046	P52z.00	Tetralogy of Fallot NOS
246	P54..00	Ventricular septal defect
42132	P540.00	Ventricular septal defect, unspecified
67657	P542.00	Left ventricle to right atrial communication
34067	P54z.00	Ventricular septal defect NOS
3255	P550.00	Atrial septal defect NOS
54243	P55z.00	Ostium secundum atrial septal defect NOS
51053	P561.00	Ostium primum defect
55535	P56z000	Common atrium
43049	P56z100	Common atrioventricular canal
44896	P56z200	Common atrioventricular-type ventricular septal defect
46117	P58..00	Double outlet left ventricle
48205	P5X..00	Congenital malforms of cardiac chambers+connections unsp
5621	P6...00	Other congenital heart anomalies
39992	P60..00	Pulmonary valve anomalies
69940	P600.00	Pulmonary valve anomaly, unspecified
54488	P601000	Hypoplasia of pulmonary valve
22778	P602.00	Congenital pulmonary stenosis
45452	P602100	Congenital fusion of pulmonary valve segment

Medcode	Read Code	Description
33919	P602z00	Congenital pulmonary stenosis NOS
21851	P603.00	Right hypoplastic heart syndrome
68982	P603.11	Pseudotruncus arteriosus
107150	P60z000	Congenital insufficiency of the pulmonary valve
12752	P61..00	Congenital tricuspid atresia and stenosis
69169	P611.00	Congenital tricuspid stenosis
100065	P61z.00	Congenital tricuspid atresia or stenosis NOS
6886	P63..00	Congenital aortic valve stenosis
8636	P64..00	Congenital aortic valve insufficiency
58734	P640.00	Congenital aortic valve insufficiency, unspecified
3300	P641.00	Bicuspid aortic valve
6843	P64z.00	Congenital aortic valve insufficiency NOS
57091	P65..00	Congenital mitral stenosis
100291	P65z.00	Congenital mitral stenosis NOS
61651	P66..00	Congenital mitral insufficiency
108457	P69..00	Left ventricular outflow tract obstruction
46825	P6W..00	Congenital malformation of aortic and mitral valves unsp
50529	P6X..00	Congenital malformation of tricuspid valve, unspecified
16539	P6y0.00	Subaortic stenosis
9401	P6y2.00	Pulmonary infundibular stenosis
99128	P6y3.00	Obstructive heart anomaly NEC
104266	P6y3100	Right ventricular outflow tract obstruction
97818	P6y3z00	Obstructive heart anomaly NEC NOS
71956	P6y4000	Congenital absence of coronary artery
62163	P6y4100	Single coronary artery
31373	P6y4400	Anomalous coronary artery communication
28705	P6y4411	Congenital coronary arterio-venous fistula
49901	P6y4500	Congenital coronary aneurysm
103412	P6y4600	Congenital stricture of coronary artery
24533	P6y5.00	Congenital heart block
68097	P6y5000	Congenital heart block, unspecified
52310	P6y5100	Congenital complete atrio-ventricular heart block
102167	P6y5200	Congenital incomplete atrio-ventricular heart block
70992	P6y5z00	Congenital heart block NOS
98061	P6y8.00	Congenital dextroposition of heart
44767	P6yy.11	Hypoplastic aortic orifice or valve
93089	P6yy000	Atresia of cardiac vein
68063	P6yy100	Hypoplasia of cardiac vein
34007	P6yy200	Congenital cardiomegaly
49133	P6yy300	Congenital left ventricular diverticulum
50362	P6yy400	Congenital pericardial defect
101896	P6yy411	Congenital absence of pericardium
68894	P6yy500	Congenital anomaly of myocardium
108193	P6yy600	Congenital aneurysm of heart
37451	P6yy700	Atresia of heart valve NEC
23752	P6yy900	Congenital epicardial cyst
95785	P6yyA00	Hemicardia

Medcode	Read Code	Description
247	P6z..00	Congenital heart anomaly NOS
26626	P6z0.00	Unspecified anomaly of heart valve
109236	P6z1.00	Anomalous bands of heart
103432	P6z1000	Anomalous atrial bands
64778	P6z1100	Anomalous ventricular bands
38968	P6z2.00	Acyanotic congenital heart disease NOS
11982	P6zz.00	Congenital heart anomaly NOS
9778	P7...00	Other congenital circulatory system anomalies
57932	P710.00	Hypoplasia of aortic arch, unspecified
72295	P711.00	Preductal coarctation of aorta
106756	P711.13	Preductal aortic stenosis
16731	P713.11	Stenosis of aortic arch
50220	P72..00	Other anomalies of aorta
40030	P72..11	Anomalies of the aorta excluding coarction
62230	P720.00	Anomaly of aorta, unspecified
67286	P721000	Anomalous origin of the aortic arch
68198	P722.00	Atresia and stenosis of aorta
59298	P722100	Aplasia of aorta
37515	P722200	Hypoplasia of aorta
53964	P722400	Supra-valvular aortic stenosis
58189	P722411	Congenital stenosis of ascending aorta
58076	P722z00	Atresia or stenosis of aorta NOS
44781	P72z.00	Other anomalies of aorta NOS
56200	P72z100	Congenital aneurysm of aorta
11293	P72z111	Congenital dilatation of aorta
11945	P72zz00	Other anomaly of aorta NOS
63187	P730.00	Pulmonary artery anomaly, unspecified
67928	P731.00	Pulmonary artery agenesis
103672	P731.11	Congenital absence of pulmonary artery
54487	P734.00	Hypoplasia of the pulmonary artery
2670	P735.00	Stenosis of pulmonary artery
111389	P735.11	Congenital stricture of pulmonary artery
96225	P736.00	Pulmonary arterio-venous aneurysm
47853	P736.11	Pulmonary arterio-venous fistula
65029	P737.00	Pulmonary artery aneurysm
42127	P73z.00	Pulmonary artery anomaly NOS
42684	P74..00	Anomalies of great veins
45291	P740.00	Anomaly of great veins, unspecified
74890	P740000	Anomaly of the pulmonary veins, unspecified
50886	P740100	Anomaly of the vena cava, unspecified
51941	P741.00	Total anomalous pulmonary venous return - TAPVR
105037	P741000	Subdiaphragmatic total anomalous pulmonary venous return
103039	P741100	Supradiaphragmatic total anomalous pulmonary venous return
68784	P741z00	Total anomalous pulmonary venous return NOS
63677	P742.11	Anomalous termination of right pulmonary vein
101307	P743.00	Anomalous portal vein termination
73663	P74z.00	Other great vein anomalies

Medcode	Read Code	Description
72655	P74z100	Absence of superior vena cava
51675	P74z200	Stenosis of inferior vena cava
41197	P74z300	Stenosis of superior vena cava
36606	P74z600	Scimitar syndrome
71874	P74z700	Transposition of pulmonary veins
73554	P74zz00	Other great vein anomaly NOS
65384	P76..11	Other congenital anomalies of peripheral arteries
22070	P76..12	Other congenital anomalies of peripheral veins
42389	P761.00	Anomaly of artery NEC
68310	P762.00	Atresia of artery NEC
61062	P767.00	Congenital peripheral aneurysm
58591	P769.00	Congenital arterial stricture
35208	P76A.00	Congenital varix
50786	P76C.00	Anomalies of renal artery NEC
97401	P76Cz00	Anomaly of renal artery NEC NOS
108675	P76y.00	Congenital anomaly of peripheral vascular system OS
73738	P76yz00	Other congenital anomaly of peripheral vascular system NOS
29738	P7W..00	Congenital malformation of circulatory system, unspecif
45910	P7X..00	Congenital malformation of great arteries, unspecified
55893	P7y0000	Congenital anomaly of cerebral vessel, unspecified
24424	P7y0100	Congenital cerebral arteriovenous aneurysm
95800	P7y0111	Congenital arteriovenous fistula of brain
44581	P7y0112	Congenital cerebral arteriovenous malformation
36666	P7y0200	Congenital brain aneurysm NEC
101592	P7yz.00	Other cardiovascular system anomaly NOS
63173	P7yz000	Congenital aneurysm NEC
56810	P7yz100	Congenital chylothorax
65499	P7yzz00	Other cardiovascular system anomaly NOS
46398	P8...00	Respiratory system congenital anomalies
31027	P80..00	Choanal atresia
66643	P800.00	Choanal atresia, unspecified
68606	P802.00	Atresia of the posterior nares
107172	P803.00	Congenital stenosis of the anterior nares
96389	P804.00	Congenital stenosis of the posterior nares
60514	P80z.00	Choanal atresia NOS
66698	P813.00	Congenital cleft nose
73595	P816.00	Congenital perforation of the nasal sinus wall
31771	P82..00	Congenital web of larynx
111186	P820.00	Congenital web of larynx, unspecified
42855	P821.00	Congenital glottic web of larynx
97956	P822.00	Congenital subglottic web of larynx
70985	P82z.00	Congenital web of larynx NOS
29373	P83..00	Other anomalies of larynx, trachea and bronchus
63530	P831.00	Anomaly of laryngeal and tracheal cartilage
47467	P831200	Anomaly of thyroid cartilage
31020	P831300	Anomaly of tracheal cartilage
104555	P831700	Congenital laryngomalacia

Medcode	Read Code	Description
55062	P831z00	Anomaly of laryngeal or tracheal cartilage NOS
72001	P832.00	Atresia of larynx and trachea
61727	P832000	Atresia of epiglottis
92834	P832100	Atresia of glottis
63288	P832300	Atresia of trachea
59273	P833.00	Congenital stenosis of larynx, trachea and bronchus
61450	P833000	Congenital stenosis of larynx
48818	P833100	Congenital stenosis of trachea
71893	P833200	Congenital stenosis of bronchus
49142	P833300	Congenital subglottic stenosis
55144	P833400	Congenital supraglottic stenosis
63637	P83y.00	Other anomaly of larynx, trachea and bronchus
37835	P83y100	Congenital dilatation of trachea
45351	P83y300	Congenital laryngocele
99683	P83y500	Congenital diverticulum of trachea
105605	P83y700	Congenital cleft of posterior cricoid cartilage
11845	P83yB00	Congenital bronchomalacia
63507	P83yw00	Other anomaly of larynx
36474	P83yX00	Congenital malformation of larynx, unspecified
70193	P83yx00	Other anomaly of trachea
104976	P83yy00	Other anomaly of bronchus
103042	P83yz00	Other anomaly of larynx, trachea or bronchus NOS
36779	P83z.00	Other anomalies of larynx, trachea or bronchus NOS
66223	P840.00	Congenital cystic lung disease, unspecified
31820	P841.00	Congenital polycystic lung
50980	P841.12	Multiple congenital bronchogenic cysts
66951	P842.00	Congenital honeycomb lung
32600	P843.12	Congenital bronchogenic cyst
96586	P844.00	Congenital cystic adenomatoid malformation of the lung
33804	P84z.00	Congenital cystic lung NOS
52664	P850.00	Aplasia of lung
23874	P851.00	Hypoplasia of lung
59444	P853.00	Agenesis of lung
54384	P853.11	Congenital absence of lung
68268	P853000	Congenital absence of lung fissures
97185	P853100	Congenital absence of lobe of lung
63453	P860.00	Anomaly of lung, unspecified
56427	P861.00	Congenital bronchiectasis
52894	P8y2.00	Atresia of nasopharynx
44347	P8y4.00	Congenital pulmonary lymphangiectasis
46397	P8z..00	Respiratory system anomaly NOS
58885	P900.00	Cleft palate, unspecified
73531	P901.00	Unilateral complete cleft palate
38873	P901.11	Cleft hard palate, unilateral
73558	P902.00	Unilateral incomplete cleft palate
57490	P902.12	Cleft soft palate, unilateral
48948	P903.00	Bilateral complete cleft palate

Medcode	Read Code	Description
106078	P904.00	Bilateral incomplete cleft palate
97477	P904.11	Cleft soft palate, bilateral
68166	P906.11	Cleft soft palate, central
65623	P907.11	Cleft hard palate NOS
25740	P908.11	Cleft soft palate NOS
42208	P90A.00	Cleft soft palate, bilateral
64549	P90B.00	Cleft hard palate, bilateral
101223	P90C.00	Cleft hard palate, unilateral
15364	P90z.00	Cleft palate NOS
2027	P91..00	Cleft lip (harelip)
63930	P911.00	Unilateral complete cleft lip
54012	P912.00	Unilateral incomplete cleft lip
54721	P913.00	Bilateral complete cleft lip
35374	P91z.00	Cleft lip NOS
51301	P920.00	Cleft palate with cleft lip, unspecified
62987	P921.00	Unilateral complete cleft palate with cleft lip
54144	P922.00	Unilateral incomplete cleft palate with cleft lip
44977	P923.00	Bilateral complete cleft palate with cleft lip
62690	P924.00	Bilateral incomplete cleft palate with cleft lip
93972	P928.00	Cleft hard palate with cleft soft palate, unilateral
33902	P92A.00	Cleft hard palate with cleft lip, bilateral
62321	P92B.00	Cleft hard palate with cleft lip, unilateral
68398	P92z.00	Cleft palate with cleft lip NOS
50430	P9z..00	Cleft palate or cleft lip NOS
72991	PA...00	Other congenital upper alimentary tract anomalies
37358	PA10.00	Anomaly of tongue, unspecified
30176	PA14.00	Macroglossia
103145	PA15.00	Microglossia
34305	PA22.00	Atresia, salivary duct
49382	PA23.00	Congenital salivary gland fistula
37517	PA25y00	Other congenital anomaly of palate
56901	PA27000	Imperforate pharynx
49742	PA27100	Congenital pharyngeal polyp
109860	PA2A000	Congenital ectropion of lip
37408	PA3..00	Oesophageal atresia, stenosis and fistula
46814	PA3..11	Congenital oesophageal ring
49707	PA31.11	Congenital oesophageal stenosis
31730	PA32.00	Congenital oesophageal fistula
37868	PA32100	Oesophagotracheal fistula
35042	PA32111	Congenital tracheo-oesophageal fistula
95311	PA32z00	Congenital oesophageal fistula NOS
98741	PA33.00	Imperforate oesophagus
98859	PA35.00	Congenital absence of oesophagus
33655	PA37.00	Atresia of oesophagus with tracheo-oesophageal fistula
22560	PA40.00	Congenital dilatation of oesophagus
55900	PA43.00	Congenital duplication of oesophagus
43558	PA45.00	Congenital oesophageal pouch

Medcode	Read Code	Description
43215	PA6..00	Congenital hiatus hernia
72271	PA70.00	Congenital cardiospasm
23416	PA70.11	Congenital achalasia of cardia
47776	PA71.00	Congenital hourglass stomach
65337	PA73.00	Congenital stomach diverticulum
71255	PA75.00	Megalogastria
66199	PA77.00	Transposition of stomach
25280	PAz2.00	Unspecified anomalies of stomach
55080	PAzz.00	Anomalies of upper alimentary tract NOS
42998	PB...00	Other congenital digestive system anomaly
60083	PB1..00	Small intestine atresia and stenosis
33584	PB10.00	Atresia of small intestine
40252	PB10000	Atresia of small intestine, unspecified
19039	PB10100	Atresia of duodenum
53565	PB10200	Atresia of ileum
52687	PB10300	Atresia of jejunum
70579	PB10z00	Small intestine atresia NOS
18406	PB11200	Congenital absence of ileum
66309	PB12.00	Congenital obstruction of small intestine
59399	PB13.00	Congenital stenosis of small intestine
20686	PB13000	Congenital stenosis of duodenum
67021	PB13100	Congenital stenosis of jejunum
69712	PB13200	Congenital stenosis of ileum
99366	PB13z00	Congenital stenosis of small intestine NOS
47939	PB13z11	Congenital stricture of small intestine
68484	PB14.00	Imperforate jejunum
25042	PB1z.00	Small intestine atresia or stenosis NOS
51672	PB2..00	Atresia and stenosis of large intestine/rectum/anal canal
27598	PB2..11	Atresia large intestine
50109	PB2..12	Stenosis large intestine
58855	PB20.00	Congenital absence of large intestine
59430	PB20000	Congenital absence of anus
50443	PB20200	Congenital absence of rectum
93826	PB20300	Congenital absence of anus with fistula
58095	PB20400	Congenital absence of rectum with fistula
31468	PB21.00	Atresia of large intestine
31731	PB21000	Atresia of anus
23593	PB21100	Atresia of colon
46123	PB21200	Atresia of rectum
99653	PB21300	Atresia of appendix
71153	PB21500	Atresia of rectum with fistula
65762	PB22.00	Congenital obstruction of large intestine
108445	PB22.11	Congenital stenosis of large intestine
90483	PB23.00	Congenital occlusion of anus
101348	PB23000	Congenital occlusion of anus with fistula
62671	PB23z00	Congenital occlusion of anus NOS
48020	PB24.00	Congenital stricture of anus

Medcode	Read Code	Description
35019	PB24.11	Congenital anal stricture
41359	PB24000	Congenital stricture of anus with fistula
100539	PB24011	Congenital stenosis of anus with fistula
107117	PB24100	Congenital stricture of anus without mention of fistula
49089	PB24111	Congenital stenosis of anus without mention of fistula
73497	PB24z00	Congenital stricture of anus NOS
49501	PB25.00	Congenital stricture of rectum
38655	PB25.11	Congenital rectal stricture
69054	PB25000	Congenital stricture of rectum with fistula
101122	PB25111	Congenital stenosis of rectum without mention of fistula
42469	PB25z00	Congenital stricture of rectum NOS
4855	PB26.00	Imperforate anus
61401	PB26000	Imperforate anus with fistula
67319	PB26z00	Imperforate anus NOS
49242	PB27.00	Imperforate rectum
44953	PB27000	Imperforate rectum with fistula
35968	PB2z.00	Atresia and stenosis of large intestine/rectum/anus NOS
56630	PB3..00	Hirschsprung's disease and allied congenital conditions
94813	PB3..11	Aganglionosis
8546	PB30.00	Hirschsprung's disease
63395	PB30000	Long segment Hirschsprung's disease
70582	PB30z00	Hirschsprung's disease NOS
37401	PB31.00	Idiopathic congenital megacolon
65511	PB33.11	Aganglionic macrocolon
59085	PB3z.00	Hirschsprung's disease and allied congenital conditions NOS
67830	PB40.00	Congenital intestinal adhesions
69684	PB40000	Congenital omental adhesions
67420	PB40200	Congenital peritoneal adhesions
47616	PB40211	Congenital peritoneal bands
69811	PB40z00	Congenital intestinal adhesions NOS
50278	PB5..00	Other anomalies of intestine
68819	PB52z11	Congenital redundant rectal mucosa
48260	PB52z12	Congenital redundant colon
67877	PB53.00	Transposition of intestine
71180	PB53000	Transposition of intestine, unspecified
59279	PB53100	Transposition of appendix
66200	PB53200	Transposition of caecum
45857	PB53300	Transposition of colon
50050	PB56.00	Megaloduodenum
37080	PB59.00	Congenital anal fistula
47726	PB5X.00	Congenital malformation of intestine, unspecified
49448	PB5z.11	Congenital volvulus
71051	PB5z000	Congenital faecal fistula
40425	PB6..11	Bile duct anomalies
53764	PB60200	Bile duct anomaly, unspecified
16417	PB61000	Congenital absence of bile duct
49479	PB61200	Congenital obstruction of bile duct

Medcode	Read Code	Description
95810	PB61300	Congenital stricture of bile duct
32803	PB61311	Congenital stricture of common bile duct
38389	PB61400	Atresia of bile duct
48269	PB61500	Congenital absence of hepatic ducts
50400	PB61600	Atresia of hepatic ducts
27565	PB62.00	Congenital cystic liver disease
34903	PB62.11	Congenital hepatic cyst
18195	PB62000	Congenital polycystic liver disease
72000	PB62z00	Congenital cystic liver disease NOS
42256	PB63000	Congenital absence of gallbladder
47576	PB63011	Agenesis of gallbladder
98402	PB63100	Congenital absence of liver lobe
40029	PB63500	Alagille syndrome
20979	PB6y000	Congenital choledochal cyst
48738	PB6y100	Congenital hepatomegaly
65590	PB6y700	Congenital dilation of bile duct
66182	PB6yw00	Other congenital anomaly of liver
110299	PB6yw13	Trilobular liver
94116	PB6yy00	Other congenital anomaly of hepatic or bile ducts
61593	PB72.00	Hypoplasia of pancreas
30055	PB7z.00	Anomalies of pancreas NOS
60738	PBy0.00	Congenital absence of digestive system NOS
39277	PBy2.00	Congenital malposition of digestive system NOS
44969	PC...00	Congenital genital organ anomalies
42571	PC00.00	Congenital absence of ovary
106909	PC0y.11	Congenital ovarian dysplasia
61770	PC1y200	Atresia of fallopian tube
57747	PC4y200	Congenital absence of clitoris
32484	PC4y800	Congenital stenosis of cervical canal
37200	PC4y900	Congenital stenosis of vagina
62647	PC4y911	Congenital stricture of vagina
65385	PC4yA00	Atresia of cervix
36548	PC4yB00	Atresia of vagina
30143	PC4yC00	Congenital vaginal cyst NEC
30673	PC4yE00	Congenital labial adhesions
46264	PC70.00	True hermaphroditism
54216	PC71.00	Male pseudohermaphroditism
64539	PC72.00	Female pseudohermaphroditism
48532	PC7z100	Pseudohermaphrodite NOS
49245	PCy0000	Congenital absence of penis
94282	PCy1.00	Congenital aplasia of genital organ NEC
91739	PCy1000	Congenital aplasia of prostate
38020	PCy1300	Congenital aplasia of scrotum
23948	PCy2000	Hypoplasia of penis
95015	PCy3.00	Atresia of genital organ NEC
56100	PCy3000	Atresia of ejaculatory duct
62335	PCy3z00	Atresia of genital organ NEC NOS

Medcode	Read Code	Description
48765	PCy4.12	Testicular agenesis, bilateral
38998	PCy5.12	Testicular agenesis, unilateral
22437	PCyw.00	Other congenital anomaly of testis or scrotum
30097	PD0..00	Renal agenesis and dysgenesis
27474	PD00.00	Renal agenesis, unspecified
31961	PD00100	Unilateral renal agenesis
55985	PD00z00	Renal agenesis, unspecified NOS
27471	PD01.00	Congenital renal atrophy
3314	PD02.00	Congenital absence of kidney
71154	PD02000	Bilateral congenital absence of kidneys
23958	PD02100	Unilateral congenital absence of kidney
65407	PD02z00	Congenital absence of kidney NOS
42925	PD03000	Bilateral renal hypoplasia
30650	PD03100	Unilateral renal hypoplasia
9500	PD04000	Bilateral renal dysplasia
24120	PD04100	Unilateral renal dysplasia
54656	PD04111	Unilateral renal dysgenesis
105657	PD04200	Renal dysplasia and retinal aplasia
29659	PD0z.00	Renal agenesis or dysgenesis NOS
15917	PD1..00	Congenital cystic kidney disease
4504	PD1..13	Polycystic kidney
27436	PD1..14	Sponge kidney
17523	PD10.00	Congenital renal cyst, single
4503	PD11.00	Polycystic kidney disease
105919	PD11011	Autosomal recessive polycystic kidney disease
4505	PD11100	Polycystic kidneys, adult type
105143	PD11111	Autosomal dominant polycystic kidney disease
56852	PD11z00	Polycystic kidney disease NOS
9240	PD11z11	Cystic kidney disease NEC
42632	PD12.00	Medullary cystic disease
66998	PD12000	Medullary cystic disease, juvenile type
42042	PD12011	Nephronophthisis
105794	PD12012	Autosomal recessive medullary cystic disease
47135	PD12100	Medullary cystic disease, adult type
109106	PD12200	Nephronophthisis - medullary cystic disease
110208	PD12211	Autosomal dominant medullary cystic disease
64694	PD12y00	Medullary cystic disease OS
41522	PD12z00	Medullary cystic disease NOS
18331	PD13.00	Multicystic renal dysplasia
11946	PD13.11	Multicystic kidney
59031	PD1yz00	Other congenital cystic kidney disease NOS
50331	PD1z.00	Congenital cystic kidney disease NOS
49700	PD20.00	Atresia of ureter
59736	PD21.11	Congenital ureteric valves
33355	PD22.00	Congenital stricture of ureter
50820	PD22.11	Congenital stenosis of ureter
97464	PD22000	Congenital stricture of ureter, unspecified

Medcode	Read Code	Description
27646	PD22100	Congenital stricture of ureteropelvic junction
96829	PD22200	Congenital stricture of ureterovesical orifice
69191	PD22z00	Congenital stricture of ureter NOS
5379	PD23.00	Congenital hydronephrosis
22571	PD23.11	Congenital dilated renal pelvis
26403	PD24.00	Congenital dilatation of ureter
46116	PD25.00	Hydroureter - congenital
5099	PD26.00	Megaloureter - congenital
46177	PD2z.00	Obstructive defect of renal pelvis or ureter NOS
32963	PD30.12	Renal duplication NEC
56531	PD31.00	Congenital calculus of kidney
4431	PD34.11	Duplex kidneys
92988	PD3C.00	Triple kidney with triple pelvis
24918	PD47.00	Congenital vesico-uretero-renal reflux
97475	PD60000	Atresia of bladder neck
47854	PD60z00	Congenital bladder neck obstruction NOS
34741	PD61.00	Congenital obstruction of urethra
95045	PD61000	Atresia of anterior urethra
100419	PD61z00	Congenital obstruction of urethra NOS
41342	PD62.00	Congenital urethral valvular stricture
69107	PD62.11	Congenital posterior urethral valves
31985	PD63.00	Congenital urinary meatus stricture
67371	PD63.11	Congenital urinary meatus obstruction
71832	PD63z00	Congenital urinary meatus stricture NOS
104830	PD64.00	Congenital vesicourethral orifice stricture
11710	PD67.00	Congenital posterior urethral valves
30315	PD7..00	Anomalies of urachus
56889	PD7z.00	Anomalies of urachus NOS
109067	PD8..00	Congenital abnormality of the kidney
108940	PD80.00	Duplex kidney
39970	PDy0.00	Congenital absence of bladder
57166	PDy5.00	Congenital bladder hernia
29419	PDy6.00	Congenital urethrorectal fistula
41025	PDy7.00	Congenital prolapse of bladder mucosa
47479	PDy8.00	Congenital prolapse of urethra
44752	PDz2.00	Unspecified anomaly of bladder
46880	PDz3.00	Unspecified anomaly of urethra
3298	PE...11	Congenital musculoskeletal deformities
9371	PE00000	Hemifacial microsomia
53454	PE07.00	Congenital bent or squashed nose
65125	PE1..11	Congenital wry neck
22012	PE2..00	Congenital spine deformity
49933	PE20.00	Congenital spine deformity, unspecified
29412	PE2z.00	Congenital spine deformity NOS
38363	PE2z.11	Congenital postural curvature of spine NOS
9239	PE3..00	Congenital dislocation and subluxation of the hip
933	PE30.00	Congenital dislocation of hip

Medcode	Read Code	Description
45970	PE30000	Unilateral congenital dislocation of hip
38373	PE30100	Bilateral congenital dislocation of hip
33576	PE30z00	Congenital dislocation of hip NOS
34019	PE31000	Unilateral congenital subluxation of hip
97269	PE31014	Congenital instability of hip joint
61870	PE31100	Bilateral congenital subluxation of hip
62586	PE31z00	Congenital subluxation of hip NOS
38772	PE34000	Unilateral dysplastic hip
34285	PE34100	Bilateral dysplastic hip
50468	PE35100	Bilateral unstable hip
27301	PE3z.00	Congenital dislocation of hip NOS
41198	PE4..11	Congenital leg bone bowing
50367	PE40.00	Congenital genu recurvatum
22846	PE50.00	Congenital talipes varus
156	PE51.00	Congenital talipes equinovarus
7815	PE5y000	Congenital talipes calcaneovarus
29808	PE60.00	Congenital talipes valgus
23980	PE60.11	Congenital clubfoot - valgus
50065	PE61000	Congenital vertical talus
31013	PE6y000	Congenital talipes equinovalgus
41807	PE6z.11	Congenital metatarsus valgus
38386	PE7y100	Congenital talipes calcaneus
4334	PE7y200	Congenital talipes equinus
27309	PE80.11	Congenital funnel chest
45651	PE8y000	Congenital club hand
41019	PE8y011	Congenital club fingers
35125	PE8y111	Congenital thoracic wall deformity NEC
22301	PE8y200	Congenital dislocation of elbow
56631	PE8y300	Congenital flexion contractures of leg
61879	PE8y400	Congenital spade-like hand
50307	PE8y600	Congenital flexion contracture of hip
29124	PE8y800	Congenital flexion contracture of knee
37167	PE9..11	Other congenital musculoskeletal deformity
33946	PEz..00	Congenital musculoskeletal deformity NOS
14649	PF...00	Other congenital limb anomalies
40691	PF0z.00	Polydactyly NOS
63079	PF10.00	Syndactyly of multiple digits, unspecified
41117	PF11.00	Syndactyly of fingers without bone fusion
56836	PF13.00	Syndactyly of toes without bone fusion
67014	PF14.00	Syndactyly of toes with bone fusion
108734	PF14.13	Syndactyly of toes with bone fusion
38836	PF15.00	Polysyndactyly
43838	PF1z.00	Syndactyly NOS
68991	PF1z.11	Polysyndactyly
37973	PF21.11	Congenital absence part of arm
59307	PF21400	Congenital amputation of upper limb
46835	PF21613	Congenital absence of hand

Medcode	Read Code	Description
56350	PF21z11	Agenesis of hand
37277	PF23.00	Congenital absence upper arm and forearm with hand present
72180	PF24.00	Congenital absence of upper arm only
27624	PF25.00	Congenital absence of forearm only
66061	PF26200	Total radial absence
68975	PF27100	Total absence of ulna
33394	PF29.00	Congenital absence of finger
22457	PF2z.11	Hypoplasia of upper limb
60525	PF31200	Congenital absence of leg and foot
94734	PF34100	Congenital short femur
72561	PF35.00	Congenital absence of lower leg only
104835	PF36200	Congenital tibial deficiency type III
60930	PF37.00	Agenesis of fibula
97903	PF37100	Congenital fibular deficiency type II
64339	PF39400	Congenital absence of other multiple toes
24646	PF3z.11	Hypoplasia of lower limb
28661	PF40.00	Congenital absence of limb NOS
53564	PF45.00	Congenital amputation of unspecified limb
59166	PF47.11	Adactyly
51993	PF4z.13	Hypoplasia of limb NOS
28542	PF51.00	Congenital deformity of clavicle
37402	PF55.11	Apert's syndrome
41840	PF55000	Acrocephalosyndactyly (Apert)
57986	PF55300	Saethre-Chotzen syndrome
30141	PF58.00	Congenital cleft hand
24053	PF5E.00	Constriction ring syndrome of upper limb
38896	PF5E000	Constriction ring
93038	PF5E100	Constriction ring with lymphoedema
62353	PF5E200	Acrosyndactyly
104024	PF5E400	Constriction ring with acrosyndactyly and amputation
48901	PF5F.00	Congenital absence of both forearm and hand
48508	PF5G.00	Congenital complete absence of upper limb(s)
26291	PF5r.00	Other congenital anomalies of fingers
37965	PF5rD00	Congenital malformation of thumb
66010	PF5u.00	Other congenital anomalies of forearm
61558	PF5uz00	Other congenital anomaly forearm NOS
24218	PF5v.00	Congenital anomalies of elbow and upper arm
63972	PF5w.00	Other congenital anomalies of shoulder
49743	PF5w.11	Congenital deformity of scapula NEC
48510	PF5x.00	Other congenital anomalies of whole arm
62024	PF5y300	Congenital humeral varus
2889	PF63100	Congenital hip dysplasia
40517	PF63X00	Congenital deformity of hip, unspecified
63834	PF63z00	Other congenital hip joint deformity NOS
61638	PF64000	Congenital absence of patella
50077	PF64z00	Congenital knee joint deformity NOS
99687	PF69000	Congenital synostosis of lower limb bones

Medcode	Read Code	Description
46652	PF6B.00	Congenital overgrowth of lower limb
53673	PF6B200	Congenital overgrowth of foot
62705	PF6B300	Congen overgrowth of whole lower limb
62450	PF6C.00	Congenital undergrowth of lower limb
54180	PF6C000	Congenital undergrowth of proximal part of limb
64939	PF6C100	Congenital undergrowth of distal part of limb
67293	PF6D.00	Constriction ring syndrome of lower limb
93784	PF6D000	Constriction ring of lower limb
28775	PF6D300	Constriction ring syndrome of lower limb with amputation
59150	PF6v.00	Other congenital anomalies of lower leg
92299	PF6w.00	Other congenital anomalies of upper leg
25190	PF6x.00	Other congenital anomalies of pelvis
55114	PF6xz00	Other congenital anomalies of pelvis NOS
54295	PF6y000	Congenital angulation of tibia
27426	PF6y100	Congenital deformity of ankle joint
64527	PF6y200	Congenital deformity of sacroiliac joint
67220	PF6y300	Congenital fusion of sacroiliac joint
36277	PF6y400	Congenital varus ankle
36791	PF6y500	Congenital valgus ankle
48469	PF6y600	Congenital pseudarthrosis of tibia
66220	PFyz.00	Other anomaly of unspecified limb NOS
9723	PFz..00	Congenital anomaly of unspecified limb NOS
38119	PG00.00	Congenital absence of skull bones
48272	PG01.00	Acrocephaly
16897	PG03.00	Craniosynostosis
25783	PG04.11	Crouzon's disease
107520	PG04.12	Trigorhinophalangeal dysplasia
38476	PG0B.00	Trigonocephaly
4046	PG0C.00	Pierre - Robin syndrome
44064	PG0E.00	Oculomandibular dysostosis
69377	PG0E.11	Hallerman - Streif syndrome
96210	PG0J.00	Pierre Robin association
33762	PG0y000	Brachycephaly
69913	PG0yz00	Other anomaly of skull or face bone NOS
60066	PG10.00	Anomaly of spine, unspecified
35729	PG11.00	Congenital lumbosacral spondylolysis
1871	PG12.00	Congenital spondylolisthesis
68093	PG13000	Congenital absence of cervical vertebra
43351	PG13300	Congenital absence of sacrum
29414	PG15.11	Congenital lumbosacral fusion
52822	PG15000	Congenital complete fusion of spine
91259	PG15100	Congenital partial fusion of spine - balanced
53028	PG15200	Congenital partial fusion of spine - unbalanced
4674	PG16.00	Klippel-Feil syndrome
73985	PG16z00	Klippel - Feil syndrome NOS
3336	PG17.00	Spina bifida occulta
28717	PG18.11	Congenital kyphoscoliosis

Medcode	Read Code	Description
5574	PG1u.00	Congenital anomalies of cervical vertebrae NEC
41763	PG1uz00	Congenital anomaly of cervical vertebrae NEC NOS
40690	PG1v.00	Congenital anomalies of thoracic vertebrae NEC
71152	PG1vz00	Congenital anomaly of thoracic vertebrae NEC NOS
66463	PG1wz00	Congenital anomaly of lumbar vertebra NEC NOS
48088	PG1x.00	Congenital sacrococcygeal anomalies NEC
93830	PG1x000	Congenital absence of coccyx
68081	PG1x100	Congenital absence of sacrum
70583	PG1xz00	Congenital sacrococcygeal anomaly NOS
56878	PG1y.00	Other anomaly of spine
53416	PG1y.11	Congenital deformity of lumbosacral joint
51156	PG1y.12	Congenital deformity of lumbosacral region
68493	PG1y400	Hypoplasia of spine
22768	PG1yz00	Other anomaly of spine NOS
45429	PG1z.00	Anomalies of spine NOS
42378	PG30.00	Congenital absence of rib
63291	PG31.00	Congenital absence of sternum
35806	PG33.00	Congenital fusion of ribs
31378	PG3x.00	Other congenital anomalies of ribs
51424	PG3y.00	Other congenital anomalies of sternum
66465	PG3z.11	Anomalies of thoracic cage unspecified
22756	PG4..00	Chondrodysplasia
73905	PG40.00	Chondrodysplasia, unspecified
5006	PG41.11	Dwarfism
57804	PG41.13	Achondroplastic dwarf
94173	PG41000	Hypochondroplasia
29840	PG42.15	Hypochondroplasia
59172	PG42.16	Osteopathia striata
36351	PG42.17	Pseudochondroplasia
61992	PG42012	Maffuci's syndrome
105696	PG42100	Myotonic chondrodysplasia
50228	PG43.11	Jeune's syndrome
37743	PG44100	Metatropic dwarfism
56900	PG44200	Thanatophoric dwarfism
67262	PG44211	Thanatophoric dysplasia
43115	PG44600	Pseudoachondroplasia
95921	PG44z00	Other dwarfing syndromes NOS
26069	PG45.00	Metaphyseal dysostosis
56692	PG45.12	Schmid's metaphyseal dysostosis
45162	PG45.15	Metaphyseal dysplasia
95041	PG4B100	Hypochondrogenesis
18193	PG4C.00	Chondrodysplasia punctata
14917	PG4z.00	Chondrodysplasia NOS
36753	PG5..00	Osteodysplasia
38450	PG5..11	Osteodystrophy
96403	PG50.00	Osteodysplasia, unspecified
5524	PG51.13	Adair-Dighton syndrome

Medcode	Read Code	Description
66679	PG51.15	Van der Hoeve's syndrome
50325	PG52.11	Albers - Schonberg syndrome
39943	PG53.00	Osteopoikilosis
30600	PG54.00	Polyostotic fibrous dysplasia
68007	PG55.11	Ellis - Van Creveld syndrome
58035	PG56000	Chondrodysplasia calcificans congenita
63146	PG56011	Chondrodysplasia calcificans congenita
15046	PG5y000	Albright-Sternberg syndrome
30601	PG5y011	Albright-McCune-Sternberg syndrome
57407	PG5y012	Albright's polyostotic dysplasia
55331	PG5z.00	Osteodysplasia NOS
68427	PG5z.11	Osteochondrodysplasia
31416	PG6..00	Anomalies of diaphragm
49768	PG61.00	Congenital diaphragmatic hernia
59281	PG61.11	Congenital defect of diaphragmatic NEC
24561	PG62.00	Congenital foramen Morgagni hernia
15593	PG71.00	Gastroschisis
22853	PG72.00	Prune belly syndrome
110450	PG73.00	Congenital umbilical hernia
63565	PGW..00	Osteochondrodyspl with defct growth tub bone spine unspec
52658	PGX..00	Congenital malformation of bony thorax, unspecified
56160	PGy0212	Orbinsky syndrome
4451	PGy2.00	Ehlers-Danlos syndrome
63549	PGy2000	Ehlers-Danlos syndrome type I
72787	PGy2100	Ehlers-Danlos syndrome type II
28335	PGy2200	Ehlers-Danlos syndrome type III
70415	PGy2300	Ehlers-Danlos syndrome type IV
53984	PGy2500	Ehlers-Danlos syndrome type VI
95643	PGy2600	Ehlers-Danlos syndrome type VII
98263	PGy2700	Ehlers-Danlos syndrome type VIII
57769	PGyy000	Amyotrophica congenita
45473	PGyy400	Aplasia of muscle
2709	PGz..00	Congenital musculoskeletal anomalies NOS
35801	PGz..11	Congenital deformity of musculoskeletal system NEC
22492	PGz2.00	Unspecified anomaly of bones
28247	PGz4.00	Unspecified anomaly of connective tissue
31007	PH...11	Congenital skin anomalies
27326	PH00.00	Congenital lymphoedema
51067	PH03.00	Congenital elephantiasis
370	PH1..00	Ichthyosis congenita
36468	PH10.00	Congenital ichthyosis, unspecified
11632	PH12.11	Sjogren - Larsson syndrome
5555	PH14.00	Ichthyosis vulgaris
35335	PH15.00	X-linked ichthyosis
64322	PH1z.00	Ichthyosis congenita NOS
57526	PH1z.11	Congenital ichthyosiform erythroderma
48046	PH32000	Congenital poikiloderma

Medcode	Read Code	Description
40502	PH33300	Rothmund-Thomson syndrome
57510	PH33312	Thomson's disease
60246	PH3y100	Congenital scar
36991	PH3y300	Congenital keratoderma
37798	PH3y700	Epidermolysis bullosa simplex
16618	PH40.00	Congenital alopecia
59553	PH40.11	Congenital atrichosis
104030	PH40000	Congenital alopecia, unspecified
92345	PH40100	Congenital localised alopecia
68179	PH40200	Congenital generalised alopecia
98667	PH40z00	Congenital alopecia NOS
46296	PH41.00	Congenital monilethrix
30154	PH42.00	Congenital hypertrichosis
32621	PH52.00	Congenital koilonychia
95805	PH53.00	Congenital leukonychia
66070	PH54.00	Congenital onychauxis
35067	PH55.00	Congenital pachyonychia
65092	PH6X.00	Congenital malformation of breast, unspecified
54223	PHz0.11	Congenital dermal defect
27676	PHz2.11	Congenital deformity of nail
671	PJ...00	Chromosomal anomalies
1543	PJ0..00	Down's syndrome - trisomy 21
23489	PJ0..11	Mongolism
18415	PJ0..12	Trisomy 21
42701	PJ00.00	Trisomy 21, meiotic nondisjunction
32010	PJ01.00	Trisomy 21, mosaicism
107919	PJ01.11	Trisomy 21, mitotic nondisjunction
61499	PJ02.00	Trisomy 21, translocation
101309	PJ02.11	Partial trisomy 21 in Down's syndrome
10759	PJ0z.00	Down's syndrome NOS
61627	PJ0z.11	Trisomy 21 NOS
37105	PJ3..00	Monosomies and deletions from the autosomes
57806	PJ30.11	Deletion of long arm of chromosome 21
31795	PJ31.00	Cri-du-chat syndrome
98941	PJ31.11	Deletion of short arm of chromosome 5
66566	PJ32.00	Deletion of short arm of chromosome 4
67298	PJ33000	Deletion of long arm of chromosome 13
95440	PJ33100	Deletion of long arm of chromosome 18
97927	PJ33200	Deletion of short arm of chromosome 18
36871	PJ33300	Smith-Magenis syndrome
100507	PJ33400	Jacobsen syndrome
104196	PJ33800	Chromosome 4q deletion syndrome
68256	PJ36.00	Whole chromosome monosomy, meiotic nondisjunction
95598	PJ37.00	Whole chromosome monosomy, mosaicism
67815	PJ37z00	Whole chromosome monosomy, mosaicism NOS
100562	PJ38.00	Chromosome replaced with ring or dicentric
106938	PJ38.11	Chromosome replaced with dicentric

Medcode	Read Code	Description
47247	PJ38.12	Chromosome replaced with ring
12841	PJ3y000	Shprintzen syndrome
98395	PJ3z.00	Monosomies and deletions from the autosomes NOS
37702	PJ50.00	Whole chromosome trisomy syndromes
37591	PJ50100	Trisomy 7
70198	PJ50600	Trisomy 12
100024	PJ50800	Trisomy 22
107670	PJ50w00	Whole chromosome trisomy, meitotic nondisjunction
45512	PJ50x00	Whole chromosome trisomy, mosaicism
101982	PJ50z00	Whole chromosome trisomy syndrome NOS
19062	PJ51.00	Partial trisomy syndromes
71815	PJ51000	Major partial trisomy
100174	PJ51z00	Partial trisomy syndrome NOS
54377	PJ52.00	Trisomies of autosomes NEC
34913	PJ52300	Triploidy
107119	PJ52z00	Trisomy of autosomes NEC NOS
54241	PJ53000	Chromosome inversion in normal individual
62041	PJ53500	Shwachman-Diamond syndrome
71029	PJ5z.00	Unspecified conditions due to autosomal anomalies
61407	PJ5z.11	Aneuploidy NEC
73492	PJ60.00	Mixed gonadal dysgenesis
4943	PJ63.00	Turner's syndrome
98244	PJ63000	Turner's phenotype, karyotype normal
30721	PJ63100	Turner's phenotype, karyotype 45X
92599	PJ63200	Turner's phenotype, karyotype 46X iso (Xq)
109385	PJ63300	Turner's,karyotype 46X + abnorm. sex chromosome,not iso(Xq)
51868	PJ63400	Turner's phenotype, mosaicism 45X/46XX or 45X/46XY
40570	PJ63500	Turner's,mosaic, 45X/other cell line with abn.sex chromosome
65206	PJ63600	Turner's phenotype, other variant karyotypes
97871	PJ63611	Turner's phenotype, ring chromosome karyotype
64945	PJ63612	Turner's phenotype, partial X deletion karyotype
53168	PJ63z00	Turner's syndrome NOS
41152	PJ64000	XY, female phenotype
54490	PJ70.00	Klinefelter's phenotype, karyotype 47XXY
67854	PJ71.00	Klinefelter's syndrome,male with more than two X chromosomes
56545	PJ71.11	Klinefelter's syndrome, XXXY
62414	PJ71.12	Klinefelter's syndrome, XXXXY
96257	PJ72.00	Klinefelter's syndrome, male with 46XX karyotype
91262	PJ73.00	Klinefelter's syndrome, XXYY
68109	PJ74.00	Klinefelter's syndrome, XY/XXY mosaic
59439	PJ7z.00	Klinefelter's syndrome NOS
93694	PJ9..00	Mowat-Wilson syndrome
4376	PJX..00	Sex chromosome abnormality, male phenotype, unspecified
55119	PJy1.00	Sex chromosome mosaicism
33269	PJy1000	Mosaic XO/XY
32783	PJy1100	Mosaic XO/XX
64578	PJy1200	Mosaic XY/XXY

Medcode	Read Code	Description
105345	PJy1300	Mosaic including XXXXY
65983	PJy1z00	Sex chromosome mosaicism NOS
32782	PJy2.00	XXX syndrome
6377	PJy2.11	Triple X female
99213	PJy2.12	Karyotype 47, XXX
11948	PJy3.00	XXY syndrome
23643	PJy5.00	Mosaicism, lines with various numbers of X chromosomes
37484	PJy6.00	Male with structurally abnormal sex chromosome
102328	PJyy.11	Absence of sex chromosome
9768	PJyy300	Karyotype 47,XYY
34667	PJyz.00	Sex chromosome anomaly NOS
20231	PJz..00	Chromosomal anomalies NOS
26140	PJz0.00	Mosaicism NOS
9665	PJz1.00	Additional chromosome NOS
26338	PK0..00	Anomalies of spleen
59741	PK03.00	Congenital splenomegaly
71462	PK06.00	Hypoplasia of spleen
59625	PK0z.00	Anomalies of spleen NOS
25292	PK1..00	Anomalies of adrenal gland
71109	PK11.00	Absent adrenal gland
29818	PK13.00	Hypoplasia of adrenal gland
95752	PK15.00	Aplasia of adrenal gland
107541	PK1yz00	Other congenital anomaly of adrenal gland NOS
36064	PK1z.00	Anomalies of adrenal gland NOS
32424	PK24.00	Anomalies of pituitary gland
111629	PK24100	Congenital absence of pituitary gland
70576	PK24z00	Anomaly of pituitary gland NOS
10638	PK25.00	Anomalies of thyroid gland NEC
3374	PK25100	Congenital absence of thyroid gland
70581	PK25z00	Anomaly of thyroid gland NEC NOS
57704	PK26.00	Anomalies of thyroglossal duct NEC
39588	PK27.00	Anomalies of parathyroid gland NEC
100681	PK27z00	Anomaly of parathyroid gland NEC NOS
39366	PK28.00	Anomalies of thymus
73987	PK28100	Congenital absence of thymus
48842	PK28z00	Anomaly of thymus gland NOS
72246	PK30.00	Situs inversus, unspecified
47596	PK30.11	Transposition of viscera unspecified
43560	PK31.00	Situs inversus abdominalis
65785	PK31.11	Transposition of abdominal viscera
63861	PK32.00	Situs inversus thoracis
110797	PK34.00	Situs inversus with levocardia
23513	PK3z.00	Situs inversus NOS
15607	PK60.00	Peutz - Jegher's syndrome
4749	PK61.00	Sturge-Weber syndrome
28443	PK62.00	Von Hippel-Lindau syndrome
16530	PK7..00	Multiple congenital anomalies NOS

Medcode	Read Code	Description
98724	PK7z.00	Multiple congenital anomalies NOS
58981	PK8..00	Congenital malformation syndromes due to known exogen causes
57081	PK84.00	Fetal valproate syndrome
107550	PKy0400	Marshall-Smith syndrome
57458	PKy1.11	Biedl-Bardet syndrome
936	PKy2.00	Marfan's syndrome
30187	PKy5.00	Congen malformation syndromes affecting facial appearance
49307	PKy5000	Oral - facial - digital syndrome
98998	PKy5011	Papillon-Leage-Psaume syndrome
67072	PKy5100	Mohr's syndrome
70356	PKy5600	Marchesani syndrome
111653	PKy5900	Oculo-palato-digital syndrome
50508	PKy5B00	Costello syndrome
99476	PKy5H00	Simpson-Golabi-Behmel syndrome
108543	PKy5M00	Oculofaciocardiodental syndrome
67260	PKy5z00	Congenital malform syndrome affecting facial appearance NOS
57953	PKy6.00	Congenital malformation syndromes with short stature
32868	PKy6200	Russell - Silver syndrome
34719	PKy6400	Seckel syndrome
22048	PKy6500	Aarskog syndrome
57043	PKy6600	Dubowitz syndrome
73575	PKy6z00	Congenital malformation syndrome with short stature NOS
45548	PKy7.00	Congenital malformation syndromes involving limbs
21966	PKy7100	Holt - Oram syndrome
10491	PKy7200	Klippel - Trenaunay - Weber syndrome
104100	PKy7311	Rubinstein-Taybi syndrome
31211	PKy7A00	Congenital contractural arachnodactyly
95151	PKy7z00	Congenital malformation syndrome involving limbs NOS
97293	PKy8.00	Congenital malformation syndromes with other skeletal change
10068	PKy8000	Noonan's syndrome
100310	PKy8z00	Congenital malformation syndrome+other skeletal changes NOS
94910	PKy9.00	Congenital malformation syndromes with metabolic disturbance
24395	PKy9000	Alport's syndrome
12357	PKy9100	Beckwith's syndrome
32054	PKy9111	Wiedemann - Beckwith syndrome
69127	PKy9211	Kinky hair syndrome
72742	PKyG.00	Men ret congen heart dis blepharophim blepharop hypopl teeth
61322	PKyG.11	Ohdo blepharophimosis syndrome
106927	PKyP.00	Diab insipidus,diab mell,optic atrophy and deafness
25089	PKyz100	Acardia
31853	PKyz600	Congenital hemihypertrophy
53820	PyuA.00	[X]Chromosomal abnormalities, not elswhere classified
23447	Q200000	Cerebral haemorrhage unspecified, due to birth trauma
36559	Q200011	Intracerebral haemorrhage in fetus or newborn
44479	Q200511	Intracerebral haematoma in fetus or newborn
48731	Q200700	Cerebral haemorrhage due to birth injury
15082	Q215.00	Severe birth asphyxia - apgar score less than 4 at 1 minute

Medcode	Read Code	Description
68903	Q313400	Tracheobronchial haemorrhage origin in the perinatal period
48476	Q317200	Wilson-Mikity syndrome
39079	Q319.00	Respiratory failure of newborn
43003	Q402000	Congenital herpes simplex
70280	Q402100	Congenital listeriosis
69316	Q402200	Congenital malaria
107917	Q402311	Congenital hydrocephalus due to toxoplasmosis
55957	Q402400	Congenital tuberculosis
52576	Q402500	Congenital falciparum malaria
67779	Q409.00	Congenital viral hepatitis
40762	Q409000	Congenital hepatitis A infection
50245	Q409100	Congenital hepatitis B infection
107622	Q409z00	Congenital viral hepatitis NOS
106080	Q40V.00	Congenital infectious and parasitic disease, unspecified
93368	Q40X.00	Congenital viral disease, unspecified
31452	Q424.00	Kernicterus due to isoimmunisation
48012	Q437.00	Kernicterus not due to isoimmunisation
61800	Q437z00	Kernicterus of newborn NOS
65686	Q444.12	Neonatal hypoparathroidism
106500	Q44A.00	Neonatal hypoparathyroidism
68850	Q454000	Polycythaemia due to donor twin transfusion
64182	Q454z00	Polycythaemia neonatorum NOS
31248	Q455.00	Congenital anaemia
99494	Q455000	Congenital anaemia from fetal blood loss
57813	Q466100	Congenital faecoliths causing obstruction
13304	Q480.12	Seizures in newborn
56614	Q488.00	Neonatal cerebral ischaemia
48202	Q48A.00	Neonatal cerebral leukomalacia
8722	Q48y200	Congenital hypotonia
26681	Q48y300	Congenital hypertonia
94733	Q48y500	Megalencephaly
34642	Q48yz11	Congenital hepatic fibrosis
46545	S62z.00	Cerebral haemorrhage following injury NOS
40765	SB00100	Common carotid artery injury
63298	SJ01.00	Optic chiasm injury
62286	SJ21.00	Thoracic cord injury without spinal bone injury
102775	SJ21z00	Thoracic cord injury without spinal bone injury, NOS
21483	SM31000	Hydrochloric acid causing toxic effect
101375	SN51000	Acquired C1 esterase inhibitor deficiency
101075	SN51100	Hereditary C1 esterase inhibitor deficiency
32919	SN5y011	Malignant hyperthermia due to anaesthesia
24599	Z271G11	Type 1 dip
44403	Z271H11	Type 2 dip
93788	Z77C.32	Physical health handicap
56376	Z7CD200	Learning difficulties
10890	Z7E4400	Cerebellar ataxia
46999	Z88..11	Physical health handicap

Medcode	Read Code	Description
25990	ZPA2100	Special educational needs
105445	ZR1N.00	Anomalous sentences repetition test
45726	ZRq9.00	Systemic lupus erythematosus disease activity index
22896	ZS...00	Speech and language disorder
59254	ZS42100	Spastic dysarthria
60703	ZS42111	Pseudobulbar palsy type of dysarthria
64216	ZS42113	Suprabulbar palsy type of dysarthria
38800	ZS42411	Ataxic dysarthria
43892	ZS5..00	Speech and language dyspraxias
28845	ZS6..00	Speech and phonology impairments
93178	ZS78411	Transcortical motor aphasia
101822	ZS78600	Transcortical sensory dysphasia
105929	ZS78611	Transcortical sensory aphasia
65074	ZS78D00	Wernicke's dysphasia
51158	ZS78D13	Wernicke's aphasia
99857	ZS7C400	Language disorder associated with right hemisphere damage
32831	ZS7C600	Language disorder associated with thought disorder
49889	ZS82.00	Acquired epileptic aphasia
59806	ZS82.11	Landau-Kleffner syndrome
28543	ZS91.00	Attention deficit disorder
24753	ZS91.12	[X]Attention deficit disorder
32923	ZT23.00	Speech problem
22796	ZT4C211	Mute

ICD-10 Codes

ICD-10 Code	Description
A15.0	Tuberculosis of lung, confirmed by sputum microscopy with or without culture
A15.1	Tuberculosis of lung, confirmed by culture only
A15.2	Tuberculosis of lung, confirmed histologically
A15.3	Tuberculosis of lung, confirmed by unspecified means
A15.4	Tuberculosis of intrathoracic lymph nodes, confirmed bacteriologically and histologically
A15.5	Tuberculosis of larynx, trachea and bronchus, confirmed bacteriologically and histologically
A15.6	Tuberculous pleurisy, confirmed bacteriologically and histologically
A15.7	Primary respiratory tuberculosis, confirmed bacteriologically and histologically
A15.8	Other respiratory tuberculosis, confirmed bacteriologically and histologically
A15.9	Respiratory tuberculosis unspecified, confirmed bacteriologically and histologically
A16.0	Tuberculosis of lung, bacteriologically and histologically negative
A16.1	Tuberculosis of lung, bacteriological and histological examination not done
A16.2	Tuberculosis of lung, without mention of bacteriological or histological confirmation
A16.3	Tuberculosis of intrathoracic lymph nodes, without mention of bacteriological or histological confirmation
A16.4	Tuberculosis of larynx, trachea and bronchus, without mention of bacteriological or histological confirmation
A16.5	Tuberculous pleurisy, without mention of bacteriological or histological confirmation
A16.7	Primary respiratory tuberculosis without mention of bacteriological or histological confirmation
A16.8	Other respiratory tuberculosis, without mention of bacteriological or histological confirmation
A16.9	Respiratory tuberculosis unspecified, without mention of bacteriological or histological confirmation
A18.0	Tuberculosis of bones and joints
A18.1	Tuberculosis of genitourinary system
A18.2	Tuberculous peripheral lymphadenopathy
A18.3	Tuberculosis of intestines, peritoneum and mesenteric glands
A18.4	Tuberculosis of skin and subcutaneous tissue
A18.5	Tuberculosis of eye
A18.6	Tuberculosis of ear
A18.7	Tuberculosis of adrenal glands
A18.8	Tuberculosis of other specified organs
A19.0	Acute miliary tuberculosis of a single specified site
A19.1	Acute miliary tuberculosis of multiple sites
A19.2	Acute miliary tuberculosis, unspecified
A19.8	Other miliary tuberculosis
A19.9	Miliary tuberculosis, unspecified
A50.0	Early congenital syphilis, symptomatic
A50.1	Early congenital syphilis, latent
A50.2	Early congenital syphilis, unspecified
A50.3	Late congenital syphilitic oculopathy
A50.4	Late congenital neurosyphilis [juvenile neurosyphilis]
A50.5	Other late congenital syphilis, symptomatic
A50.6	Late congenital syphilis, latent

ICD-10 Code	Description
A50.7	Late congenital syphilis, unspecified
A50.9	Congenital syphilis, unspecified
A81.2	Progressive multifocal leukoencephalopathy
A81.8	Other atypical virus infections of central nervous system
A81.9	Atypical virus infection of central nervous system, unspecified
B18.0	Chronic viral hepatitis B with delta-agent
B18.1	Chronic viral hepatitis B without delta-agent
B18.2	Chronic viral hepatitis C
B18.8	Other chronic viral hepatitis
B18.9	Chronic viral hepatitis, unspecified
B37.1	Pulmonary candidiasis
B37.5	Candidal meningitis
B37.6	Candidal endocarditis
B37.7	Candidal sepsis
B38.1	Chronic pulmonary coccidioidomycosis
B39.1	Chronic pulmonary histoplasmosis capsulati
B40.1	Chronic pulmonary blastomycosis
B44.0	Invasive pulmonary aspergillosis
B44.7	Disseminated aspergillosis
B45.0	Pulmonary cryptococcosis
B45.1	Cerebral cryptococcosis
B45.2	Cutaneous cryptococcosis
B45.3	Osseous cryptococcosis
B45.7	Disseminated cryptococcosis
B45.8	Other forms of cryptococcosis
B45.9	Cryptococcosis, unspecified
B46.0	Pulmonary mucormycosis
B46.1	Rhinocerebral mucormycosis
B46.2	Gastrointestinal mucormycosis
B46.3	Cutaneous mucormycosis
B46.4	Disseminated mucormycosis
B46.5	Mucormycosis, unspecified
B46.8	Other zygomycoses
B46.9	Zygomycosis, unspecified
B48.7	Opportunistic mycoses
B50.0	Plasmodium falciparum malaria with cerebral complications
B51.0	Plasmodium vivax malaria with rupture of spleen
B52.0	Plasmodium malariae malaria with nephropathy
B55.0	Visceral leishmaniasis
B55.1	Cutaneous leishmaniasis
B55.2	Mucocutaneous leishmaniasis
B55.9	Leishmaniasis, unspecified
B57.2	Chagas disease (chronic) with heart involvement
B57.3	Chagas disease (chronic) with digestive system involvement
B57.4	Chagas disease (chronic) with nervous system involvement
B57.5	Chagas disease (chronic) with other organ involvement
B58.0	Toxoplasma oculopathy

ICD-10 Code	Description
B59	Pneumocystosis
B67.0	Echinococcus granulosus infection of liver
B67.1	Echinococcus granulosus infection of lung
B67.2	Echinococcus granulosus infection of bone
B67.3	Echinococcus granulosus infection, other and multiple sites
B67.4	Echinococcus granulosus infection, unspecified
B67.5	Echinococcus multilocularis infection of liver
B67.6	Echinococcus multilocularis infection, other and multiple sites
B67.7	Echinococcus multilocularis infection, unspecified
B67.8	Echinococcosis, unspecified, of liver
B67.9	Echinococcosis, other and unspecified
B69.0	Cysticercosis of central nervous system
B69.1	Cysticercosis of eye
B69.8	Cysticercosis of other sites
B69.9	Cysticercosis, unspecified
B73	Onchocerciasis
B74.0	Filariasis due to Wuchereria bancrofti
B74.1	Filariasis due to Brugia malayi
B74.2	Filariasis due to Brugia timori
B74.3	Loiasis
B74.4	Mansonelliasis
B74.8	Other filariases
B74.9	Filariasis, unspecified
B78.7	Disseminated strongyloidiasis
B90.0	Sequelae of central nervous system tuberculosis
B90.1	Sequelae of genitourinary tuberculosis
B90.2	Sequelae of tuberculosis of bones and joints
B90.8	Sequelae of tuberculosis of other organs
B90.9	Sequelae of respiratory and unspecified tuberculosis
B91	Sequelae of poliomyelitis
B92	Sequelae of leprosy
B94.0	Sequelae of trachoma
B94.1	Sequelae of viral encephalitis
B94.2	Sequelae of viral hepatitis
B94.8	Sequelae of other specified infectious and parasitic diseases
B94.9	Sequelae of unspecified infectious or parasitic disease
D00.0	Carcinoma in situ: Lip, oral cavity and pharynx
D00.1	Carcinoma in situ: Oesophagus
D00.2	Carcinoma in situ: Stomach
D01.0	Carcinoma in situ: Colon
D01.1	Carcinoma in situ: Rectosigmoid junction
D01.2	Carcinoma in situ: Rectum
D01.3	Carcinoma in situ: Anus and anal canal
D01.4	Carcinoma in situ: Other and unspecified parts of intestine
D01.5	Carcinoma in situ: Liver, gallbladder and bile ducts
D01.7	Carcinoma in situ: Other specified digestive organs
D01.9	Carcinoma in situ: Digestive organ, unspecified

ICD-10 Code	Description
D02.0	Carcinoma in situ: Larynx
D02.1	Carcinoma in situ: Trachea
D02.2	Carcinoma in situ: Bronchus and lung
D02.3	Carcinoma in situ: Other parts of respiratory system
D02.4	Carcinoma in situ: Respiratory system, unspecified
D05.0	Lobular carcinoma in situ
D05.1	Intraductal carcinoma in situ
D05.7	Other carcinoma in situ of breast
D05.9	Carcinoma in situ of breast, unspecified
D06.0	Carcinoma in situ: Endocervix
D06.1	Carcinoma in situ: Exocervix
D06.7	Carcinoma in situ: Other parts of cervix
D06.9	Carcinoma in situ: Cervix, unspecified
D07.0	Carcinoma in situ: Endometrium
D07.1	Carcinoma in situ: Vulva
D07.2	Carcinoma in situ: Vagina
D07.3	Carcinoma in situ: Other and unspecified female genital organs
D07.4	Carcinoma in situ: Penis
D07.5	Carcinoma in situ: Prostate
D07.6	Carcinoma in situ: Other and unspecified male genital organs
D09.0	Carcinoma in situ: Bladder
D09.1	Carcinoma in situ: Other and unspecified urinary organs
D09.2	Carcinoma in situ: Eye
D09.3	Carcinoma in situ: Thyroid and other endocrine glands
D09.7	Carcinoma in situ of other specified sites
D09.9	Carcinoma in situ, unspecified
D12.0	Benign neoplasm: Caecum
D12.1	Benign neoplasm: Appendix
D12.2	Benign neoplasm: Ascending colon
D12.3	Benign neoplasm: Transverse colon
D12.4	Benign neoplasm: Descending colon
D12.5	Benign neoplasm: Sigmoid colon
D12.6	Benign neoplasm: Colon, unspecified
D12.7	Benign neoplasm: Rectosigmoid junction
D12.8	Benign neoplasm: Rectum
D12.9	Benign neoplasm: Anus and anal canal
D13.0	Benign neoplasm: Oesophagus
D13.1	Benign neoplasm: Stomach
D13.2	Benign neoplasm: Duodenum
D13.3	Benign neoplasm: Other and unspecified parts of small intestine
D13.4	Benign neoplasm: Liver
D13.5	Benign neoplasm: Extrahepatic bile ducts
D13.6	Benign neoplasm: Pancreas
D13.7	Benign neoplasm: Endocrine pancreas
D13.9	Benign neoplasm: Ill-defined sites within the digestive system
D14.1	Benign neoplasm: Larynx
D14.2	Benign neoplasm: Trachea

ICD-10 Code	Description
D14.3	Benign neoplasm: Bronchus and lung
D14.4	Benign neoplasm: Respiratory system, unspecified
D15.0	Benign neoplasm: Thymus
D15.2	Benign neoplasm: Mediastinum
D15.7	Benign neoplasm: Other specified intrathoracic organs
D15.9	Benign neoplasm: Intrathoracic organ, unspecified
D15.1	Benign neoplasm: Heart
D20.0	Benign neoplasm: Retroperitoneum
D20.1	Benign neoplasm: Peritoneum
D32.0	Benign neoplasm: Cerebral meninges
D32.1	Benign neoplasm: Spinal meninges
D34	Benign neoplasm of thyroid gland
D35.0	Benign neoplasm: Adrenal gland
D35.1	Benign neoplasm: Parathyroid gland
D35.2	Benign neoplasm: Pituitary gland
D35.3	Benign neoplasm: Craniopharyngeal duct
D35.4	Benign neoplasm: Pineal gland
D35.5	Benign neoplasm: Carotid body
D35.6	Benign neoplasm: Aortic body and other paraganglia
D35.7	Benign neoplasm: Other specified endocrine glands
D35.8	Benign neoplasm: Pluriglandular involvement
D35.9	Benign neoplasm: Endocrine gland, unspecified
D37.0	Neoplasm of uncertain or unknown behaviour: Lip, oral cavity and pharynx
D37.1	Neoplasm of uncertain or unknown behaviour: Stomach
D37.2	Neoplasm of uncertain or unknown behaviour: Small intestine
D37.3	Neoplasm of uncertain or unknown behaviour: Appendix
D37.4	Neoplasm of uncertain or unknown behaviour: Colon
D37.5	Neoplasm of uncertain or unknown behaviour: Rectum
D37.6	Neoplasm of uncertain or unknown behaviour: Liver, gallbladder and bile ducts
D37.7	Neoplasm of uncertain or unknown behaviour: Other digestive organs
D37.9	Neoplasm of uncertain or unknown behaviour: Digestive organ, unspecified
D38.0	Neoplasm of uncertain or unknown behaviour: Larynx
D38.1	Neoplasm of uncertain or unknown behaviour: Trachea, bronchus and lung
D38.2	Neoplasm of uncertain or unknown behaviour: Pleura
D38.3	Neoplasm of uncertain or unknown behaviour: Mediastinum
D38.4	Neoplasm of uncertain or unknown behaviour: Thymus
D38.5	Neoplasm of uncertain or unknown behaviour: Other respiratory organs
D38.6	Neoplasm of uncertain or unknown behaviour: Respiratory organ, unspecified
D39.0	Neoplasm of uncertain or unknown behaviour: Uterus
D39.1	Neoplasm of uncertain or unknown behaviour: Ovary
D39.2	Neoplasm of uncertain or unknown behaviour: Placenta
D39.7	Neoplasm of uncertain or unknown behaviour: Other female genital organs
D39.9	Neoplasm of uncertain or unknown behaviour: Female genital organ, unspecified
D40.0	Neoplasm of uncertain or unknown behaviour: Prostate
D40.1	Neoplasm of uncertain or unknown behaviour: Testis
D40.7	Neoplasm of uncertain or unknown behaviour: Other male genital organs
D40.9	Neoplasm of uncertain or unknown behaviour: Male genital organ, unspecified

ICD-10 Code	Description
D41.0	Neoplasm of uncertain or unknown behaviour: Kidney
D41.1	Neoplasm of uncertain or unknown behaviour: Renal pelvis
D41.2	Neoplasm of uncertain or unknown behaviour: Ureter
D41.3	Neoplasm of uncertain or unknown behaviour: Urethra
D41.4	Neoplasm of uncertain or unknown behaviour: Bladder
D41.7	Neoplasm of uncertain or unknown behaviour: Other urinary organs
D41.9	Neoplasm of uncertain or unknown behaviour: Urinary organ, unspecified
D42.0	Neoplasm of uncertain or unknown behaviour: Cerebral meninges
D42.1	Neoplasm of uncertain or unknown behaviour: Spinal meninges
D42.9	Neoplasm of uncertain or unknown behaviour: Meninges, unspecified
D44.0	Neoplasm of uncertain or unknown behaviour: Thyroid gland
D44.1	Neoplasm of uncertain or unknown behaviour: Adrenal gland
D44.2	Neoplasm of uncertain or unknown behaviour: Parathyroid gland
D44.3	Neoplasm of uncertain or unknown behaviour: Pituitary gland
D44.5	Neoplasm of uncertain or unknown behaviour: Pineal gland
D44.7	Neoplasm of uncertain or unknown behaviour: Aortic body and other paraganglia
D44.8	Neoplasm of uncertain or unknown behaviour: Pluriglandular involvement
D44.9	Neoplasm of uncertain or unknown behaviour: Endocrine gland, unspecified
D45	Polycythaemia vera
D46.0	Refractory anaemia without ring sideroblasts, so stated
D46.1	Refractory anaemia with ring sideroblasts
D46.2	Refractory anaemia with excess of blasts
D46.4	Refractory anaemia, unspecified
D46.5	Refractory anaemia with multi-lineage dysplasia
D46.6	Myelodysplastic syndrome with isolated del(5q) chromosomal abnormality
D46.7	Other myelodysplastic syndromes
D46.9	Myelodysplastic syndrome, unspecified
D47.0	Histiocytic and mast cell tumours of uncertain and unknown behaviour
D47.1	Chronic myeloproliferative disease
D47.2	Monoclonal gammopathy of undetermined significance (MGUS)
D47.3	Essential (haemorrhagic) thrombocythaemia
D47.4	Osteomyelofibrosis
D47.5	Chronic eosinophilic leukaemia [hypereosinophilic syndrome]
D47.7	Other specified neoplasms of uncertain or unknown behaviour of lymphoid, haematopoietic and related tissue
D47.9	Neoplasm of uncertain or unknown behaviour of lymphoid, haematopoietic and related tissue, unspecified
D55.0	Anaemia due to glucose-6-phosphate dehydrogenase [G6PD] deficiency
D55.1	Anaemia due to other disorders of glutathione metabolism
D55.2	Anaemia due to disorders of glycolytic enzymes
D55.3	Anaemia due to disorders of nucleotide metabolism
D55.8	Other anaemias due to enzyme disorders
D55.9	Anaemia due to enzyme disorder, unspecified
D56.0	Alpha thalassaemia
D56.2	Delta-beta thalassaemia
D56.4	Hereditary persistence of fetal haemoglobin [HPFH]
D56.8	Other thalassaemias

ICD-10 Code	Description
D56.9	Thalassaemia, unspecified
D57.0	Sickle-cell anaemia with crisis
D57.1	Sickle-cell anaemia without crisis
D57.2	Double heterozygous sickling disorders
D57.8	Other sickle-cell disorders
D58.0	Hereditary spherocytosis
D58.1	Hereditary elliptocytosis
D58.2	Other haemoglobinopathies
D58.8	Other specified hereditary haemolytic anaemias
D58.9	Hereditary haemolytic anaemia, unspecified
D63.0	Anaemia in neoplastic disease
D63.8	Anaemia in other chronic diseases classified elsewhere
D66	Hereditary factor VIII deficiency
D68.0	Von Willebrand disease
D68.1	Hereditary factor XI deficiency
D68.2	Hereditary deficiency of other clotting factors
D68.4	Acquired coagulation factor deficiency
D68.5	Primary Thrombophilia
D68.6	Other Thrombophilia
D68.8	Other specified coagulation defects
D68.9	Coagulation defect, unspecified
D69.0	Allergic purpura
D69.1	Qualitative platelet defects
D69.2	Other nonthrombocytopenic purpura
D69.3	Idiopathic thrombocytopenic purpura
D69.4	Other primary thrombocytopenia
D69.5	Secondary thrombocytopenia
D69.6	Thrombocytopenia, unspecified
D69.8	Other specified haemorrhagic conditions
D69.9	Haemorrhagic condition, unspecified
D71	Functional disorders of polymorphonuclear neutrophils
D72.0	Genetic anomalies of leukocytes
D72.1	Eosinophilia
D72.8	Other specified disorders of white blood cells
D72.9	Disorder of white blood cells, unspecified
D73.0	Hyposplenism
D73.1	Hypersplenism
D73.2	Chronic congestive splenomegaly
D73.3	Abscess of spleen
D73.4	Cyst of spleen
D73.5	Infarction of spleen
D73.8	Other diseases of spleen
D73.9	Disease of spleen, unspecified
D74.0	Congenital methaemoglobinaemia
D74.8	Other methaemoglobinaemias
D74.9	Methaemoglobinaemia, unspecified
D75.0	Familial erythrocytosis

ICD-10 Code	Description
D75.1	Secondary polycythaemia
D75.8	Other specified diseases of blood and blood-forming organs
D75.9	Disease of blood and blood-forming organs, unspecified
D76.1	Haemophagocytic lymphohistiocytosis
D76.2	Haemophagocytic syndrome, infection-associated
D76.3	Other histiocytosis syndromes
D80.0	Hereditary hypogammaglobulinaemia
D80.1	Nonfamilial hypogammaglobulinaemia
D80.2	Selective deficiency of immunoglobulin A [IgA]
D80.3	Selective deficiency of immunoglobulin G [IgG] subclasses
D80.4	Selective deficiency of immunoglobulin M [IgM]
D80.8	Other immunodeficiencies with predominantly antibody defects
D80.9	Immunodeficiency with predominantly antibody defects, unspecified
D82.0	Wiskott-Aldrich syndrome
D82.2	Immunodeficiency with short-limbed stature
D82.3	Immunodeficiency following hereditary defective response to Epstein-Barr virus
D82.4	Hyperimmunoglobulin E [IgE] syndrome
D82.5	
D82.6	
D82.7	
D82.8	Immunodeficiency associated with other specified major defects
D82.9	Immunodeficiency associated with major defect, unspecified
D84.0	Lymphocyte function antigen-1 [LFA-1] defect
D84.1	Defects in the complement system
D84.8	Other specified immunodeficiencies
D84.9	Immunodeficiency, unspecified
E00.0	Congenital iodine-deficiency syndrome, neurological type
E00.1	Congenital iodine-deficiency syndrome, myxoedematous type
E00.2	Congenital iodine-deficiency syndrome, mixed type
E00.9	Congenital iodine-deficiency syndrome, unspecified
E03.0	Congenital hypothyroidism with diffuse goitre
E03.1	Congenital hypothyroidism without goitre
E07.1	Dyshormogenetic goitre
E10	Type 1 diabetes mellitus
E11	Type 2 diabetes mellitus
E12	Malnutrition-related diabetes mellitus
E13	Other specified diabetes mellitus
E14	Unspecified diabetes mellitus
E22.0	Acromegaly and pituitary gigantism
E23.0	Hypopituitarism
E24.4	Alcohol-induced pseudo-Cushing syndrome
E25.0	Congenital adrenogenital disorders associated with enzyme deficiency
E25.8	Other adrenogenital disorders
E25.9	Adrenogenital disorder, unspecified
E26.8	Other hyperaldosteronism
E29.1	Testicular hypofunction
E31.1	Polyglandular hyperfunction

ICD-10 Code	Description
E31.8	Other polyglandular dysfunction
E31.9	Polyglandular dysfunction, unspecified
E34.0	Carcinoid syndrome
E34.1	Other hypersecretion of intestinal hormones
E34.2	Ectopic hormone secretion, not elsewhere classified
E34.5	Androgen resistance syndrome
E35.0	Disorders of thyroid gland in diseases classified elsewhere
E66.0	Obesity due to excess calories
E66.1	Drug-induced obesity
E66.2	Extreme obesity with alveolar hypoventilation
E66.8	Other obesity
E66.9	Obesity, unspecified
E70.0	Classical phenylketonuria
E70.3	Albinism
E70.8	Other disorders of aromatic amino-acid metabolism
E70.9	Disorder of aromatic amino-acid metabolism, unspecified
E78.0	Pure hypercholesterolaemia
E78.1	Pure hyperglyceridaemia
E78.2	Mixed hyperlipidaemia
E78.3	Hyperchylomicronaemia
E78.4	Other hyperlipidaemia
E78.5	Hyperlipidaemia, unspecified
E78.6	Lipoprotein deficiency
E78.8	Other disorders of lipoprotein metabolism
E78.9	Disorder of lipoprotein metabolism, unspecified
E79.8	Other disorders of purine and pyrimidine metabolism
E79.9	Disorder of purine and pyrimidine metabolism, unspecified
E80.0	Hereditary erythropoietic porphyria
E80.1	Porphyria cutanea tarda
E80.2	Other porphyria
E80.3	Defects of catalase and peroxidase
E80.5	Crigler-Najjar syndrome
E80.7	Disorder of bilirubin metabolism, unspecified
E83.1	Disorders of iron metabolism
E83.2	Disorders of zinc metabolism
E83.3	Disorders of phosphorus metabolism and phosphatases
E83.4	Disorders of magnesium metabolism
E83.5	Disorders of calcium metabolism
E83.8	Other disorders of mineral metabolism
E83.9	Disorder of mineral metabolism, unspecified
E85.0	Non-neuropathic heredofamilial amyloidosis
E85.1	Neuropathic heredofamilial amyloidosis
E85.2	Heredofamilial amyloidosis, unspecified
E85.3	Secondary systemic amyloidosis
E85.4	Organ-limited amyloidosis
E85.8	Other amyloidosis
E85.9	Amyloidosis, unspecified

ICD-10 Code	Description
E88.2	Lipomatosis, not elsewhere classified
E88.3	Tumour lysis syndrome
E88.8	Other specified metabolic disorders
E88.9	Metabolic disorder, unspecified
F00.0	Dementia in Alzheimer disease with early onset
F00.1	Dementia in Alzheimer disease with late onset
F00.2	Dementia in Alzheimer disease, atypical or mixed type
F00.9	Dementia in Alzheimer disease, unspecified
F01.0	Vascular dementia of acute onset
F01.1	Multi-infarct dementia
F01.2	Subcortical vascular dementia
F01.3	Mixed cortical and subcortical vascular dementia
F01.8	Other vascular dementia
F01.9	Vascular dementia, unspecified
F02.1	Dementia in Creutzfeldt-Jakob disease
F02.2	Dementia in Huntington disease
F02.3	Dementia in Parkinson disease
F02.4	Dementia in human immunodeficiency virus [HIV] disease
F02.8	Dementia in other specified diseases classified elsewhere
F03	Unspecified dementia
F04	Organic amnesic syndrome, not induced by alcohol and other psychoactive substances
F05.0	Delirium not superimposed on dementia, so described
F05.1	Delirium superimposed on dementia
F05.8	Other delirium
F05.9	Delirium, unspecified
F06.0	Organic hallucinosis
F06.1	Organic catatonic disorder
F06.2	Organic delusional [schizophrenia-like] disorder
F06.5	Organic dissociative disorder
F06.6	Organic emotionally labile [asthenic] disorder
F06.7	Mild cognitive disorder
F06.8	Other specified mental disorders due to brain damage and dysfunction and to physical disease
F07.0	Organic personality disorder
F07.1	Postencephalitic syndrome
F07.2	Postconcussional syndrome
F07.8	Other organic personality and behavioural disorders due to brain disease, damage and dysfunction
F07.9	Unspecified organic personality and behavioural disorder due to brain disease, damage and dysfunction
F09	Unspecified organic or symptomatic mental disorder
F10	Mental and behavioural disorders due to use of alcohol
F11	Mental and behavioural disorders due to use of opioids
F12	Mental and behavioural disorders due to use of cannabinoids
F13	Mental and behavioural disorders due to use of sedatives or hypnotics
F14	Mental and behavioural disorders due to use of cocaine
F15	Mental and behavioural disorders due to use of other stimulants, including caffeine

ICD-10 Code	Description
F16	Mental and behavioural disorders due to use of hallucinogens
F17	Mental and behavioural disorders due to use of tobacco
F18	Mental and behavioural disorders due to use of volatile solvents
F19	Mental and behavioural disorders due to multiple drug use and use of other psychoactive substances
F20.0	Paranoid schizophrenia
F20.1	Hebephrenic schizophrenia
F20.2	Catatonic schizophrenia
F20.3	Undifferentiated schizophrenia
F20.4	Post-schizophrenic depression
F20.5	Residual schizophrenia
F20.6	Simple schizophrenia
F20.8	Other schizophrenia
F20.9	Schizophrenia, unspecified
F21	Schizotypal disorder
F22.0	Delusional disorder
F22.8	Other persistent delusional disorders
F22.9	Persistent delusional disorder, unspecified
F23.0	Acute polymorphic psychotic disorder without symptoms of schizophrenia
F23.1	Acute polymorphic psychotic disorder with symptoms of schizophrenia
F23.2	Acute schizophrenia-like psychotic disorder
F23.3	Other acute predominantly delusional psychotic disorders
F23.8	Other acute and transient psychotic disorders
F23.9	Acute and transient psychotic disorder, unspecified
F24	Induced delusional disorder
F25.0	Schizoaffective disorder, manic type
F25.1	Schizoaffective disorder, depressive type
F25.2	Schizoaffective disorder, mixed type
F25.8	Other schizoaffective disorders
F25.9	Schizoaffective disorder, unspecified
F28	Other nonorganic psychotic disorders
F29	Unspecified nonorganic psychosis
F30.0	Hypomania
F30.1	Mania without psychotic symptoms
F30.2	Mania with psychotic symptoms
F30.8	Other manic episodes
F30.9	Manic episode, unspecified
F31.0	Bipolar affective disorder, current episode hypomanic
F31.1	Bipolar affective disorder, current episode manic without psychotic symptoms
F31.2	Bipolar affective disorder, current episode manic with psychotic symptoms
F31.3	Bipolar affective disorder, current episode mild or moderate depression
F31.4	Bipolar affective disorder, current episode severe depression without psychotic symptoms
F31.5	Bipolar affective disorder, current episode severe depression with psychotic symptoms
F31.6	Bipolar affective disorder, current episode mixed
F31.7	Bipolar affective disorder, currently in remission
F31.8	Other bipolar affective disorders

ICD-10 Code	Description
F31.9	Bipolar affective disorder, unspecified
F42.0	Predominantly obsessional thoughts or ruminations
F42.1	Predominantly compulsive acts [obsessional rituals]
F42.2	Mixed obsessional thoughts and acts
F42.8	Other obsessive-compulsive disorders
F42.9	Obsessive-compulsive disorder, unspecified
F43.0	Acute stress reaction
F43.1	Post-traumatic stress disorder
F43.2	Adjustment disorders
F43.8	Other reactions to severe stress
F43.9	Reaction to severe stress, unspecified
F44.0	Dissociative amnesia
F44.1	Dissociative fugue
F44.2	Dissociative stupor
F44.3	Trance and possession disorders
F44.4	Dissociative motor disorders
F44.5	Dissociative convulsions
F44.6	Dissociative anaesthesia and sensory loss
F44.7	Mixed dissociative [conversion] disorders
F44.8	Other dissociative [conversion] disorders
F44.9	Dissociative [conversion] disorder, unspecified
F45.0	Somatization disorder
F45.1	Undifferentiated somatoform disorder
F45.2	Hypochondriacal disorder
F45.3	Somatoform autonomic dysfunction
F45.4	Persistent somatoform pain disorder
F45.8	Other somatoform disorders
F45.9	Somatoform disorder, unspecified
F48.1	Depersonalization-derealization syndrome
F48.8	Other specified neurotic disorders
F48.9	Neurotic disorder, unspecified
F50.0	Anorexia nervosa
F50.1	Atypical anorexia nervosa
F50.2	Bulimia nervosa
F50.3	Atypical bulimia nervosa
F50.4	Overeating associated with other psychological disturbances
F50.5	Vomiting associated with other psychological disturbances
F50.8	Other eating disorders
F50.9	Eating disorder, unspecified
F53.0	Mild mental and behavioural disorders associated with the puerperium, not elsewhere classified
F53.1	Severe mental and behavioural disorders associated with the puerperium, not elsewhere classified
F53.8	Other mental and behavioural disorders associated with the puerperium, not elsewhere classified
F53.9	Puerperal mental disorder, unspecified
F54	Psychological and behavioural factors associated with disorders or diseases classified elsewhere

ICD-10 Code	Description
F70	Mild mental retardation
F71	Moderate mental retardation
F72	Severe mental retardation
F73	Profound mental retardation
F78	Other mental retardation
F79	Unspecified mental retardation
F80.0	Specific speech articulation disorder
F80.1	Expressive language disorder
F80.2	Receptive language disorder
F80.8	Other developmental disorders of speech and language
F80.9	Developmental disorder of speech and language, unspecified
F82	Specific developmental disorder of motor function
F83	Mixed specific developmental disorders
F84.1	Atypical autism
F84.3	Other childhood disintegrative disorder
F84.4	Overactive disorder associated with mental retardation and stereotyped movements
F84.5	Asperger syndrome
F84.6	
F84.8	Other pervasive developmental disorders
F84.9	Pervasive developmental disorder, unspecified
F88	Other disorders of psychological development
F89	Unspecified disorder of psychological development
F90.0	Disturbance of activity and attention
F90.1	Hyperkinetic conduct disorder
F90.8	Other hyperkinetic disorders
F90.9	Hyperkinetic disorder, unspecified
F91.0	Conduct disorder confined to the family context
F91.1	Unsocialized conduct disorder
F91.2	Socialized conduct disorder
F91.3	Oppositional defiant disorder
F91.8	Other conduct disorders
F91.9	Conduct disorder, unspecified
F92.0	Depressive conduct disorder
F92.8	Other mixed disorders of conduct and emotions
F92.9	Mixed disorder of conduct and emotions, unspecified
F93.3	Sibling rivalry disorder
F93.8	Other childhood emotional disorders
F93.9	Childhood emotional disorder, unspecified
F94.0	Elective mutism
F94.1	Reactive attachment disorder of childhood
F94.2	Disinhibited attachment disorder of childhood
F94.8	Other childhood disorders of social functioning
F94.9	Childhood disorder of social functioning, unspecified
F95.0	Transient tic disorder
F95.1	Chronic motor or vocal tic disorder
F95.2	Combined vocal and multiple motor tic disorder [de la Tourette]
F95.8	Other tic disorders

ICD-10 Code	Description
F95.9	Tic disorder, unspecified
F98.0	Nonorganic enuresis
F98.1	Nonorganic encopresis
F98.2	Feeding disorder of infancy and childhood
F98.3	Pica of infancy and childhood
F98.4	Stereotyped movement disorders
F98.5	Stuttering [stammering]
F98.6	Cluttering
F98.8	Other specified behavioural and emotional disorders with onset usually occurring in childhood and adolescence
F98.9	Unspecified behavioural and emotional disorders with onset usually occurring in childhood and adolescence
G00.0	Haemophilus meningitis
G00.1	Pneumococcal meningitis
G00.2	Streptococcal meningitis
G00.3	Staphylococcal meningitis
G00.8	Other bacterial meningitis
G00.9	Bacterial meningitis, unspecified
G01	Meningitis in bacterial diseases classified elsewhere
G02.0	Meningitis in viral diseases classified elsewhere
G02.1	Meningitis in mycoses
G02.8	Meningitis in other specified infectious and parasitic diseases classified elsewhere
G03.0	Nonpyogenic meningitis
G03.1	Chronic meningitis
G03.2	Benign recurrent meningitis [Mollaret]
G03.8	Meningitis due to other specified causes
G03.9	Meningitis, unspecified
G04.0	Acute disseminated encephalitis
G04.1	Tropical spastic paraplegia
G04.2	Bacterial meningoencephalitis and meningomyelitis, not elsewhere classified
G04.8	Other encephalitis, myelitis and encephalomyelitis
G04.9	Encephalitis, myelitis and encephalomyelitis, unspecified
G05.0	Encephalitis, myelitis and encephalomyelitis in bacterial diseases classified elsewhere
G05.1	Encephalitis, myelitis and encephalomyelitis in viral diseases classified elsewhere
G05.2	Encephalitis, myelitis and encephalomyelitis in other infectious and parasitic diseases classified elsewhere
G05.8	Encephalitis, myelitis and encephalomyelitis in other diseases classified elsewhere
G06.0	Intracranial abscess and granuloma
G06.1	Intraspinal abscess and granuloma
G06.2	Extradural and subdural abscess, unspecified
G07	Intracranial and intraspinal abscess and granuloma in diseases classified elsewhere
G08	Intracranial and intraspinal phlebitis and thrombophlebitis
G09	Sequelae of inflammatory diseases of central nervous system
G11.0	Congenital nonprogressive ataxia
G11.4	Hereditary spastic paraplegia
G11.8	Other hereditary ataxias
G11.9	Hereditary ataxia, unspecified
G13.0	Paraneoplastic neuromyopathy and neuropathy

ICD-10 Code	Description
G13.1	Other systemic atrophy primarily affecting central nervous system in neoplastic disease
G13.2	Systemic atrophy primarily affecting central nervous system in myxoedema
G13.8	Systemic atrophy primarily affecting central nervous system in other diseases classified elsewhere
G14	Postpolio syndrome
G21.0	Malignant neuroleptic syndrome
G21.1	Other drug-induced secondary parkinsonism
G21.2	Secondary parkinsonism due to other external agents
G21.3	Postencephalitic parkinsonism
G21.4	Vascular parkinsonism
G21.8	Other secondary parkinsonism
G21.9	Secondary parkinsonism, unspecified
G22	Parkinsonism in diseases classified elsewhere
G23.1	Progressive supranuclear ophthalmoplegia [Steele-Richardson-Olszewski]
G23.2	Striatonigral degeneration
G23.3	Multiple system atrophy, cerebellar type [MSA-C]
G23.9	Degenerative disease of basal ganglia, unspecified
G24.1	Idiopathic familial dystonia
G24.2	Idiopathic nonfamilial dystonia
G24.3	Spasmodic torticollis
G24.4	Idiopathic orofacial dystonia
G24.5	Blepharospasm
G24.8	Other dystonia
G24.9	Dystonia, unspecified
G25.0	Essential tremor
G25.1	Drug-induced tremor
G25.2	Other specified forms of tremor
G25.3	Myoclonus
G25.4	Drug-induced chorea
G25.5	Other chorea
G25.6	Drug-induced tics and other tics of organic origin
G25.8	Other specified extrapyramidal and movement disorders
G25.9	Extrapyramidal and movement disorder, unspecified
G26	Extrapyramidal and movement disorders in diseases classified elsewhere
G30.0	Alzheimer disease with early onset
G30.1	Alzheimer disease with late onset
G30.8	Other Alzheimer disease
G30.9	Alzheimer disease, unspecified
G31.0	Circumscribed brain atrophy
G31.1	Senile degeneration of brain, not elsewhere classified
G31.2	Degeneration of nervous system due to alcohol
G32.0	Subacute combined degeneration of spinal cord in diseases classified elsewhere
G32.8	Other specified degenerative disorders of nervous system in diseases classified elsewhere
G36.0	Neuromyelitis optica [Devic]
G36.1	Acute and subacute haemorrhagic leukoencephalitis [Hurst]
G36.8	Other specified acute disseminated demyelination

ICD-10 Code	Description
G36.9	Acute disseminated demyelination, unspecified
G37.0	Diffuse sclerosis
G37.1	Central demyelination of corpus callosum
G37.2	Central pontine myelinolysis
G37.3	Acute transverse myelitis in demyelinating disease of central nervous system
G37.4	Subacute necrotizing myelitis
G37.5	Concentric sclerosis [Baló]
G37.8	Other specified demyelinating diseases of central nervous system
G37.9	Demyelinating disease of central nervous system, unspecified
G40.0	Localization-related (focal)(partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset
G40.1	Localization-related (focal)(partial) symptomatic epilepsy and epileptic syndromes with simple partial seizures
G40.2	Localization-related (focal)(partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures
G40.3	Generalized idiopathic epilepsy and epileptic syndromes
G40.6	Grand mal seizures, unspecified (with or without petit mal)
G40.7	Petit mal, unspecified, without grand mal seizures
G40.8	Other epilepsy
G40.9	Epilepsy, unspecified
G41.0	Grand mal status epilepticus
G41.1	Petit mal status epilepticus
G41.2	Complex partial status epilepticus
G41.8	Other status epilepticus
G41.9	Status epilepticus, unspecified
G43.0	Migraine without aura [common migraine]
G43.1	Migraine with aura [classical migraine]
G43.2	Status migrainosus
G43.3	Complicated migraine
G43.8	Other migraine
G43.9	Migraine, unspecified
G44.0	Cluster headache syndrome
G44.1	Vascular headache, not elsewhere classified
G44.2	Tension-type headache
G44.3	Chronic post-traumatic headache
G44.4	Drug-induced headache, not elsewhere classified
G44.8	Other specified headache syndromes
G45.0	Vertebro-basilar artery syndrome
G45.1	Carotid artery syndrome (hemispheric)
G45.2	Multiple and bilateral precerebral artery syndromes
G45.3	Amaurosis fugax
G45.4	Transient global amnesia
G45.8	Other transient cerebral ischaemic attacks and related syndromes
G45.9	Transient cerebral ischaemic attack, unspecified
G46.0	Middle cerebral artery syndrome
G46.1	Anterior cerebral artery syndrome
G46.2	Posterior cerebral artery syndrome
G46.3	Brain stem stroke syndrome

ICD-10 Code	Description
G46.4	Cerebellar stroke syndrome
G46.5	Pure motor lacunar syndrome
G46.6	Pure sensory lacunar syndrome
G46.7	Other lacunar syndromes
G46.8	Other vascular syndromes of brain in cerebrovascular diseases
G47.0	Disorders of initiating and maintaining sleep [insomnias]
G47.1	Disorders of excessive somnolence [hypersomnias]
G47.2	Disorders of the sleep-wake schedule
G47.3	Sleep apnoea
G47.4	Narcolepsy and cataplexy
G47.8	Other sleep disorders
G47.9	Sleep disorder, unspecified
G50.0	Trigeminal neuralgia
G50.1	Atypical facial pain
G50.8	Other disorders of trigeminal nerve
G50.9	Disorder of trigeminal nerve, unspecified
G51.0	Bell palsy
G51.1	Geniculate ganglionitis
G51.2	Melkersson syndrome
G51.3	Clonic hemifacial spasm
G51.4	Facial myokymia
G51.8	Other disorders of facial nerve
G51.9	Disorder of facial nerve, unspecified
G52.0	Disorders of olfactory nerve
G52.1	Disorders of glossopharyngeal nerve
G52.2	Disorders of vagus nerve
G52.3	Disorders of hypoglossal nerve
G52.7	Disorders of multiple cranial nerves
G52.8	Disorders of other specified cranial nerves
G52.9	Cranial nerve disorder, unspecified
G53.0	Postzoster neuralgia
G53.1	Multiple cranial nerve palsies in infectious and parasitic diseases classified elsewhere
G53.2	Multiple cranial nerve palsies in sarcoidosis
G53.3	Multiple cranial nerve palsies in neoplastic disease
G53.8	Other cranial nerve disorders in other diseases classified elsewhere
G54.0	Brachial plexus disorders
G54.1	Lumbosacral plexus disorders
G54.2	Cervical root disorders, not elsewhere classified
G54.3	Thoracic root disorders, not elsewhere classified
G54.4	Lumbosacral root disorders, not elsewhere classified
G54.5	Neuralgic amyotrophy
G54.6	Phantom limb syndrome with pain
G54.7	Phantom limb syndrome without pain
G54.8	Other nerve root and plexus disorders
G54.9	Nerve root and plexus disorder, unspecified
G55.0	Nerve root and plexus compressions in neoplastic disease
G55.1	Nerve root and plexus compressions in intervertebral disc disorders

ICD-10 Code	Description
G55.2	Nerve root and plexus compressions in spondylosis
G55.3	Nerve root and plexus compressions in other dorsopathies
G55.8	Nerve root and plexus compressions in other diseases classified elsewhere
G56.0	Carpal tunnel syndrome
G56.1	Other lesions of median nerve
G56.2	Lesion of ulnar nerve
G56.3	Lesion of radial nerve
G56.4	Causalgia
G56.8	Other mononeuropathies of upper limb
G56.9	Mononeuropathy of upper limb, unspecified
G57.0	Lesion of sciatic nerve
G57.1	Meralgia paraesthetica
G57.2	Lesion of femoral nerve
G57.3	Lesion of lateral popliteal nerve
G57.4	Lesion of medial popliteal nerve
G57.5	Tarsal tunnel syndrome
G57.6	Lesion of plantar nerve
G57.8	Other mononeuropathies of lower limb
G57.9	Mononeuropathy of lower limb, unspecified
G58.0	Intercostal neuropathy
G58.7	Mononeuritis multiplex
G58.8	Other specified mononeuropathies
G58.9	Mononeuropathy, unspecified
G59.0	Diabetic mononeuropathy
G59.8	Other mononeuropathies in diseases classified elsewhere
G60.2	Neuropathy in association with hereditary ataxia
G60.3	Idiopathic progressive neuropathy
G60.8	Other hereditary and idiopathic neuropathies
G60.9	Hereditary and idiopathic neuropathy, unspecified
G61.0	Guillain-Barré syndrome
G61.1	Serum neuropathy
G61.8	Other inflammatory polyneuropathies
G61.9	Inflammatory polyneuropathy, unspecified
G62.0	Drug-induced polyneuropathy
G62.1	Alcoholic polyneuropathy
G62.2	Polyneuropathy due to other toxic agents
G62.8	Other specified polyneuropathies
G62.9	Polyneuropathy, unspecified
G63.1	Polyneuropathy in neoplastic disease
G63.2	Diabetic polyneuropathy
G63.3	Polyneuropathy in other endocrine and metabolic diseases
G63.5	Polyneuropathy in systemic connective tissue disorders
G63.6	Polyneuropathy in other musculoskeletal disorders
G63.8	Polyneuropathy in other diseases classified elsewhere
G64	Other disorders of peripheral nervous system
G70.0	Myasthenia gravis
G70.1	Toxic myoneural disorders

ICD-10 Code	Description
G70.8	Other specified myoneural disorders
G71.8	Other primary disorders of muscles
G71.9	Primary disorder of muscle, unspecified
G72.0	Drug-induced myopathy
G72.1	Alcoholic myopathy
G72.2	Myopathy due to other toxic agents
G72.3	Periodic paralysis
G72.4	Inflammatory myopathy, not elsewhere classified
G72.8	Other specified myopathies
G72.9	Myopathy, unspecified
G73.0	Myasthenic syndromes in endocrine diseases
G73.1	Lambert-Eaton syndrome
G73.2	Other myasthenic syndromes in neoplastic disease
G73.3	Myasthenic syndromes in other diseases classified elsewhere
G73.5	Myopathy in endocrine diseases
G73.6	Myopathy in metabolic diseases
G73.7	Myopathy in other diseases classified elsewhere
G80.1	Spastic diplegic cerebral palsy
G80.2	Spastic hemiplegic cerebral palsy
G80.3	Dyskinetic cerebral palsy
G80.4	Ataxic cerebral palsy
G80.9	Cerebral palsy, unspecified
G81.0	Flaccid hemiplegia
G81.1	Spastic hemiplegia
G81.9	Hemiplegia, unspecified
G82.0	Flaccid paraplegia
G82.1	Spastic paraplegia
G82.2	Paraplegia, unspecified
G83.0	Diplegia of upper limbs
G83.1	Monoplegia of lower limb
G83.2	Monoplegia of upper limb
G83.3	Monoplegia, unspecified
G83.4	Cauda equina syndrome
G83.5	Locked-in syndrome
G83.8	Other specified paralytic syndromes
G83.9	Paralytic syndrome, unspecified
G90.0	Idiopathic peripheral autonomic neuropathy
G90.1	Familial dysautonomia [Riley-Day]
G90.2	Horner syndrome
G90.4	Autonomic dysreflexia
G90.8	Other disorders of autonomic nervous system
G90.9	Disorder of autonomic nervous system, unspecified
G91.0	Communicating hydrocephalus
G91.1	Obstructive hydrocephalus
G91.2	Normal-pressure hydrocephalus
G91.3	Post-traumatic hydrocephalus, unspecified
G91.8	Other hydrocephalus

ICD-10 Code	Description
G91.9	Hydrocephalus, unspecified
G92	Toxic encephalopathy
G93.0	Cerebral cysts
G93.1	Anoxic brain damage, not elsewhere classified
G93.2	Benign intracranial hypertension
G93.3	Postviral fatigue syndrome
G93.8	Other specified disorders of brain
G93.9	Disorder of brain, unspecified
G94.1	Hydrocephalus in neoplastic disease
G94.2	Hydrocephalus in other diseases classified elsewhere
G94.8	Other specified disorders of brain in diseases classified elsewhere
G95.0	Syringomyelia and syringobulbia
G95.1	Vascular myelopathies
G95.2	Cord compression, unspecified
G95.8	Other specified diseases of spinal cord
G95.9	Disease of spinal cord, unspecified
G96.0	Cerebrospinal fluid leak
G96.1	Disorders of meninges, not elsewhere classified
G96.8	Other specified disorders of central nervous system
G96.9	Disorder of central nervous system, unspecified
G99.0	Autonomic neuropathy in endocrine and metabolic diseases
G99.1	Other disorders of autonomic nervous system in other diseases classified elsewhere
G99.2	Myelopathy in diseases classified elsewhere
G99.8	Other specified disorders of nervous system in diseases classified elsewhere
H05.1	Chronic inflammatory disorders of orbit
H05.2	Exophthalmic conditions
H05.3	Deformity of orbit
H05.4	Enophthalmos
H05.5	Retained (old) foreign body following penetrating wound of orbit
H05.8	Other disorders of orbit
H05.9	Disorder of orbit, unspecified
H13.3	Ocular pemphigoid
H17.0	Adherent leukoma
H17.1	Other central corneal opacity
H17.8	Other corneal scars and opacities
H17.9	Corneal scar and opacity, unspecified
H18.0	Corneal pigmentations and deposits
H18.1	Bullous keratopathy
H18.2	Other corneal oedema
H18.3	Changes in corneal membranes
H18.4	Corneal degeneration
H18.5	Hereditary corneal dystrophies
H18.6	Keratoconus
H18.7	Other corneal deformities
H18.8	Other specified disorders of cornea
H18.9	Disorder of cornea, unspecified
H19.3	Keratitis and keratoconjunctivitis in other diseases classified elsewhere

ICD-10 Code	Description
H21.0	Hyphaema
H21.2	Degeneration of iris and ciliary body
H21.3	Cyst of iris, ciliary body and anterior chamber
H21.4	Pupillary membranes
H21.5	Other adhesions and disruptions of iris and ciliary body
H21.8	Other specified disorders of iris and ciliary body
H21.9	Disorder of iris and ciliary body, unspecified
H26.0	Infantile, juvenile and presenile cataract
H26.1	Traumatic cataract
H26.2	Complicated cataract
H26.3	Drug-induced cataract
H26.4	After-cataract
H26.8	Other specified cataract
H26.9	Cataract, unspecified
H27.0	Aphakia
H27.1	Dislocation of lens
H27.8	Other specified disorders of lens
H27.9	Disorder of lens, unspecified
H28.0	Diabetic cataract
H28.1	Cataract in other endocrine, nutritional and metabolic diseases
H28.2	Cataract in other diseases classified elsewhere
H31.0	Chorioretinal scars
H31.1	Choroidal degeneration
H31.2	Hereditary choroidal dystrophy
H31.3	Choroidal haemorrhage and rupture
H31.4	Choroidal detachment
H31.8	Other specified disorders of choroid
H31.9	Disorder of choroid, unspecified
H32.8	Other chorioretinal disorders in diseases classified elsewhere
H33.0	Retinal detachment with retinal break
H33.1	Retinoschisis and retinal cysts
H33.2	Serous retinal detachment
H33.3	Retinal breaks without detachment
H33.4	Traction detachment of retina
H33.5	Other retinal detachments
H34.0	Transient retinal artery occlusion
H34.1	Central retinal artery occlusion
H34.2	Other retinal artery occlusions
H34.8	Other retinal vascular occlusions
H34.9	Retinal vascular occlusion, unspecified
H35.0	Background retinopathy and retinal vascular changes
H35.1	Retinopathy of prematurity
H35.2	Other proliferative retinopathy
H35.3	Degeneration of macula and posterior pole
H35.4	Peripheral retinal degeneration
H35.6	Retinal haemorrhage
H35.7	Separation of retinal layers

ICD-10 Code	Description
H35.8	Other specified retinal disorders
H35.9	Retinal disorder, unspecified
H40.0	Glaucoma suspect
H40.1	Primary open-angle glaucoma
H40.2	Primary angle-closure glaucoma
H40.3	Glaucoma secondary to eye trauma
H40.4	Glaucoma secondary to eye inflammation
H40.5	Glaucoma secondary to other eye disorders
H40.6	Glaucoma secondary to drugs
H40.8	Other glaucoma
H40.9	Glaucoma, unspecified
H42.0	Glaucoma in endocrine, nutritional and metabolic diseases
H43.0	Vitreous prolapse
H43.1	Vitreous haemorrhage
H43.2	Crystalline deposits in vitreous body
H43.3	Other vitreous opacities
H43.8	Other disorders of vitreous body
H43.9	Disorder of vitreous body, unspecified
H44.0	Purulent endophthalmitis
H44.1	Other endophthalmitis
H44.2	Degenerative myopia
H44.3	Other degenerative disorders of globe
H44.4	Hypotony of eye
H44.5	Degenerated conditions of globe
H44.6	Retained (old) intraocular foreign body, magnetic
H44.7	Retained (old) intraocular foreign body, nonmagnetic
H44.8	Other disorders of globe
H44.9	Disorder of globe, unspecified
H47.0	Disorders of optic nerve, not elsewhere classified
H47.1	Papilloedema, unspecified
H47.3	Other disorders of optic disc
H47.4	Disorders of optic chiasm
H47.5	Disorders of other visual pathways
H47.6	Disorders of visual cortex
H47.7	Disorder of visual pathways, unspecified
H54.0	Blindness, binocular
H54.1	Severe visual impairment, binocular
H54.2	Moderate visual impairment, binocular
H54.4	Blindness, monocular
H60.2	Malignant otitis externa
H65.2	Chronic serous otitis media
H65.3	Chronic mucoid otitis media
H65.4	Other chronic nonsuppurative otitis media
H66.1	Chronic tubotympanic suppurative otitis media
H66.2	Chronic atticoantral suppurative otitis media
H66.3	Other chronic suppurative otitis media
H69.0	Patulous Eustachian tube

ICD-10 Code	Description
H69.8	Other specified disorders of Eustachian tube
H69.9	Eustachian tube disorder, unspecified
H70.1	Chronic mastoiditis
H73.1	Chronic myringitis
H74.0	Tympanosclerosis
H74.1	Adhesive middle ear disease
H74.2	Discontinuity and dislocation of ear ossicles
H74.3	Other acquired abnormalities of ear ossicles
H75.0	Mastoiditis in infectious and parasitic diseases classified elsewhere
H80.0	Otosclerosis involving oval window, nonobliterative
H80.1	Otosclerosis involving oval window, obliterative
H80.2	Cochlear otosclerosis
H80.8	Other otosclerosis
H80.9	Otosclerosis, unspecified
H81.0	Ménière disease
H81.4	Vertigo of central origin
H83.0	Labyrinthitis
H83.2	Labyrinthine dysfunction
H90.0	Conductive hearing loss, bilateral
H90.3	Sensorineural hearing loss, bilateral
H90.5	Sensorineural hearing loss, unspecified
H90.6	Mixed conductive and sensorineural hearing loss, bilateral
H91.0	Ototoxic hearing loss
H91.1	Presbycusis
H91.2	Sudden idiopathic hearing loss
H91.3	Deaf mutism, not elsewhere classified
H91.8	Other specified hearing loss
H91.9	Hearing loss, unspecified
I43.1	Cardiomyopathy in metabolic diseases
I60.0	Subarachnoid haemorrhage from carotid siphon and bifurcation
I60.1	Subarachnoid haemorrhage from middle cerebral artery
I60.2	Subarachnoid haemorrhage from anterior communicating artery
I60.3	Subarachnoid haemorrhage from posterior communicating artery
I60.4	Subarachnoid haemorrhage from basilar artery
I60.5	Subarachnoid haemorrhage from vertebral artery
I60.6	Subarachnoid haemorrhage from other intracranial arteries
I60.7	Subarachnoid haemorrhage from intracranial artery, unspecified
I60.8	Other subarachnoid haemorrhage
I60.9	Subarachnoid haemorrhage, unspecified
I61.0	Intracerebral haemorrhage in hemisphere, subcortical
I61.1	Intracerebral haemorrhage in hemisphere, cortical
I61.2	Intracerebral haemorrhage in hemisphere, unspecified
I61.4	Intracerebral haemorrhage in cerebellum
I61.5	Intracerebral haemorrhage, intraventricular
I61.6	Intracerebral haemorrhage, multiple localized
I61.8	Other intracerebral haemorrhage
I61.9	Intracerebral haemorrhage, unspecified

ICD-10 Code	Description
I62.0	Subdural haemorrhage (acute)(nontraumatic)
I62.1	Nontraumatic extradural haemorrhage
I62.9	Intracranial haemorrhage (nontraumatic), unspecified
I63.0	Cerebral infarction due to thrombosis of precerebral arteries
I63.1	Cerebral infarction due to embolism of precerebral arteries
I63.2	Cerebral infarction due to unspecified occlusion or stenosis of precerebral arteries
I63.3	Cerebral infarction due to thrombosis of cerebral arteries
I63.4	Cerebral infarction due to embolism of cerebral arteries
I63.5	Cerebral infarction due to unspecified occlusion or stenosis of cerebral arteries
I63.6	Cerebral infarction due to cerebral venous thrombosis, nonpyogenic
I63.8	Other cerebral infarction
I63.9	Cerebral infarction, unspecified
I64	Stroke, not specified as haemorrhage or infarction
I65.0	Occlusion and stenosis of vertebral artery
I65.1	Occlusion and stenosis of basilar artery
I65.2	Occlusion and stenosis of carotid artery
I65.3	Occlusion and stenosis of multiple and bilateral precerebral arteries
I65.8	Occlusion and stenosis of other precerebral artery
I65.9	Occlusion and stenosis of unspecified precerebral artery
I66.0	Occlusion and stenosis of middle cerebral artery
I66.1	Occlusion and stenosis of anterior cerebral artery
I66.2	Occlusion and stenosis of posterior cerebral artery
I66.3	Occlusion and stenosis of cerebellar arteries
I66.4	Occlusion and stenosis of multiple and bilateral cerebral arteries
I66.8	Occlusion and stenosis of other cerebral artery
I66.9	Occlusion and stenosis of unspecified cerebral artery
I67.0	Dissection of cerebral arteries, nonruptured
I67.1	Cerebral aneurysm, nonruptured
I67.2	Cerebral atherosclerosis
I67.3	Progressive vascular leukoencephalopathy
I67.4	Hypertensive encephalopathy
I67.5	Moyamoya disease
I67.6	Nonpyogenic thrombosis of intracranial venous system
I67.7	Cerebral arteritis, not elsewhere classified
I67.8	Other specified cerebrovascular diseases
I67.9	Cerebrovascular disease, unspecified
I68.0	Cerebral amyloid angiopathy
I68.2	Cerebral arteritis in other diseases classified elsewhere
I68.8	Other cerebrovascular disorders in diseases classified elsewhere
I69.0	Sequelae of subarachnoid haemorrhage
I69.1	Sequelae of intracerebral haemorrhage
I69.2	Sequelae of other nontraumatic intracranial haemorrhage
I69.3	Sequelae of cerebral infarction
I69.4	Sequelae of stroke, not specified as haemorrhage or infarction
I69.8	Sequelae of other and unspecified cerebrovascular diseases
I72.0	Aneurysm and dissection of carotid artery
I72.5	Aneurysm and dissection of other precerebral arteries

ICD-10 Code	Description
I72.9	Aneurysm and dissection of unspecified site
I79.2	Peripheral angiopathy in diseases classified elsewhere
J41.0	Simple chronic bronchitis
J41.1	Mucopurulent chronic bronchitis
J41.8	Mixed simple and mucopurulent chronic bronchitis
J42	Unspecified chronic bronchitis
J43.0	MacLeod syndrome
J43.1	Panlobular emphysema
J43.2	Centrilobular emphysema
J43.8	Other emphysema
J43.9	Emphysema, unspecified
J44.0	Chronic obstructive pulmonary disease with acute lower respiratory infection
J44.1	Chronic obstructive pulmonary disease with acute exacerbation, unspecified
J44.8	Other specified chronic obstructive pulmonary disease
J44.9	Chronic obstructive pulmonary disease, unspecified
J45.0	Predominantly allergic asthma
J45.1	Nonallergic asthma
J45.8	Mixed asthma
J45.9	Asthma, unspecified
J46	Status asthmaticus
J47	Bronchiectasis
J60	Coalworker pneumoconiosis
J61	Pneumoconiosis due to asbestos and other mineral fibres
J62.0	Pneumoconiosis due to talc dust
J62.8	Pneumoconiosis due to other dust containing silica
J63.0	Aluminosis (of lung)
J63.1	Bauxite fibrosis (of lung)
J63.2	Berylliosis
J63.3	Graphite fibrosis (of lung)
J63.4	Siderosis
J63.5	Stannosis
J63.8	Pneumoconiosis due to other specified inorganic dusts
J64	Unspecified pneumoconiosis
J65	Pneumoconiosis associated with tuberculosis
J66.0	Byssinosis
J66.1	Flax-dresser disease
J66.2	Cannabinosis
J66.8	Airway disease due to other specific organic dusts
J67.0	Farmer lung
J67.1	Bagassosis
J67.2	Bird fancier lung
J67.3	Suberosis
J67.4	Maltworker lung
J67.5	Mushroom-worker lung
J67.6	Maple-bark-stripper lung
J67.7	Air-conditioner and humidifier lung
J67.8	Hypersensitivity pneumonitis due to other organic dusts

ICD-10 Code	Description
J67.9	Hypersensitivity pneumonitis due to unspecified organic dust
J68.0	Bronchitis and pneumonitis due to chemicals, gases, fumes and vapours
J68.1	Pulmonary oedema due to chemicals, gases, fumes and vapours
J68.2	Upper respiratory inflammation due to chemicals, gases, fumes and vapours, not elsewhere classified
J68.3	Other acute and subacute respiratory conditions due to chemicals, gases, fumes and vapours
J68.4	Chronic respiratory conditions due to chemicals, gases, fumes and vapours
J68.8	Other respiratory conditions due to chemicals, gases, fumes and vapours
J68.9	Unspecified respiratory condition due to chemicals, gases, fumes and vapours
J69.0	Pneumonitis due to food and vomit
J69.1	Pneumonitis due to oils and essences
J69.8	Pneumonitis due to other solids and liquids
J70.0	Acute pulmonary manifestations due to radiation
J70.1	Chronic and other pulmonary manifestations due to radiation
J70.2	Acute drug-induced interstitial lung disorders
J70.3	Chronic drug-induced interstitial lung disorders
J70.4	Drug-induced interstitial lung disorders, unspecified
J70.8	Respiratory conditions due to other specified external agents
J70.9	Respiratory conditions due to unspecified external agent
J80	Adult respiratory distress syndrome
J81	Pulmonary oedema
J82	Pulmonary eosinophilia, not elsewhere classified
J84.0	Alveolar and parietoalveolar conditions
J84.8	Other specified interstitial pulmonary diseases
J84.9	Interstitial pulmonary disease, unspecified
J85.0	Gangrene and necrosis of lung
J85.1	Abscess of lung with pneumonia
J85.2	Abscess of lung without pneumonia
J85.3	Abscess of mediastinum
J86.0	Pyothorax with fistula
J86.9	Pyothorax without fistula
J98.0	Diseases of bronchus, not elsewhere classified
J98.1	Pulmonary collapse
J98.2	Interstitial emphysema
J98.3	Compensatory emphysema
J98.5	Diseases of mediastinum, not elsewhere classified
J98.6	Disorders of diaphragm
J98.8	Other specified respiratory disorders
J98.9	Respiratory disorder, unspecified
J99.0	Respiratory disorders in diseases classified elsewhere: Rheumatoid lung disease
J99.1	Respiratory disorders in other diffuse connective tissue disorders
K20	Oesophagitis
K21.0	Gastro-oesophageal reflux disease with oesophagitis
K22.0	Achalasia of cardia
K22.1	Ulcer of oesophagus
K22.2	Oesophageal obstruction

ICD-10 Code	Description
K22.3	Perforation of oesophagus
K22.4	Dyskinesia of oesophagus
K22.5	Diverticulum of oesophagus, acquired
K22.6	Gastro-oesophageal laceration-haemorrhage syndrome
K22.7	Barrett oesophagus
K22.8	Other specified diseases of oesophagus
K22.9	Disease of oesophagus, unspecified
K23.0	Tuberculous oesophagitis
K23.1	Megaoesophagus in Chagas disease
K23.8	Disorders of oesophagus in other diseases classified elsewhere
K25	Gastric ulcer
K26	Duodenal ulcer
K27	Peptic ulcer, site unspecified
K28	Gastrojejunal ulcer
K29.0	Acute haemorrhagic gastritis
K29.1	Other acute gastritis
K29.2	Alcoholic gastritis
K29.3	Chronic superficial gastritis
K29.4	Chronic atrophic gastritis
K29.5	Chronic gastritis, unspecified
K29.6	Other gastritis
K29.7	Gastritis, unspecified
K29.8	Duodenitis
K29.9	Gastroduodenitis, unspecified
K31.0	Acute dilatation of stomach
K31.1	Adult hypertrophic pyloric stenosis
K31.2	Hourglass stricture and stenosis of stomach
K31.3	Pylorospasm, not elsewhere classified
K31.4	Gastric diverticulum
K31.5	Obstruction of duodenum
K31.6	Fistula of stomach and duodenum
K31.7	Polyp of stomach and duodenum
K31.8	Other specified diseases of stomach and duodenum
K31.9	Disease of stomach and duodenum, unspecified
K50.0	Crohn disease of small intestine
K50.1	Crohn disease of large intestine
K50.8	Other Crohn disease
K50.9	Crohn disease, unspecified
K51.0	Ulcerative (chronic) pancolitis
K51.2	Ulcerative (chronic) proctitis
K51.3	Ulcerative (chronic) rectosigmoiditis
K51.4	Inflammatory polyps
K51.5	Left sided colitis
K51.8	Other ulcerative colitis
K51.9	Ulcerative colitis, unspecified
K52.0	Gastroenteritis and colitis due to radiation
K52.1	Toxic gastroenteritis and colitis

ICD-10 Code	Description
K52.2	Allergic and dietetic gastroenteritis and colitis
K52.3	Indeterminate colitis
K52.8	Other specified noninfective gastroenteritis and colitis
K52.9	Noninfective gastroenteritis and colitis, unspecified
K55.1	Chronic vascular disorders of intestine
K55.2	Angiodysplasia of colon
K55.8	Other vascular disorders of intestine
K57.0	Diverticular disease of small intestine with perforation and abscess
K57.1	Diverticular disease of small intestine without perforation or abscess
K57.2	Diverticular disease of large intestine with perforation and abscess
K57.3	Diverticular disease of large intestine without perforation or abscess
K57.4	Diverticular disease of both small and large intestine with perforation and abscess
K57.5	Diverticular disease of both small and large intestine without perforation or abscess
K57.8	Diverticular disease of intestine, part unspecified, with perforation and abscess
K57.9	Diverticular disease of intestine, part unspecified, without perforation or abscess
K59.2	Neurogenic bowel, not elsewhere classified
K63.0	Abscess of intestine
K63.1	Perforation of intestine (nontraumatic)
K63.2	Fistula of intestine
K63.3	Ulcer of intestine
K66.0	Peritoneal adhesions
K66.1	Haemoperitoneum
K66.8	Other specified disorders of peritoneum
K66.9	Disorder of peritoneum, unspecified
K67.3	Tuberculous peritonitis
K70.0	Alcoholic fatty liver
K70.1	Alcoholic hepatitis
K70.2	Alcoholic fibrosis and sclerosis of liver
K70.3	Alcoholic cirrhosis of liver
K70.4	Alcoholic hepatic failure
K70.9	Alcoholic liver disease, unspecified
K73.0	Chronic persistent hepatitis, not elsewhere classified
K73.1	Chronic lobular hepatitis, not elsewhere classified
K73.2	Chronic active hepatitis, not elsewhere classified
K73.8	Other chronic hepatitis, not elsewhere classified
K73.9	Chronic hepatitis, unspecified
K75.0	Abscess of liver
K75.1	Phlebitis of portal vein
K75.2	Nonspecific reactive hepatitis
K75.3	Granulomatous hepatitis, not elsewhere classified
K75.4	Autoimmune hepatitis
K75.8	Other specified inflammatory liver diseases
K75.9	Inflammatory liver disease, unspecified
K76.0	Fatty (change of) liver, not elsewhere classified
K76.1	Chronic passive congestion of liver
K76.2	Central haemorrhagic necrosis of liver
K76.3	Infarction of liver

ICD-10 Code	Description
K76.4	Peliosis hepatis
K76.6	Portal hypertension
K76.7	Hepatorenal syndrome
K76.9	Liver disease, unspecified
K80.0	Calculus of gallbladder with acute cholecystitis
K80.1	Calculus of gallbladder with other cholecystitis
K80.2	Calculus of gallbladder without cholecystitis
K80.3	Calculus of bile duct with cholangitis
K80.4	Calculus of bile duct with cholecystitis
K80.5	Calculus of bile duct without cholangitis or cholecystitis
K80.8	Other cholelithiasis
K81.0	Acute cholecystitis
K81.1	Chronic cholecystitis
K81.8	Other cholecystitis
K81.9	Cholecystitis, unspecified
K82.0	Obstruction of gallbladder
K82.1	Hydrops of gallbladder
K82.2	Perforation of gallbladder
K82.3	Fistula of gallbladder
K82.4	Cholesterolosis of gallbladder
K82.8	Other specified diseases of gallbladder
K82.9	Disease of gallbladder, unspecified
K83.0	Cholangitis
K83.1	Obstruction of bile duct
K83.2	Perforation of bile duct
K83.3	Fistula of bile duct
K83.4	Spasm of sphincter of Oddi
K83.5	Biliary cyst
K83.8	Other specified diseases of biliary tract
K83.9	Disease of biliary tract, unspecified
K85.0	Idiopathic acute pancreatitis
K85.1	Biliary acute pancreatitis
K85.2	Alcohol-induced acute pancreatitis
K85.3	Drug-induced acute pancreatitis
K85.8	Other acute pancreatitis
K85.9	Acute pancreatitis, unspecified
K86.0	Alcohol-induced chronic pancreatitis
K86.1	Other chronic pancreatitis
K86.2	Cyst of pancreas
K86.3	Pseudocyst of pancreas
K86.9	Disease of pancreas, unspecified
K87.0	Disorders of gallbladder and biliary tract in diseases classified elsewhere
K90.0	Coeliac disease
K90.1	Tropical sprue
K90.2	Blind loop syndrome, not elsewhere classified
K90.3	Pancreatic steatorrhoea
K90.4	Malabsorption due to intolerance, not elsewhere classified

ICD-10 Code	Description
K90.8	Other intestinal malabsorption
K93.0	Tuberculous disorders of intestines, peritoneum and mesenteric glands
K93.1	Megacolon in Chagas disease
L10.0	Pemphigus vulgaris
L10.1	Pemphigus vegetans
L10.2	Pemphigus foliaceus
L10.3	Brazilian pemphigus [fogo selvagem]
L10.4	Pemphigus erythematosus
L10.5	Drug-induced pemphigus
L10.8	Other pemphigus
L10.9	Pemphigus, unspecified
L11.0	Acquired keratosis follicularis
L11.8	Other specified acantholytic disorders
L11.9	Acantholytic disorder, unspecified
L12.0	Bullous pemphigoid
L12.1	Cicatricial pemphigoid
L12.2	Chronic bullous disease of childhood
L12.3	Acquired epidermolysis bullosa
L12.8	Other pemphigoid
L12.9	Pemphigoid, unspecified
L13.0	Dermatitis herpetiformis
L13.1	Subcorneal pustular dermatitis
L13.8	Other specified bullous disorders
L13.9	Bullous disorder, unspecified
L14	Bullous disorders in diseases classified elsewhere
L28.0	Lichen simplex chronicus
L28.1	Prurigo nodularis
L28.2	Other prurigo
L40.0	Psoriasis vulgaris
L40.1	Generalized pustular psoriasis
L40.2	Acrodermatitis continua
L40.3	Pustulosis palmaris et plantaris
L40.4	Guttate psoriasis
L40.5	Arthropathic psoriasis
L40.8	Other psoriasis
L40.9	Psoriasis, unspecified
L41.0	Pityriasis lichenoides et varioliformis acuta
L41.1	Pityriasis lichenoides chronica
L41.3	Small plaque parapsoriasis
L41.4	Large plaque parapsoriasis
L41.5	Retiform parapsoriasis
L41.8	Other parapsoriasis
L41.9	Parapsoriasis, unspecified
L42	Pityriasis rosea
L43.0	Hypertrophic lichen planus
L43.1	Bullous lichen planus
L43.2	Lichenoid drug reaction

ICD-10 Code	Description
L43.3	Subacute (active) lichen planus
L43.8	Other lichen planus
L43.9	Lichen planus, unspecified
L44.0	Pityriasis rubra pilaris
L44.1	Lichen nitidus
L44.2	Lichen striatus
L44.3	Lichen ruber moniliformis
L44.4	Infantile papular acrodermatitis [Giannotti-Crosti]
L44.8	Other specified papulosquamous disorders
L44.9	Papulosquamous disorder, unspecified
L45	Papulosquamous disorders in diseases classified elsewhere
L57.0	Actinic keratosis
L57.1	Actinic reticuloid
L57.2	Cutis rhomboidalis nuchae
L57.3	Poikiloderma of Civatte
L57.4	Cutis laxa senilis
L57.5	Actinic granuloma
L57.8	Other skin changes due to chronic exposure to nonionizing radiation
L57.9	Skin changes due to chronic exposure to nonionizing radiation, unspecified
L58.1	Chronic radiodermatitis
L59.0	Erythema ab igne [dermatitis ab igne]
L59.8	Other specified disorders of skin and subcutaneous tissue related to radiation
L59.9	Disorder of skin and subcutaneous tissue related to radiation, unspecified
L62.0	Clubbed nail pachydermoperiostosis
L87.0	Keratosis follicularis et parafollicularis in cutem penetrans [Kyrle]
L87.1	Reactive perforating collagenosis
L87.2	Elastosis perforans serpiginosa
L87.8	Other transepidermal elimination disorders
L87.9	Transepidermal elimination disorder, unspecified
L88	Pyoderma gangrenosum
L90.0	Lichen sclerosus et atrophicus
L90.1	Anetoderma of Schweninger-Buzzi
L90.2	Anetoderma of Jadassohn-Pellizzari
L90.3	Atrophoderma of Pasini and Pierini
L90.4	Acrodermatitis chronica atrophicans
L90.5	Scar conditions and fibrosis of skin
L90.6	Striae atrophicae
L90.8	Other atrophic disorders of skin
L90.9	Atrophic disorder of skin, unspecified
L92.0	Granuloma annulare
L92.1	Necrobiosis lipoidica, not elsewhere classified
L92.2	Granuloma faciale [eosinophilic granuloma of skin]
L92.3	Foreign body granuloma of skin and subcutaneous tissue
L92.8	Other granulomatous disorders of skin and subcutaneous tissue
L92.9	Granulomatous disorder of skin and subcutaneous tissue, unspecified
L93.0	Discoid lupus erythematosus
L93.1	Subacute cutaneous lupus erythematosus

ICD-10 Code	Description
L93.2	Other local lupus erythematosus
L95.0	Livedoid vasculitis
L95.1	Erythema elevatum diutinum
L95.8	Other vasculitis limited to skin
L95.9	Vasculitis limited to skin, unspecified
L98.5	Mucinosis of skin
L99.0	Amyloidosis of skin
M01.1	Tuberculous arthritis
M03.6	Reactive arthropathy in other diseases classified elsewhere
M05.0	Felty syndrome
M05.1	Seropositive rheumatoid arthritis: Rheumatoid lung disease
M05.2	Rheumatoid vasculitis
M05.3	Rheumatoid arthritis with involvement of other organs and systems
M05.8	Other seropositive rheumatoid arthritis
M05.9	Seropositive rheumatoid arthritis, unspecified
M06.0	Seronegative rheumatoid arthritis
M06.1	Adult-onset Still disease
M06.2	Rheumatoid bursitis
M06.3	Rheumatoid nodule
M06.4	Inflammatory polyarthropathy
M06.8	Other specified rheumatoid arthritis
M06.9	Rheumatoid arthritis, unspecified
M07.0	Distal interphalangeal psoriatic arthropathy
M07.1	Arthritis mutilans
M07.2	Psoriatic spondylitis
M07.3	Other psoriatic arthropathies
M07.4	Arthropathy in Crohn disease [regional enteritis]
M07.6	Other enteropathic arthropathies
M08.0	Juvenile rheumatoid arthritis
M08.1	Juvenile ankylosing spondylitis
M08.2	Juvenile arthritis with systemic onset
M08.3	Juvenile polyarthritis (seronegative)
M08.4	Pauciarticular juvenile arthritis
M08.8	Other juvenile arthritis
M08.9	Juvenile arthritis, unspecified
M09.0	Juvenile arthritis in psoriasis
M09.1	Juvenile arthritis in Crohn disease [regional enteritis]
M09.2	Juvenile arthritis in ulcerative colitis
M09.8	Juvenile arthritis in other diseases classified elsewhere
M10.0	Idiopathic gout
M10.1	Lead-induced gout
M10.2	Drug-induced gout
M10.3	Gout due to impairment of renal function
M10.4	Other secondary gout
M10.9	Gout, unspecified
M11.0	Hydroxyapatite deposition disease
M11.1	Familial chondrocalcinosis

ICD-10 Code	Description
M11.2	Other chondrocalcinosis
M11.8	Other specified crystal arthropathies
M11.9	Crystal arthropathy, unspecified
M12.0	Chronic postrheumatic arthropathy [Jaccoud]
M12.1	Kaschin-Beck disease
M12.2	Villonodular synovitis (pigmented)
M12.3	Palindromic rheumatism
M12.4	Intermittent hydrarthrosis
M12.5	Traumatic arthropathy
M12.8	Other specific arthropathies, not elsewhere classified
M13.0	Polyarthritis, unspecified
M13.1	Monoarthritis, not elsewhere classified
M13.8	Other specified arthritis
M13.9	Arthritis, unspecified
M14.0	Gouty arthropathy due to enzyme defects and other inherited disorders
M14.2	Diabetic arthropathy
M14.3	Lipoid dermatoarthritis
M14.4	Arthropathy in amyloidosis
M14.5	Arthropathies in other endocrine, nutritional and metabolic disorders
M14.6	Neuropathic arthropathy
M14.8	Arthropathies in other specified diseases classified elsewhere
M30.0	Polyarteritis nodosa
M30.1	Polyarteritis with lung involvement [Churg-Strauss]
M30.2	Juvenile polyarteritis
M30.3	Mucocutaneous lymph node syndrome [Kawasaki]
M30.8	Other conditions related to polyarteritis nodosa
M31.0	Hypersensitivity angiitis
M31.1	Thrombotic microangiopathy
M31.2	Lethal midline granuloma
M31.4	Aortic arch syndrome [Takayasu]
M31.5	Giant cell arteritis with polymyalgia rheumatica
M31.6	Other giant cell arteritis
M31.7	Microscopic polyangiitis
M31.8	Other specified necrotizing vasculopathies
M31.9	Necrotizing vasculopathy, unspecified
M32.0	Drug-induced systemic lupus erythematosus
M32.8	Other forms of systemic lupus erythematosus
M32.9	Systemic lupus erythematosus, unspecified
M33.0	Juvenile dermatomyositis
M33.1	Other dermatomyositis
M33.2	Polymyositis
M33.9	Dermatopolymyositis, unspecified
M34.0	Progressive systemic sclerosis
M34.1	CR(E)ST syndrome
M34.2	Systemic sclerosis induced by drugs and chemicals
M34.8	Other forms of systemic sclerosis
M34.9	Systemic sclerosis, unspecified

ICD-10 Code	Description
M35.0	Sicca syndrome [Sjögren]
M35.1	Other overlap syndromes
M35.2	Behçet disease
M35.3	Polymyalgia rheumatica
M35.4	Diffuse (eosinophilic) fasciitis
M35.5	Multifocal fibrosclerosis
M35.6	Relapsing panniculitis [Weber-Christian]
M35.7	Hypermobility syndrome
M35.8	Other specified systemic involvement of connective tissue
M35.9	Systemic involvement of connective tissue, unspecified
M36.0	Dermato(poly)myositis in neoplastic disease
M36.1	Arthropathy in neoplastic disease
M36.2	Haemophilic arthropathy
M36.3	Arthropathy in other blood disorders
M36.4	Arthropathy in hypersensitivity reactions classified elsewhere
M40.0	Postural kyphosis
M40.1	Other secondary kyphosis
M40.2	Other and unspecified kyphosis
M40.3	Flatback syndrome
M40.4	Other lordosis
M40.5	Lordosis, unspecified
M41.0	Infantile idiopathic scoliosis
M41.1	Juvenile idiopathic scoliosis
M41.2	Other idiopathic scoliosis
M41.3	Thoracogenic scoliosis
M41.4	Neuromuscular scoliosis
M41.5	Other secondary scoliosis
M41.8	Other forms of scoliosis
M41.9	Scoliosis, unspecified
M42.0	Juvenile osteochondrosis of spine
M42.1	Adult osteochondrosis of spine
M42.9	Spinal osteochondrosis, unspecified
M43.0	Spondylolysis
M43.1	Spondylolisthesis
M43.2	Other fusion of spine
M43.3	Recurrent atlantoaxial subluxation with myelopathy
M43.4	Other recurrent atlantoaxial subluxation
M43.5	Other recurrent vertebral subluxation
M43.6	Torticollis
M43.8	Other specified deforming dorsopathies
M43.9	Deforming dorsopathy, unspecified
M45	Ankylosing spondylitis
M46.0	Spinal enthesopathy
M46.1	Sacroiliitis, not elsewhere classified
M46.2	Osteomyelitis of vertebra
M46.3	Infection of intervertebral disc (pyogenic)
M46.4	Discitis, unspecified

ICD-10 Code	Description
M46.5	Other infective spondylopathies
M46.8	Other specified inflammatory spondylopathies
M46.9	Inflammatory spondylopathy, unspecified
M47.0	Anterior spinal and vertebral artery compression syndromes
M47.1	Other spondylosis with myelopathy
M47.2	Other spondylosis with radiculopathy
M47.8	Other spondylosis
M47.9	Spondylosis, unspecified
M48.0	Spinal stenosis
M48.1	Ankylosing hyperostosis [Forestier]
M48.2	Kissing spine
M48.3	Traumatic spondylopathy
M48.4	Fatigue fracture of vertebra
M48.5	Collapsed vertebra, not elsewhere classified
M48.8	Other specified spondylopathies
M48.9	Spondylopathy, unspecified
M49.0	Tuberculosis of spine
M49.5	Collapsed vertebra in diseases classified elsewhere
M50.0	Cervical disc disorder with myelopathy
M50.1	Cervical disc disorder with radiculopathy
M50.2	Other cervical disc displacement
M50.3	Other cervical disc degeneration
M50.8	Other cervical disc disorders
M50.9	Cervical disc disorder, unspecified
M51.0	Lumbar and other intervertebral disc disorders with myelopathy
M51.1	Lumbar and other intervertebral disc disorders with radiculopathy
M51.2	Other specified intervertebral disc displacement
M51.3	Other specified intervertebral disc degeneration
M51.4	Schmorl nodes
M51.8	Other specified intervertebral disc disorders
M51.9	Intervertebral disc disorder, unspecified
M53.0	Cervicocranial syndrome
M53.1	Cervicobrachial syndrome
M53.2	Spinal instabilities
M53.3	Sacrococcygeal disorders, not elsewhere classified
M53.8	Other specified dorsopathies
M53.9	Dorsopathy, unspecified
M54.0	Panniculitis affecting regions of neck and back
M54.1	Radiculopathy
M54.2	Cervicalgia
M54.3	Sciatica
M54.4	Lumbago with sciatica
M54.5	Low back pain
M54.6	Pain in thoracic spine
M54.8	Other dorsalgia
M54.9	Dorsalgia, unspecified
M60.0	Infective myositis

ICD-10 Code	Description
M60.1	Interstitial myositis
M60.2	Foreign body granuloma of soft tissue, not elsewhere classified
M60.8	Other myositis
M60.9	Myositis, unspecified
M61.0	Myositis ossificans traumatica
M61.1	Myositis ossificans progressiva
M61.2	Paralytic calcification and ossification of muscle
M61.3	Calcification and ossification of muscles associated with burns
M61.4	Other calcification of muscle
M61.5	Other ossification of muscle
M61.9	Calcification and ossification of muscle, unspecified
M62.0	Diastasis of muscle
M62.1	Other rupture of muscle (nontraumatic)
M62.2	Ischaemic infarction of muscle
M62.3	Immobility syndrome (paraplegic)
M62.4	Contracture of muscle
M62.5	Muscle wasting and atrophy, not elsewhere classified
M62.6	Muscle strain
M62.8	Other specified disorders of muscle
M62.9	Disorder of muscle, unspecified
M63.8	Other disorders of muscle in diseases classified elsewhere
M80.1	Postoophorectomy osteoporosis with pathological fracture
M80.2	Osteoporosis of disuse with pathological fracture
M80.3	Postsurgical malabsorption osteoporosis with pathological fracture
M80.4	Drug-induced osteoporosis with pathological fracture
M80.5	Idiopathic osteoporosis with pathological fracture
M80.8	Other osteoporosis with pathological fracture
M80.9	Unspecified osteoporosis with pathological fracture
M81.1	Postoophorectomy osteoporosis
M81.2	Osteoporosis of disuse
M81.3	Postsurgical malabsorption osteoporosis
M81.4	Drug-induced osteoporosis
M81.5	Idiopathic osteoporosis
M81.6	Localized osteoporosis [Lequesne]
M81.8	Other osteoporosis
M81.9	Osteoporosis, unspecified
M82.0	Osteoporosis in multiple myelomatosis
M82.1	Osteoporosis in endocrine disorders
M82.8	Osteoporosis in other diseases classified elsewhere
M84.0	Malunion of fracture
M84.1	Nonunion of fracture [pseudarthrosis]
M84.2	Delayed union of fracture
M84.8	Other disorders of continuity of bone
M84.9	Disorder of continuity of bone, unspecified
M85.0	Fibrous dysplasia (monostotic)
M85.1	Skeletal fluorosis
M85.2	Hyperostosis of skull

ICD-10 Code	Description
M85.3	Osteitis condensans
M85.4	Solitary bone cyst
M85.5	Aneurysmal bone cyst
M85.6	Other cyst of bone
M85.8	Other specified disorders of bone density and structure
M85.9	Disorder of bone density and structure, unspecified
M86.3	Chronic multifocal osteomyelitis
M86.4	Chronic osteomyelitis with draining sinus
M86.5	Other chronic haematogenous osteomyelitis
M86.6	Other chronic osteomyelitis
M89.0	Algoneurodystrophy
M89.1	Epiphyseal arrest
M89.2	Other disorders of bone development and growth
M89.3	Hypertrophy of bone
M89.4	Other hypertrophic osteoarthropathy
M89.6	Osteopathy after poliomyelitis
M89.8	Other specified disorders of bone
M89.9	Disorder of bone, unspecified
M90.0	Tuberculosis of bone
M90.4	Osteonecrosis due to haemoglobinopathy
M90.6	Osteitis deformans in neoplastic disease
M90.7	Fracture of bone in neoplastic disease
M90.8	Osteopathy in other diseases classified elsewhere
M91.0	Juvenile osteochondrosis of pelvis
M91.1	Juvenile osteochondrosis of head of femur [Legg-Calvé-Perthes]
M91.2	Coxa plana
M91.3	Pseudocoxalgia
M91.8	Other juvenile osteochondrosis of hip and pelvis
M91.9	Juvenile osteochondrosis of hip and pelvis, unspecified
M92.0	Juvenile osteochondrosis of humerus
M92.1	Juvenile osteochondrosis of radius and ulna
M92.2	Juvenile osteochondrosis of hand
M92.3	Other juvenile osteochondrosis of upper limb
M92.4	Juvenile osteochondrosis of patella
M92.5	Juvenile osteochondrosis of tibia and fibula
M92.6	Juvenile osteochondrosis of tarsus
M92.7	Juvenile osteochondrosis of metatarsus
M92.8	Other specified juvenile osteochondrosis
M92.9	Juvenile osteochondrosis, unspecified
M93.0	Slipped upper femoral epiphysis (nontraumatic)
M93.1	Kienböck disease of adults
M93.2	Osteochondritis dissecans
M93.8	Other specified osteochondropathies
M93.9	Osteochondropathy, unspecified
M94.0	Chondrocostal junction syndrome [Tietze]
M94.1	Relapsing polychondritis
M94.2	Chondromalacia

ICD-10 Code	Description
M94.3	Chondrolysis
M94.8	Other specified disorders of cartilage
M94.9	Disorder of cartilage, unspecified
N00	Acute nephritic syndrome
N01	Rapidly progressive nephritic syndrome
N02	Recurrent and persistent haematuria
N03	Chronic nephritic syndrome
N04	Nephrotic syndrome
N05	Unspecified nephritic syndrome
N07	Hereditary nephropathy, not elsewhere classified
N08.1	Glomerular disorders in neoplastic diseases
N08.2	Glomerular disorders in blood diseases and disorders involving the immune mechanism
N08.3	Glomerular disorders in diabetes mellitus
N08.4	Glomerular disorders in other endocrine, nutritional and metabolic diseases
N08.5	Glomerular disorders in systemic connective tissue disorders
N08.8	Glomerular disorders in other diseases classified elsewhere
N11.0	Nonobstructive reflux-associated chronic pyelonephritis
N11.1	Chronic obstructive pyelonephritis
N11.8	Other chronic tubulo-interstitial nephritis
N11.9	Chronic tubulo-interstitial nephritis, unspecified
N12	Tubulo-interstitial nephritis, not specified as acute or chronic
N13.0	Hydronephrosis with ureteropelvic junction obstruction
N13.1	Hydronephrosis with ureteral stricture, not elsewhere classified
N13.2	Hydronephrosis with renal and ureteral calculous obstruction
N13.3	Other and unspecified hydronephrosis
N13.4	Hydroureter
N13.5	Kinking and stricture of ureter without hydronephrosis
N13.6	Pyonephrosis
N13.7	Vesicoureteral-reflux-associated uropathy
N13.8	Other obstructive and reflux uropathy
N13.9	Obstructive and reflux uropathy, unspecified
N14.0	Analgesic nephropathy
N14.1	Nephropathy induced by other drugs, medicaments and biological substances
N14.2	Nephropathy induced by unspecified drug, medicament or biological substance
N14.3	Nephropathy induced by heavy metals
N14.4	Toxic nephropathy, not elsewhere classified
N15.0	Balkan nephropathy
N15.1	Renal and perinephric abscess
N15.8	Other specified renal tubulo-interstitial diseases
N15.9	Renal tubulo-interstitial disease, unspecified
N16.0	Renal tubulo-interstitial disorders in infectious and parasitic diseases classified elsewhere
N16.1	Renal tubulo-interstitial disorders in neoplastic diseases
N16.2	Renal tubulo-interstitial disorders in blood diseases and disorders involving the immune mechanism
N16.3	Renal tubulo-interstitial disorders in metabolic diseases
N16.4	Renal tubulo-interstitial disorders in systemic connective tissue disorders

ICD-10 Code	Description
N16.5	Renal tubulo-interstitial disorders in transplant rejection
N16.8	Renal tubulo-interstitial disorders in other diseases classified elsewhere
N20.0	Calculus of kidney
N20.1	Calculus of ureter
N20.2	Calculus of kidney with calculus of ureter
N20.9	Urinary calculus, unspecified
N21.0	Calculus in bladder
N21.1	Calculus in urethra
N21.8	Other lower urinary tract calculus
N21.9	Calculus of lower urinary tract, unspecified
N22.0	Urinary calculus in schistosomiasis [bilharziasis]
N22.8	Calculus of urinary tract in other diseases classified elsewhere
N23	Unspecified renal colic
N25.0	Renal osteodystrophy
N25.9	Disorder resulting from impaired renal tubular function, unspecified
N26	Unspecified contracted kidney
N28.0	Ischaemia and infarction of kidney
N28.1	Cyst of kidney, acquired
N28.8	Other specified disorders of kidney and ureter
N28.9	Disorder of kidney and ureter, unspecified
N29.0	Late syphilis of kidney
N29.8	Other disorders of kidney and ureter in other diseases classified elsewhere
N31.0	Uninhibited neuropathic bladder, not elsewhere classified
N31.1	Reflex neuropathic bladder, not elsewhere classified
N31.2	Flaccid neuropathic bladder, not elsewhere classified
N31.8	Other neuromuscular dysfunction of bladder
N31.9	Neuromuscular dysfunction of bladder, unspecified
N32.0	Bladder-neck obstruction
N32.1	Vesicointestinal fistula
N32.2	Vesical fistula, not elsewhere classified
N32.3	Diverticulum of bladder
N32.4	Rupture of bladder, nontraumatic
N32.8	Other specified disorders of bladder
N32.9	Bladder disorder, unspecified
N33.0	Tuberculous cystitis
N33.8	Bladder disorders in other diseases classified elsewhere
N35.0	Post-traumatic urethral stricture
N35.1	Postinfective urethral stricture, not elsewhere classified
N35.8	Other urethral stricture
N35.9	Urethral stricture, unspecified
N36.0	Urethral fistula
N36.1	Urethral diverticulum
N36.2	Urethral caruncle
N36.3	Prolapsed urethral mucosa
N36.8	Other specified disorders of urethra
N36.9	Urethral disorder, unspecified
N39.1	Persistent proteinuria, unspecified

ICD-10 Code	Description
N39.3	Stress incontinence
N39.4	Other specified urinary incontinence
N40	Hyperplasia of prostate
N42.0	Calculus of prostate
N42.1	Congestion and haemorrhage of prostate
N42.2	Atrophy of prostate
N42.3	Dysplasia of prostate
N42.8	Other specified disorders of prostate
N42.9	Disorder of prostate, unspecified
N70.1	Chronic salpingitis and oophoritis
N70.9	Salpingitis and oophoritis, unspecified
N71.1	Chronic inflammatory disease of uterus
N71.9	Inflammatory disease of uterus, unspecified
N72	Inflammatory disease of cervix uteri
N73.0	Acute parametritis and pelvic cellulitis
N73.1	Chronic parametritis and pelvic cellulitis
N73.2	Unspecified parametritis and pelvic cellulitis
N73.3	Female acute pelvic peritonitis
N73.4	Female chronic pelvic peritonitis
N73.5	Female pelvic peritonitis, unspecified
N73.6	Female pelvic peritoneal adhesions
N73.8	Other specified female pelvic inflammatory diseases
N73.9	Female pelvic inflammatory disease, unspecified
N74.0	Tuberculous infection of cervix uteri
N74.1	Female tuberculous pelvic inflammatory disease
N74.2	Female syphilitic pelvic inflammatory disease
N74.3	Female gonococcal pelvic inflammatory disease
N74.4	Female chlamydial pelvic inflammatory disease
N74.8	Female pelvic inflammatory disorders in other diseases classified elsewhere
N80.0	Endometriosis of uterus
N80.1	Endometriosis of ovary
N80.2	Endometriosis of fallopian tube
N80.3	Endometriosis of pelvic peritoneum
N80.4	Endometriosis of rectovaginal septum and vagina
N80.5	Endometriosis of intestine
N80.6	Endometriosis in cutaneous scar
N80.8	Other endometriosis
N80.9	Endometriosis, unspecified
N81.0	Female urethrocele
N81.1	Cystocele
N81.2	Incomplete uterovaginal prolapse
N81.3	Complete uterovaginal prolapse
N81.4	Uterovaginal prolapse, unspecified
N81.5	Vaginal enterocele
N81.6	Rectocele
N81.8	Other female genital prolapse
N81.9	Female genital prolapse, unspecified

ICD-10 Code	Description
N82.0	Vesicovaginal fistula
N82.1	Other female urinary-genital tract fistulae
N82.2	Fistula of vagina to small intestine
N82.3	Fistula of vagina to large intestine
N82.4	Other female intestinal-genital tract fistulae
N82.5	Female genital tract-skin fistulae
N82.8	Other female genital tract fistulae
N82.9	Female genital tract fistula, unspecified
N85.0	Endometrial glandular hyperplasia
N85.1	Endometrial adenomatous hyperplasia
N85.2	Hypertrophy of uterus
N85.3	Subinvolution of uterus
N85.4	Malposition of uterus
N85.5	Inversion of uterus
N85.6	Intrauterine synechiae
N85.7	Haematometra
N85.8	Other specified noninflammatory disorders of uterus
N85.9	Noninflammatory disorder of uterus, unspecified
N87.0	Mild cervical dysplasia
N87.1	Moderate cervical dysplasia
N87.2	Severe cervical dysplasia, not elsewhere classified
N87.9	Dysplasia of cervix uteri, unspecified
N88.0	Leukoplakia of cervix uteri
N88.1	Old laceration of cervix uteri
N88.2	Stricture and stenosis of cervix uteri
N88.3	Incompetence of cervix uteri
N88.4	Hypertrophic elongation of cervix uteri
N88.8	Other specified noninflammatory disorders of cervix uteri
N88.9	Noninflammatory disorder of cervix uteri, unspecified
O35.4	Maternal care for (suspected) damage to fetus from alcohol
P10.0	Subdural haemorrhage due to birth injury
P10.2	Intraventricular haemorrhage due to birth injury
P10.3	Subarachnoid haemorrhage due to birth injury
P10.4	Tentorial tear due to birth injury
P10.8	Other intracranial lacerations and haemorrhages due to birth injury
P10.9	Unspecified intracranial laceration and haemorrhage due to birth injury
P27.0	Wilson-Mikity syndrome
P27.1	Bronchopulmonary dysplasia originating in the perinatal period
P27.8	Other chronic respiratory diseases originating in the perinatal period
P27.9	Unspecified chronic respiratory disease originating in the perinatal period
P35.2	Congenital herpesviral [herpes simplex] infection
P35.9	Congenital viral disease, unspecified
P37.0	Congenital tuberculosis
P37.1	Congenital toxoplasmosis
P52.0	Intraventricular (nontraumatic) haemorrhage, grade 1, of fetus and newborn
P52.1	Intraventricular (nontraumatic) haemorrhage, grade 2, of fetus and newborn
P52.2	Intraventricular (nontraumatic) haemorrhage, grade 3, of fetus and newborn

ICD-10 Code	Description
P52.3	Unspecified intraventricular (nontraumatic) haemorrhage of fetus and newborn
P52.5	Subarachnoid (nontraumatic) haemorrhage of fetus and newborn
P52.6	Cerebellar (nontraumatic) and posterior fossa haemorrhage of fetus and newborn
P52.8	Other intracranial (nontraumatic) haemorrhages of fetus and newborn
P52.9	Intracranial (nontraumatic) haemorrhage of fetus and newborn, unspecified
P57.0	Kernicterus due to isoimmunization
P57.8	Other specified kernicterus
P57.9	Kernicterus, unspecified
P75	Meconium ileus in cystic fibrosis
P90	Convulsions of newborn
P91.1	Acquired periventricular cysts of newborn
P96.0	Congenital renal failure
Q00.1	Craniorachischisis
Q02	Microcephaly
Q03.0	Malformations of aqueduct of Sylvius
Q03.8	Other congenital hydrocephalus
Q04.1	Arhinencephaly
Q04.5	Megalencephaly
Q04.8	Other specified congenital malformations of brain
Q06.0	Amyelia
Q06.1	Hypoplasia and dysplasia of spinal cord
Q06.2	Diastematomyelia
Q06.3	Other congenital cauda equina malformations
Q06.4	Hydromyelia
Q06.8	Other specified congenital malformations of spinal cord
Q06.9	Congenital malformation of spinal cord, unspecified
Q07.8	Other specified congenital malformations of nervous system
Q07.9	Congenital malformation of nervous system, unspecified
Q10.4	Absence and agenesis of lacrimal apparatus
Q10.7	Congenital malformation of orbit
Q11.0	Cystic eyeball
Q11.1	Other anophthalmos
Q11.2	Microphthalmos
Q11.3	Macrophthalmos
Q12.0	Congenital cataract
Q12.1	Congenital displaced lens
Q12.2	Coloboma of lens
Q12.3	Congenital aphakia
Q12.4	Spherophakia
Q12.8	Other congenital lens malformations
Q12.9	Congenital lens malformation, unspecified
Q13.0	Coloboma of iris
Q13.1	Absence of iris
Q13.2	Other congenital malformations of iris
Q13.3	Congenital corneal opacity
Q13.4	Other congenital corneal malformations
Q13.8	Other congenital malformations of anterior segment of eye

ICD-10 Code	Description
Q13.9	Congenital malformation of anterior segment of eye, unspecified
Q14.0	Congenital malformation of vitreous humour
Q14.1	Congenital malformation of retina
Q14.2	Congenital malformation of optic disc
Q14.3	Congenital malformation of choroid
Q14.8	Other congenital malformations of posterior segment of eye
Q14.9	Congenital malformation of posterior segment of eye, unspecified
Q15.0	Congenital glaucoma
Q15.8	Other specified congenital malformations of eye
Q15.9	Congenital malformation of eye, unspecified
Q16.0	Congenital absence of (ear) auricle
Q16.1	Congenital absence, atresia and stricture of auditory canal (external)
Q16.2	Absence of eustachian tube
Q16.3	Congenital malformation of ear ossicles
Q16.4	Other congenital malformations of middle ear
Q16.5	Congenital malformation of inner ear
Q16.9	Congenital malformation of ear causing impairment of hearing, unspecified
Q18.8	Other specified congenital malformations of face and neck
Q20.1	Double outlet right ventricle
Q20.2	Double outlet left ventricle
Q20.5	Discordant atrioventricular connection
Q21.0	Ventricular septal defect
Q21.1	Atrial septal defect
Q21.2	Atrioventricular septal defect
Q21.4	Aortopulmonary septal defect
Q21.9	Congenital malformation of cardiac septum, unspecified
Q22.2	Congenital pulmonary valve insufficiency
Q22.3	Other congenital malformations of pulmonary valve
Q22.8	Other congenital malformations of tricuspid valve
Q22.9	Congenital malformation of tricuspid valve, unspecified
Q23.1	Congenital insufficiency of aortic valve
Q23.3	Congenital mitral insufficiency
Q23.8	Other congenital malformations of aortic and mitral valves
Q24.0	Dextrocardia
Q24.1	Laevocardia
Q24.2	Cor triatriatum
Q24.3	Pulmonary infundibular stenosis
Q24.4	Congenital subaortic stenosis
Q24.5	Malformation of coronary vessels
Q24.6	Congenital heart block
Q24.8	Other specified congenital malformations of heart
Q24.9	Congenital malformation of heart, unspecified
Q25.0	Patent ductus arteriosus
Q25.1	Coarctation of aorta
Q25.2	Atresia of aorta
Q25.3	Stenosis of aorta
Q25.7	Other congenital malformations of pulmonary artery

ICD-10 Code	Description
Q25.8	Other congenital malformations of great arteries
Q25.9	Congenital malformation of great arteries, unspecified
Q26.0	Congenital stenosis of vena cava
Q26.1	Persistent left superior vena cava
Q26.3	Partial anomalous pulmonary venous connection
Q26.5	Anomalous portal venous connection
Q26.9	Congenital malformation of great vein, unspecified
Q27.0	Congenital absence and hypoplasia of umbilical artery
Q27.1	Congenital renal artery stenosis
Q27.2	Other congenital malformations of renal artery
Q27.3	Peripheral arteriovenous malformation
Q27.4	Congenital phlebectasia
Q27.8	Other specified congenital malformations of peripheral vascular system
Q27.9	Congenital malformation of peripheral vascular system, unspecified
Q28.0	Arteriovenous malformation of precerebral vessels
Q28.1	Other malformations of precerebral vessels
Q28.3	Other malformations of cerebral vessels
Q28.9	Congenital malformation of circulatory system, unspecified
Q30.0	Choanal atresia
Q30.1	Agenesis and underdevelopment of nose
Q30.2	Fissured, notched and cleft nose
Q30.3	Congenital perforated nasal septum
Q30.8	Other congenital malformations of nose
Q30.9	Congenital malformation of nose, unspecified
Q31.0	Web of larynx
Q31.1	Congenital subglottic stenosis
Q31.2	Laryngeal hypoplasia
Q31.3	Laryngocele
Q31.5	Congenital laryngomalacia
Q31.8	Other congenital malformations of larynx
Q31.9	Congenital malformation of larynx, unspecified
Q32.0	Congenital tracheomalacia
Q32.2	Congenital bronchomalacia
Q32.3	Congenital stenosis of bronchus
Q32.4	Other congenital malformations of bronchus
Q33.0	Congenital cystic lung
Q33.1	Accessory lobe of lung
Q33.2	Sequestration of lung
Q33.3	Agenesis of lung
Q33.4	Congenital bronchiectasis
Q33.5	Ectopic tissue in lung
Q33.8	Other congenital malformations of lung
Q33.9	Congenital malformation of lung, unspecified
Q34.0	Anomaly of pleura
Q34.1	Congenital cyst of mediastinum
Q34.8	Other specified congenital malformations of respiratory system
Q34.9	Congenital malformation of respiratory system, unspecified

ICD-10 Code	Description
Q35.1	Cleft hard palate
Q35.3	Cleft soft palate
Q35.5	Cleft hard palate with cleft soft palate
Q35.7	Cleft uvula
Q35.9	Cleft palate, unspecified
Q36.0	Cleft lip, bilateral
Q36.1	Cleft lip, median
Q36.9	Cleft lip, unilateral
Q37.0	Cleft hard palate with bilateral cleft lip
Q37.1	Cleft hard palate with unilateral cleft lip
Q37.2	Cleft soft palate with bilateral cleft lip
Q37.3	Cleft soft palate with unilateral cleft lip
Q37.4	Cleft hard and soft palate with bilateral cleft lip
Q37.5	Cleft hard and soft palate with unilateral cleft lip
Q37.8	Unspecified cleft palate with bilateral cleft lip
Q37.9	Unspecified cleft palate with unilateral cleft lip
Q38.0	Congenital malformations of lips, not elsewhere classified
Q38.3	Other congenital malformations of tongue
Q38.4	Congenital malformations of salivary glands and ducts
Q38.6	Other congenital malformations of mouth
Q38.7	Pharyngeal pouch
Q38.8	Other congenital malformations of pharynx
Q39.0	Atresia of oesophagus without fistula
Q39.1	Atresia of oesophagus with tracheo-oesophageal fistula
Q39.2	Congenital tracheo-oesophageal fistula without atresia
Q39.3	Congenital stenosis and stricture of oesophagus
Q39.4	Oesophageal web
Q39.5	Congenital dilatation of oesophagus
Q39.8	Other congenital malformations of oesophagus
Q39.9	Congenital malformation of oesophagus, unspecified
Q40.2	Other specified congenital malformations of stomach
Q40.3	Congenital malformation of stomach, unspecified
Q40.8	Other specified congenital malformations of upper alimentary tract
Q41.1	Congenital absence, atresia and stenosis of jejunum
Q41.2	Congenital absence, atresia and stenosis of ileum
Q41.8	Congenital absence, atresia and stenosis of other specified parts of small intestine
Q42.0	Congenital absence, atresia and stenosis of rectum with fistula
Q42.1	Congenital absence, atresia and stenosis of rectum without fistula
Q42.2	Congenital absence, atresia and stenosis of anus with fistula
Q42.3	Congenital absence, atresia and stenosis of anus without fistula
Q42.8	Congenital absence, atresia and stenosis of other parts of large intestine
Q42.9	Congenital absence, atresia and stenosis of large intestine, part unspecified
Q43.1	Hirschsprung disease
Q43.3	Congenital malformations of intestinal fixation
Q43.4	Duplication of intestine
Q43.5	Ectopic anus
Q43.6	Congenital fistula of rectum and anus

ICD-10 Code	Description
Q43.9	Congenital malformation of intestine, unspecified
Q44.0	Agenesis, aplasia and hypoplasia of gallbladder
Q44.1	Other congenital malformations of gallbladder
Q44.3	Congenital stenosis and stricture of bile ducts
Q44.4	Choledochal cyst
Q44.5	Other congenital malformations of bile ducts
Q44.7	Other congenital malformations of liver
Q45.0	Agenesis, aplasia and hypoplasia of pancreas
Q45.1	Annular pancreas
Q45.2	Congenital pancreatic cyst
Q45.3	Other congenital malformations of pancreas and pancreatic duct
Q45.8	Other specified congenital malformations of digestive system
Q45.9	Congenital malformation of digestive system, unspecified
Q50.0	Congenital absence of ovary
Q51.0	Agenesis and aplasia of uterus
Q51.1	Doubling of uterus with doubling of cervix and vagina
Q51.2	Other doubling of uterus
Q51.3	Bicornate uterus
Q51.4	Unicornate uterus
Q51.5	Agenesis and aplasia of cervix
Q51.6	Embryonic cyst of cervix
Q51.7	Congenital fistulae between uterus and digestive and urinary tracts
Q51.8	Other congenital malformations of uterus and cervix
Q51.9	Congenital malformation of uterus and cervix, unspecified
Q52.1	Doubling of vagina
Q52.2	Congenital rectovaginal fistula
Q52.4	Other congenital malformations of vagina
Q54.0	Hypospadias, balanic
Q54.1	Hypospadias, penile
Q54.2	Hypospadias, penoscrotal
Q54.3	Hypospadias, perineal
Q54.8	Other hypospadias
Q54.9	Hypospadias, unspecified
Q55.0	Absence and aplasia of testis
Q55.5	Congenital absence and aplasia of penis
Q56.0	Hermaphroditism, not elsewhere classified
Q56.1	Male pseudohermaphroditism, not elsewhere classified
Q56.2	Female pseudohermaphroditism, not elsewhere classified
Q56.3	Pseudohermaphroditism, unspecified
Q56.4	Indeterminate sex, unspecified
Q60.2	Renal agenesis, unspecified
Q60.4	Renal hypoplasia, bilateral
Q60.5	Renal hypoplasia, unspecified
Q61.0	Congenital single renal cyst
Q61.1	Polycystic kidney, autosomal recessive
Q61.2	Polycystic kidney, autosomal dominant
Q61.3	Polycystic kidney, unspecified

ICD-10 Code	Description
Q61.5	Medullary cystic kidney
Q61.8	Other cystic kidney diseases
Q62.0	Congenital hydronephrosis
Q62.1	Atresia and stenosis of ureter
Q62.3	Other obstructive defects of renal pelvis and ureter
Q62.4	Agenesis of ureter
Q62.5	Duplication of ureter
Q62.6	Malposition of ureter
Q62.8	Other congenital malformations of ureter
Q63.0	Accessory kidney
Q63.1	Lobulated, fused and horseshoe kidney
Q63.2	Ectopic kidney
Q63.8	Other specified congenital malformations of kidney
Q63.9	Congenital malformation of kidney, unspecified
Q64.0	Epispadias
Q64.1	Exstrophy of urinary bladder
Q64.3	Other atresia and stenosis of urethra and bladder neck
Q64.4	Malformation of urachus
Q64.5	Congenital absence of bladder and urethra
Q64.6	Congenital diverticulum of bladder
Q64.7	Other congenital malformations of bladder and urethra
Q64.8	Other specified congenital malformations of urinary system
Q64.9	Congenital malformation of urinary system, unspecified
Q65.0	Congenital dislocation of hip, unilateral
Q65.1	Congenital dislocation of hip, bilateral
Q65.2	Congenital dislocation of hip, unspecified
Q65.8	Other congenital deformities of hip
Q65.9	Congenital deformity of hip, unspecified
Q67.5	Congenital deformity of spine
Q68.2	Congenital deformity of knee
Q71.0	Congenital complete absence of upper limb(s)
Q71.1	Congenital absence of upper arm and forearm with hand present
Q71.2	Congenital absence of both forearm and hand
Q71.3	Congenital absence of hand and finger(s)
Q71.4	Longitudinal reduction defect of radius
Q71.5	Longitudinal reduction defect of ulna
Q71.6	Lobster-claw hand
Q71.8	Other reduction defects of upper limb(s)
Q71.9	Reduction defect of upper limb, unspecified
Q72.0	Congenital complete absence of lower limb(s)
Q72.1	Congenital absence of thigh and lower leg with foot present
Q72.2	Congenital absence of both lower leg and foot
Q72.3	Congenital absence of foot and toe(s)
Q72.4	Longitudinal reduction defect of femur
Q72.5	Longitudinal reduction defect of tibia
Q72.6	Longitudinal reduction defect of fibula
Q72.7	Split foot

ICD-10 Code	Description
Q72.8	Other reduction defects of lower limb(s)
Q72.9	Reduction defect of lower limb, unspecified
Q73.0	Congenital absence of unspecified limb(s)
Q73.1	Phocomelia, unspecified limb(s)
Q73.8	Other reduction defects of unspecified limb(s)
Q74.0	Other congenital malformations of upper limb(s), including shoulder girdle
Q74.1	Congenital malformation of knee
Q74.2	Other congenital malformations of lower limb(s), including pelvic girdle
Q74.8	Other specified congenital malformations of limb(s)
Q74.9	Unspecified congenital malformation of limb(s)
Q75.1	Craniofacial dysostosis
Q75.3	Macrocephaly
Q75.4	Mandibulofacial dysostosis
Q75.5	Oculomandibular dysostosis
Q75.8	Other specified congenital malformations of skull and face bones
Q75.9	Congenital malformation of skull and face bones, unspecified
Q76.1	Klippel-Feil syndrome
Q76.2	Congenital spondylolisthesis
Q76.3	Congenital scoliosis due to congenital bony malformation
Q76.4	Other congenital malformations of spine, not associated with scoliosis
Q77.0	Achondrogenesis
Q77.1	Thanatophoric short stature
Q77.5	Dystrophic dysplasia
Q77.6	Chondroectodermal dysplasia
Q77.7	Spondyloepiphyseal dysplasia
Q77.8	Other osteochondrodysplasia with defects of growth of tubular bones and spine
Q77.9	Osteochondrodysplasia with defects of growth of tubular bones and spine, unspecified
Q78.0	Osteogenesis imperfecta
Q78.1	Polyostotic fibrous dysplasia
Q78.2	Osteopetrosis
Q78.3	Progressive diaphyseal dysplasia
Q78.4	Enchondromatosis
Q78.6	Multiple congenital exostoses
Q78.8	Other specified osteochondrodysplasias
Q79.0	Congenital diaphragmatic hernia
Q79.4	Prune belly syndrome
Q79.5	Other congenital malformations of abdominal wall
Q79.6	Ehlers-Danlos syndrome
Q79.8	Other congenital malformations of musculoskeletal system
Q80.0	Ichthyosis vulgaris
Q80.1	X-linked ichthyosis
Q80.2	Lamellar ichthyosis
Q80.3	Congenital bullous ichthyosiform erythroderma
Q80.8	Other congenital ichthyosis
Q80.9	Congenital ichthyosis, unspecified
Q82.0	Hereditary lymphoedema

ICD-10 Code	Description
Q82.2	Mastocytosis
Q82.3	Incontinentia pigmenti
Q82.9	Congenital malformation of skin, unspecified
Q85.0	Neurofibromatosis (nonmalignant)
Q85.9	Phakomatosis, unspecified
Q86.1	Fetal hydantoin syndrome
Q86.2	Dysmorphism due to warfarin
Q86.8	Other congenital malformation syndromes due to known exogenous causes
Q87.3	Congenital malformation syndromes involving early overgrowth
Q87.4	Marfan syndrome
Q87.5	Other congenital malformation syndromes with other skeletal changes
Q89.1	Congenital malformations of adrenal gland
Q89.2	Congenital malformations of other endocrine glands
Q89.3	Situs inversus
Q89.4	Conjoined twins
Q89.7	Multiple congenital malformations, not elsewhere classified
Q89.8	Other specified congenital malformations
Q89.9	Congenital malformation, unspecified
Q90.0	Trisomy 21, meiotic nondisjunction
Q90.1	Trisomy 21, mosaicism (mitotic nondisjunction)
Q90.2	Trisomy 21, translocation
Q90.9	Down syndrome, unspecified
Q92.2	Major partial trisomy
Q92.3	Minor partial trisomy
Q92.5	Duplications with other complex rearrangements
Q92.6	Extra marker chromosomes
Q92.9	Trisomy and partial trisomy of autosomes, unspecified
Q93.0	Whole chromosome monosomy, meiotic nondisjunction
Q93.1	Whole chromosome monosomy, mosaicism (mitotic nondisjunction)
Q93.6	Deletions seen only at prometaphase
Q93.7	Deletions with other complex rearrangements
Q93.9	Deletion from autosomes, unspecified
Q97.0	Karyotype 47,XXX
Q97.1	Female with more than three X chromosomes
Q97.2	Mosaicism, lines with various numbers of X chromosomes
Q97.3	Female with 46,XY karyotype
Q97.8	Other specified sex chromosome abnormalities, female phenotype
Q97.9	Sex chromosome abnormality, female phenotype, unspecified
Q98.0	Klinefelter syndrome karyotype 47,XXY
Q99.0	Chimera 46,XX/46,XY
Q99.1	46,XX true hermaphrodite
Q99.2	Fragile X chromosome
Q99.8	Other specified chromosome abnormalities
Q99.9	Chromosomal abnormality, unspecified

Appendix 7: Read Code, ICD-10 & Other Code Lists – Anxiety & Depression

Anxiety – Diagnostic Read Codes

Medcode	Read Code	Description
636	E200.00	Anxiety states
6939	E200000	Anxiety state unspecified
4069	E200100	Panic disorder
462	E200111	Panic attack
4659	E200200	Generalised anxiety disorder
1758	E200400	Chronic anxiety
4534	E200z00	Anxiety state NOS
1907	E202.00	Phobic disorders
16638	E202.11	Social phobic disorders
9944	E202.12	Phobic anxiety
2300	E202000	Phobia unspecified
3076	E202100	Agoraphobia with panic attacks
12838	E202200	Agoraphobia without mention of panic attacks
16199	E202300	Social phobia, fear of eating in public
31957	E202400	Social phobia, fear of public speaking
18603	E202500	Social phobia, fear of public washing
14729	E202z00	Phobic disorder NOS
1582	E205.11	Nervous exhaustion
791	E20z.11	Nervous breakdown
11940	E280.00	Acute panic state due to acute stress reaction
6221	E292000	Separation anxiety disorder
56924	E292400	Adjustment reaction with anxious mood
31522	E2D0.00	Disturbance of anxiety and fearfulness childhood/adolescent
35619	E2D0000	Childhood and adolescent overanxiousness disturbance
56026	E2D0100	Childhood and adolescent fearfulness disturbance
35594	E2D0z00	Disturbance anxiety and fearfulness childhood/adolescent NOS
9386	Eu40.00	[X]Phobic anxiety disorders
2571	Eu40000	[X]Agoraphobia
16729	Eu40011	[X]Agoraphobia without history of panic disorder
14890	Eu40012	[X]Panic disorder with agoraphobia
11602	Eu40100	[X]Social phobias
27685	Eu40y00	[X]Other phobic anxiety disorders
34064	Eu40z00	[X]Phobic anxiety disorder, unspecified
5385	Eu41.00	[X]Other anxiety disorders
8205	Eu41000	[X]Panic disorder [episodic paroxysmal anxiety]
6408	Eu41011	[X]Panic attack
4081	Eu41012	[X]Panic state
10344	Eu41100	[X]Generalized anxiety disorder
962	Eu41111	[X]Anxiety neurosis
35825	Eu41112	[X]Anxiety reaction
50191	Eu41113	[X]Anxiety state
24066	Eu41y00	[X]Other specified anxiety disorders
28167	Eu41y11	[X]Anxiety hysteria
23838	Eu41z00	[X]Anxiety disorder, unspecified
25638	Eu41z11	[X]Anxiety NOS
66806	Eu45215	[X]Nosophobia
17687	Eu51511	[X]Dream anxiety disorder
18032	Eu93000	[X]Separation anxiety disorder of childhood
24351	Eu93100	[X]Phobic anxiety disorder of childhood
29907	Eu93200	[X]Social anxiety disorder of childhood
61430	Eu93y12	[X]Childhood overanxious disorder

Medcode	Read Code	Description
42788	Eu40112	[X]Social neurosis
108107	8CAZ000	Patient given advice about management of anxiety
63521	8G52.00	Antiphobic therapy
9125	8G94.00	Anxiety management training
28925	8HHp.00	Referral for guided self-help for anxiety
25749	Z481.00	Phobia counselling
22159	Z4I7.00	Acknowledging anxiety
62935	Z4I7100	Recognising anxiety
28381	Z4I7200	Alleviating anxiety
26295	Z4I7211	Reducing anxiety
7999	Z4L1.00	Anxiety counselling
4634	E200500	Recurrent anxiety

Anxiety - Symptom Read Codes

Medcode	Read Code	Description
4127	13JK.00	Business worries
2291	13JK.14	Work worries
40578	13JM.14	Work worries
107410	173f.00	Anxiety about breathlessness
29608	1B12.00	'Nerves' - nervousness
3586	1B12.11	'Nerves'
514	1B12.12	Tension - nervous
131	1B13.00	Anxiousness
5902	1B13.11	Anxiousness - symptom
93401	1B13.12	Anxious
29569	1B14.00	Tenseness
2585	1B14.11	Tenseness - symptom
5347	1B1H.11	Fear
11890	1B1V.00	C/O - panic attack
18672	1Bb..00	Specific fear
22683	1Bb0.00	Fear of falling
18967	1Bb1.00	Fear of getting cancer
109887	1M61.00	Fearful with pain
13124	2258	O/E - anxious
8725	2259	O/E - nervous
19000	225J.00	O/E - panic attack
26331	225K.00	O/E - fearful mood
2509	R2y2.00	[D]Nervousness
17853	R2y2.11	[D]Nerves
10723	R2y2.12	[D]Nervous tension
7899	2253	O/E - distressed
101422	16ZB100	Feeling low or worried
2524	1BK..00	Worried

Anxiety - Screening Tool Read Codes

Medcode	Read Code	Description
19163	388b.00	Depression anxiety stress scales anxiety score
19631	388N.00	HAD scale: anxiety score
94196	388w.00	Generalised anxiety disorder 7 item score
100992	38Du.00	Improving Access to Psychological Therapies pro phobia scale
101323	38Du000	IAPT phobia scale - Soc sit due fear embarrass mak fool self
102106	38Du100	IAPT phobia scale - Cert situ fear panic attak distres symp
102133	38Du200	IAPT phobia scale - Cert situ becse fear particulr obj activ
105292	38GQ.00	Short health anxiety inventory
108416	38QN.00	Generalised anxiety disorder 2 scale
26079	ZR29.00	Beck anxiety inventory
40739	ZR2C.00	Beck anxiety standardised rating scale
52243	ZR3U.00	Clinical anxiety scale
110355	ZRkb.00	Speilberger state-trait anxiety inventory
64519	ZRkb.11	STAI - Speilberger state-trait anxiety inventory
95547	ZRrd.00	Zung's anxiety status inventory
72649	ZRre.00	Zung's self-rating anxiety scale
56445	ZRre.11	SASZ - Zung's self-rating anxiety scal
112968	ZRrd.11	ASI - Zung's anxiety status inventory
94671	388w.11	GAD-7 score
108194	6897	Anxiety screening
19630	388J.00	Hospital anxiety and depression scale
108928	38GJ000	EuroQol five dimension five level anxiety depression score
52655	ZR7..00	Depression anxiety scale
19245	ZRLr.00	Hospital anxiety and depression scale
35398	ZRLr.11	HAD - Hospital anxiety and depression scale
24820	ZRLr.12	HADS - Hospital anxiety and depression scale
56034	ZRVM.00	Leeds scale for the self-assessment of anxiety & depression
108245	6897000	Anxiety screening using questions

Anxiety – ICD-10 Codes

ICD-10 Code	Description
F40	Phobic anxiety disorders
F40.0	Agoraphobia
F40.1	Social phobias
F40.8	Other phobic anxiety disorders
F40.9	Phobic anxiety disorder, unspecified
F41	Other anxiety disorders
F41.0	Panic disorder [episodic paroxysmal anxiety]
F41.1	Generalized anxiety disorder
F41.8	Other specified anxiety disorders
F41.9	Anxiety disorder, unspecified

Depression - Diagnostic Read Codes

Medcode	Read Code	Description
44848	8BK0.00	Depression management programme
30483	8CAa.00	Patient given advice about management of depression
32841	8HHq.00	Referral for guided self-help for depression
12399	9H90.00	Depression annual review
12122	9H91.00	Depression medication review
30405	9H92.00	Depression interim review
42931	9HA0.00	On depression register
30583	9k4..00	Depression - enhanced services administration
65435	9k40.00	Depression - enhanced service completed
96995	9kQ..00	On full dose long term treatment depression - enh serv admin
51258	9Ov..00	Depression monitoring administration
71009	9Ov0.00	Depression monitoring first letter
72966	9Ov1.00	Depression monitoring second letter
91105	9Ov2.00	Depression monitoring third letter
88644	9Ov3.00	Depression monitoring verbal invite
85852	9Ov4.00	Depression monitoring telephone invite
2560	E11..12	Depressive psychoses
10610	E112.00	Single major depressive episode
5879	E112.11	Agitated depression
6546	E112.12	Endogenous depression first episode
6950	E112.13	Endogenous depression first episode
595	E112.14	Endogenous depression
34390	E112000	Single major depressive episode, unspecified
16506	E112100	Single major depressive episode, mild
15155	E112200	Single major depressive episode, moderate
15219	E112300	Single major depressive episode, severe, without psychosis
32159	E112400	Single major depressive episode, severe, with psychosis
7011	E112z00	Single major depressive episode NOS
15099	E113.00	Recurrent major depressive episode
6932	E113.11	Endogenous depression - recurrent
35671	E113000	Recurrent major depressive episodes, unspecified
29342	E113100	Recurrent major depressive episodes, mild
14709	E113200	Recurrent major depressive episodes, moderate
25697	E113300	Recurrent major depressive episodes, severe, no psychosis
24171	E113400	Recurrent major depressive episodes, severe, with psychosis
6482	E113700	Recurrent depression
25563	E113z00	Recurrent major depressive episode NOS
10825	E118.00	Seasonal affective disorder
27491	E11y200	Atypical depressive disorder
54607	E11z0	Unspecified affective psychoses
3489	E11z100	Rebound mood swings
9183	E11z200	Masked depression
33425	E11zz	Other affective psychosis NOS
8478	E130.00	Reactive depressive psychosis
17770	E130.11	Psychotic reactive depression
1055	E135.00	Agitated depression
1131	E204.00	Neurotic depression reactive type
1533	E290.00	Brief depressive reaction
36246	E290z00	Brief depressive reaction NOS
16632	E291.00	Prolonged depressive reaction
324	E2B..00	Depressive disorder NEC
2972	E2B0.00	Postviral depression
4323	E2B1.00	Chronic depression

Medcode	Read Code	Description
5726	Eu3..00	[X]Mood - affective disorders
4639	Eu32.00	[X]Depressive episode
9055	Eu32.11	[X]Single episode of depressive reaction
18510	Eu32.12	[X]Single episode of psychogenic depression
7604	Eu32.13	[X]Single episode of reactive depression
11717	Eu32000	[X]Mild depressive episode
9211	Eu32100	[X]Moderate depressive episode
9667	Eu32200	[X]Severe depressive episode without psychotic symptoms
41989	Eu32211	[X]Single episode agitated depressn w'out psychotic symptoms
22806	Eu32212	[X]Single episode major depression w'out psychotic symptoms
59386	Eu32213	[X]Single episode vital depression w'out psychotic symptoms
12099	Eu32300	[X]Severe depressive episode with psychotic symptoms
24117	Eu32311	[X]Single episode of major depression and psychotic symptoms
52678	Eu32312	[X]Single episode of psychogenic depressive psychosis
24112	Eu32313	[X]Single episode of psychotic depression
28863	Eu32314	[X]Single episode of reactive depressive psychosis
10667	Eu32400	[X]Mild depression
98346	Eu32500	[X]Major depression, mild
98252	Eu32600	[X]Major depression, moderately severe
98414	Eu32700	[X]Major depression, severe without psychotic symptoms
98417	Eu32800	[X]Major depression, severe with psychotic symptoms
6854	Eu32y00	[X]Other depressive episodes
10720	Eu32y11	[X]Atypical depression
56609	Eu32y12	[X]Single episode of masked depression NOS
2970	Eu32z00	[X]Depressive episode, unspecified
543	Eu32z11	[X]Depression NOS
3291	Eu32z12	[X]Depressive disorder NOS
28248	Eu32z13	[X]Prolonged single episode of reactive depression
5987	Eu32z14	[X] Reactive depression NOS
3292	Eu33.00	[X]Recurrent depressive disorder
8851	Eu33.11	[X]Recurrent episodes of depressive reaction
19696	Eu33.12	[X]Recurrent episodes of psychogenic depression
8902	Eu33.13	[X]Recurrent episodes of reactive depression
28756	Eu33.14	[X]Seasonal depressive disorder
8826	Eu33.15	[X]SAD - Seasonal affective disorder
29784	Eu33000	[X]Recurrent depressive disorder, current episode mild
29520	Eu33100	[X]Recurrent depressive disorder, current episode moderate
11329	Eu33211	[X]Endogenous depression without psychotic symptoms
11252	Eu33212	[X]Major depression, recurrent without psychotic symptoms
73991	Eu33214	[X]Vital depression, recurrent without psychotic symptoms
23731	Eu33311	[X]Endogenous depression with psychotic symptoms
32941	Eu33313	[X]Recurr severe episodes/major depression+psychotic symptom
31757	Eu33314	[X]Recurr severe episodes/psychogenic depressive psychosis
16861	Eu33315	[X]Recurrent severe episodes of psychotic depression
37764	Eu33316	[X]Recurrent severe episodes/reactive depressive psychosis
47731	Eu33y00	[X]Other recurrent depressive disorders
44300	Eu33z00	[X]Recurrent depressive disorder, unspecified
36616	Eu33z11	[X]Monopolar depression NOS
42857	Eu34.00	[X]Persistent mood affective disorders
21540	Eu34000	[X]Cyclothymia
7953	Eu34100	[X]Dysthymia
8584	Eu34111	[X]Depressive neurosis
10290	Eu34112	[X]Depressive personality disorder
7737	Eu34113	[X]Neurotic depression
50243	Eu34y00	[X]Other persistent mood affective disorders

Medcode	Read Code	Description
39767	Eu34z00	[X]Persistent mood affective disorder, unspecified
28008	Eu3y.00	[X]Other mood affective disorders
50998	Eu3y000	[X]Other single mood affective disorders
29921	Eu3y100	[X]Other recurrent mood affective disorders
19054	Eu3y111	[X]Recurrent brief depressive episodes
29579	Eu3yy00	[X]Other specified mood affective disorders
37090	Eu3z.00	[X]Unspecified mood affective disorder
32845	Eu92000	[X]Depressive conduct disorder
29527	R007z13	[D]Postoperative depression
41989	Eu32211	[X]Single episode agitated depressn w'out psychotic symptoms
33469	Eu33200	[X]Recurr depress disorder cur epi severe without psyc sympt

Depression - Symptom Read Codes

Medcode	Read Code	Description
1996	1B17.00	Depressed
2930	1B17.12	C/O - feeling unhappy
4824	1B17.11	C/O - feeling depressed
6021	1BO..00	Mood swings
8928	1BT..11	Low mood
9796	1B1U.00	Symptoms of depression
10015	1BT..00	Depressed mood
10438	1B1U.11	Depressive symptoms
12416	1S4..00	Mood observations
25435	1BQ..00	Loss of capacity for enjoyment
26028	1BT..12	Sad mood
30740	1BP..00	Loss of interest
48349	1S40.00	Dysphoric mood
100977	1JJ..00	Suspected depression
1908	2257	O/E - depressed
59869	1BP0.00	Loss of interest in previously enjoyable activity
21124	1BI..00	Blunted affect
53148	1BU..00	Loss of hope for the future

Depression – Screening Tool Read Codes

Medcode	Read Code	Description
4740	6891	Depression screen
12450	6896	Depression screening using questions
106647	3880100	Visual analogue mood scale
103903	6891000	Assessment using Whooley depression screen
13583	388f.00	Patient health questionnaire (PHQ-9) score
26817	388g.00	Beck depression inventory second edition score
19630	388J.00	Hospital anxiety and depression scale
91400	388l.00	BASDEC - Brief Assessment Schedule Depression Cards score
19409	388P.00	HAD scale: depression score
9970	388Z.00	Depression anxiety stress scales depression score
101250	38Dp.00	HAMD - Hamilton rating scale for depression
109588	38Dp.11	HRSD - Hamilton rating scale for depression
101423	38Dq.00	MADRS - Montgomery-Asberg depression rating scale
108928	38GJ000	EuroQol five dimension five level anxiety depression score
26224	ZR2A.00	Beck depression inventory
26080	ZR2A.11	BDI - Beck depression inventory
28442	ZR2G.00	Behaviour and mood disturbance scale
38058	ZR2h.00	Brief depression rating scale
113683	ZR2h.11	BDRS - Brief depression rating scale
64177	ZR3L.00	Child depression scale
95734	ZR3L.11	CDS - Child depression scale
60210	ZR3L100	Child depression scale, second research edition
52655	ZR7..00	Depression anxiety scale
54999	ZR8..00	Depression self rating scale
56130	ZR8..11	DSRS - Depression self rating scale
34275	ZRaH.00	Mood affective checklist
64584	ZRaH.11	MACL - Mood affective checklist
44287	ZRby.00	Profile of mood states
100194	ZRby.11	POMS - Profile of mood states
55288	ZRLfH00	Health of the Nation Outcome Scale item 7 - depressed mood
96038	ZRLfI00	Health of the Nation Outcome Scale item 7 - depressed mood
42975	ZRLU.00	Hamilton rating scale for depression
42836	ZRLU.11	HAMD - Hamilton rating scale for depression
44927	ZRLU.12	HRSD - Hamilton rating scale for depression
56982	ZRrc.00	Zung self-rating depression scale
37942	ZRrc.11	SDS - Zung self-rating depression scale
102465	ZRrI.00	Wakefield self-assessment depression inventory
89707	ZRrY.00	WHO depression scale
56034	ZRVM.00	Leeds scale for the self-assessment of anxiety & depression
4876	ZV79000	[V]Screening for depression
19245	ZRLr.00	Hospital anxiety and depression scale
35398	ZRLr.11	HAD - Hospital anxiety and depression scale
24820	ZRLr.12	HADS - Hospital anxiety and depression scale

Depression – ICD-10 Codes

ICD-10 Code	Description
F32	Depressive episode
F32.0	Mild depressive episode
F32.1	Moderate depressive episode
F32.2	Severe depressive episode without psychotic symptoms
F32.3	Severe depressive episode with psychotic symptoms
F32.8	Other depressive episodes
F32.9	Depressive episode, unspecified
F33	Recurrent depressive disorder
F33.0	Recurrent depressive disorder, current episode mild
F33.1	Recurrent depressive disorder, current episode moderate
F33.2	Recurrent depressive disorder, current episode severe without psychotic symptoms
F33.3	Recurrent depressive disorder, current episode severe with psychotic symptoms
F33.8	Other recurrent depressive disorders
F33.9	Recurrent depressive disorder, unspecified
F34	Persistent mood [affective] disorders
F34.0	Cyclothymia
F34.1	Dysthymia
F34.8	Other persistent mood [affective] disorders
F34.9	Persistent mood [affective] disorder, unspecified
F38	Other mood [affective] disorders
F38.0	Other single mood [affective] disorders
F38.8	Other specifiied mood [affective] disorders
F39	Unspecified mood [affective] disorder

Suicide – Read Codes

Medcode	Read Code	Description
2557	TK05.00	Suicide + selfinflicted poisoning by drug or medicine NOS
3246	TK...15	Attempted suicide
3406	TK...17	Para-suicide
3985	U2...13	[X]Suicide
5616	TK3y.00	Suicide + selfinflicted inj oth mean hang/strangle/suffocate
8229	U2...15	[X]Para-suicide
13557	TK30.00	Suicide and selfinflicted injury by hanging
14853	TK00.00	Suicide + selfinflicted poisoning by analgesic/antipyretic
15177	TK60.00	Suicide and selfinflicted injury by cutting
16485	TK01.00	Suicide + selfinflicted poisoning by barbiturates
17378	U2...14	[X]Attempted suicide
21027	TK...14	Suicide and self harm
21029	TK...00	Suicide and selfinflicted injury
22199	TK04.00	Suicide + selfinflicted poisoning by other drugs/medicines
23080	TK3..00	Suicide + selfinflicted injury by hang/strangulate/suffocate
23753	TK7..00	Suicide and selfinflicted injury by jumping from high place
27470	TK61.00	Suicide and selfinflicted injury by stabbing
27522	TK03.00	Suicide + selfinflicted poisoning tranquilliser/psychotropic
28080	TK07.00	Suicide + selfinflicted poisoning by corrosive/caustic subst
28115	TK51.00	Suicide and selfinflicted injury by shotgun
30292	TK0..00	Suicide + selfinflicted poisoning by solid/liquid substances
31854	TK4..00	Suicide and selfinflicted injury by drowning
33596	TK02.00	Suicide + selfinflicted poisoning by oth sedatives/hypnotics
35419	1BD5.00	High suicide risk
36084	TKx2.00	Suicide and selfinflicted injury by scald
36255	TK6..00	Suicide and selfinflicted injury by cutting and stabbing
41241	TKz..00	Suicide and selfinflicted injury NOS
42937	TK71.00	Suicide+selfinflicted injury-jump from oth manmade structure
46456	TKx1.00	Suicide and selfinflicted injury by burns or fire
47501	TKx..00	Suicide and selfinflicted injury by other means
48871	TK20.00	Suicide + selfinflicted poisoning by motor veh exhaust gas
49135	TK1y.00	Suicide and selfinflicted poisoning by other utility gas
51328	TK21.00	Suicide and selfinflicted poisoning by other carbon monoxide
51685	TK31.00	Suicide + selfinflicted injury by suffocation by plastic bag
52458	TK06.00	Suicide + selfinflicted poisoning by agricultural chemical
56137	TK52.00	Suicide and selfinflicted injury by hunting rifle
58605	TK7z.00	Suicide+selfinflicted injury-jump from high place NOS
60767	TK3z.00	Suicide + selfinflicted inj by hang/strangle/suffocate NOS
61113	TK72.00	Suicide+selfinflicted injury-jump from natural sites
61569	TK70.00	Suicide+selfinflicted injury-jump from residential premises
61618	TK2..00	Suicide + selfinflicted poisoning by other gases and vapours
59405	TKx0000	Suicide + selfinflicted injury-jumping before moving object
64744	TKx5.00	Suicide and selfinflicted injury by crashing motor vehicle
65309	TK54.00	Suicide and selfinflicted injury by other firearm
65448	TK6z.00	Suicide and selfinflicted injury by cutting and stabbing NOS
66063	TKxy.00	Suicide and selfinflicted injury by other specified means
66109	TK01000	Suicide and self inflicted injury by Amylobarbitone
66621	TK0z.00	Suicide + selfinflicted poisoning by solid/liquid subst NOS
66915	TK5..00	Suicide and selfinflicted injury by firearms and explosives
69969	TK10.00	Suicide + selfinflicted poisoning by gas via pipeline
70405	TK1..00	Suicide + selfinflicted poisoning by gases in domestic use
70946	TKx0.00	Suicide + selfinflicted injury-jump/lie before moving object
71159	TKx4.00	Suicide and selfinflicted injury by electrocution

Medcode	Read Code	Description
71375	TK11.00	Suicide + selfinflicted poisoning by liquified petrol gas
71843	TKxz.00	Suicide and selfinflicted injury by other means NOS
73628	TK2z.00	Suicide + selfinflicted poisoning by gases and vapours NOS
94412	TK1z.00	Suicide + selfinflicted poisoning by domestic gases NOS
94442	TK01400	Suicide and self inflicted injury by Phenobarbitone
96430	TKx7.00	Suicide and selfinflicted injury caustic subst, excl poison
98594	TKx3.00	Suicide and selfinflicted injury by extremes of cold
99566	TK01100	Suicide and self inflicted injury by Barbitone
101056	TK5z.00	Suicide and selfinflicted injury by firearms/explosives NOS
101906	TKx6.00	Suicide and selfinflicted injury by crashing of aircraft
104834	TK2y.00	Suicide + selfinflicted poisoning by other gases and vapours
106178	TK01z00	Suicide and self inflicted injury by barbiturates
106180	TKx0z00	Suicide + selfinflicted inj-jump/lie before moving obj NOS
108187	TK53.00	Suicide and selfinflicted injury by military firearms
5589	1BD4.00	Suicide risk
37194	1BD6.00	Moderate suicide risk
104485	1BDE.00	Suicide risk increased from previous level
1712	1BD1.00	Suicidal ideation
4067	1BD3.00	Suicidal plans
9504	1B19.11	Suicidal - symptom
15437	1B19.00	Suicidal
71955	8G6..00	Anti-suicide psychotherapy
71548	8G6Z.00	Anti-suicide psychotherapy NOS
99832	Z9K3.00	Suicide prevention
104354	8G61.00	Potential suicide care
110167	9j2..00	Initiation of suicide risk management document

Suicide – ICD-10 Codes

ICD-10 Code	Description
X60	Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics
X61	Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified
X62	Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified
X63	Intentional self-poisoning by and exposure to other drugs acting on the autonomic nervous system
X64	Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances
X65	Intentional self-poisoning by and exposure to alcohol
X66	Intentional self-poisoning by and exposure to organic solvents and halogenated hydrocarbons and their vapours
X67	Intentional self-poisoning by and exposure to carbon monoxide and other gases and vapours
X67.0	Intentional self-poisoning by and exposure to carbon monoxide from combustion engine exhaust
X67.1	Intentional self-poisoning by and exposure to carbon monoxide from utility gas
X67.2	Intentional self-poisoning by and exposure to carbon monoxide from other domestic fuels
X67.3	Intentional self-poisoning by and exposure to carbon monoxide from other sources
X67.4	Intentional self-poisoning by and exposure to carbon monoxide from unspecified sources
X67.8	Intentional self-poisoning by and exposure to other specified gases and vapours
X67.9	Intentional self-poisoning by and exposure to unspecified gases and vapours
X68	Intentional self-poisoning by and exposure to pesticides
X69	Intentional self-poisoning by and exposure to other and unspecified chemicals and noxious substances
X70	Intentional self-harm by hanging, strangulation and suffocation
X71	Intentional self-harm by drowning and submersion
X72	Intentional self-harm by handgun discharge
X73	Intentional self-harm by rifle, shotgun and larger firearm discharge
X74	Intentional self-harm by other and unspecified firearm discharge
X75	Intentional self-harm by explosive material
X76	Intentional self-harm by smoke, fire and flames
X77	Intentional self-harm by steam, hot vapours and hot objects
X78	Intentional self-harm by sharp object
X79	Intentional self-harm by blunt object
X80	Intentional self-harm by jumping from a high place
X81	Intentional self-harm by jumping or lying before moving object
X82	Intentional self-harm by crashing of motor vehicle
X83	Intentional self-harm by other specified means
X84	Intentional self-harm by unspecified means

Co-morbid Anxiety & Depression – Diagnostic Read Codes

Medcode	Read Code	Description
655	E200300	Anxiety with depression
15220	Eu34114	[X] Persistent anxiety depression
7749	Eu41211	[X] Mild anxiety depression
11913	Eu41200	[X] Mixed anxiety and depressive disorder

Co-morbid Anxiety & Depression – ICD-10 Codes

ICD-10 Code	Description
F41.2	Mixed anxiety and depressive disorder

HES OP Mental Health Codes

HES OP Treatment Specification	Description
711	Child and Adolescent Psychiatry
713	Psychotherapy
722	Liaison Psychiatry
725	Mental Health Recovery and Rehabilitation Service
726	Mental Health Dual Diagnosis Service

HES A&E Mental Health Codes

HES A&E Mental Health Code	Description
35	Psychiatric conditions

Appendix 8 – Lists of Indications For Antidepressants, Anxiolytics & Hypnotics

Antidepressants

Drug	Indications from NICE Child BNF Guidelines	Indications from NICE Adult BNF Guidelines
Amitriptyline	- neuropathic pain	- major depressive disorder - abdominal pain/discomfort - neuropathic pain - migraine prophylaxis - chronic tension-type headache prophylaxis - emotional lability in multiple sclerosis
Citalopram	- major depression	- depressive illness - panic disorder
Clomipramine	NR	- depressive illness - phobic and obsessional states - narcolepsy-associated cataplexy
Dosulepin	NR	- depressive illness
Duloxetine	NR	- depressive illness - generalised anxiety disorder - diabetic neuropathy - stress urinary incontinence
Escitalopram	NR	- depressive illness - generalised anxiety disorder - panic disorder - social anxiety disorder - obsessive-compulsive disorder (OCD)
Fluoxetine	- major depression	- major depression - obsessive-compulsive disorder (OCD) - bulimia nervosa - menopausal symptoms (breast cancer)
Flupentixol	NR	- depressive illness - schizophrenia/other psychoses
Fluvoxamine	- obsessive-compulsive disorder (OCD)	- depressive illness - obsessive-compulsive disorder (OCD)
Imipramine	- attention deficit hyperactivity disorder (ADHD) - nocturnal enuresis	- depressive illness - nocturnal enuresis
Lofepramine	NR	- depressive illness
Mirtazapine	NR	- major depression
Nortriptyline	- depressive illness	- depressive illness - neuropathic pain
Paroxetine	NR	- major depression - social anxiety disorder - post-traumatic stress disorder (PTSD) - generalised anxiety disorder - obsessive-compulsive disorder (OCD) - panic disorder
Pregabalin	NR	- generalised anxiety disorder - neuropathic pain - focal seizures
Sertraline	- major depression - obsessive-compulsive disorder (OCD)	- depressive illness - obsessive-compulsive disorder (OCD) - panic disorder - post-traumatic stress disorder (PTSD) - social anxiety disorder

Drug	Indications from NICE Child BNF Guidelines	Indications from NICE Adult BNF Guidelines
Venlafaxine	NR	- major depression - generalised anxiety disorder - social anxiety disorder - panic disorder - menopausal symptoms (breast cancer)

NR: not reported

Anxiolytics

Drug	Indications from NICE Child BNF Guidelines	Indications from NICE Adult BNF Guidelines
Buspirone	NR	- anxiety (short-term use)
Clobazam	- epilepsy - cluster seizures	- anxiety (short-term use) - epilepsy
Diazapam	- tetanus - muscle spasm - status epilepticus - febrile convulsions - convulsions due to poisoning - life-threatening acute drug-induced dystonic reactions	- anxiety/severe acute anxiety - acute panic attacks - acute anxiety and agitation - anxiety-associated insomnia - anxiety-associated dyspnoea (palliative care) - muscle spasm - tetanus - acute alcohol withdrawal - acute drug-induced dystonic reactions - premedication - sedation - status epilepticus - febrile convulsions - convulsions due to poisoning - muscle spasm pain (palliative care)
Hydroxyzine	- pruritus	- pruritus
Lorazepam	- premedication - status epilepticus - febrile convulsions - convulsions caused by poisoning	- anxiety (short-term use) - acute panic attacks - anxiety-associated insomnia - sedation - premedication - status epilepticus - febrile convulsions - convulsions caused by poisoning
Midazolam	- status epilepticus - febrile convulsions - sedation - premedication - induction of anaesthesia	- status epilepticus - febrile convulsions - sedation - premedication - induction of anaesthesia - adjunct to antipsychotic (palliative care) - convulsions (palliative care)

NR: not reported

Hypnotics

Drug	Indications from NICE Child BNF Guidelines	Indications from NICE Adult BNF Guidelines
Chloral hydrate	- sedation - insomnia	- insomnia
Melatonin	- sleep onset insomnia - delayed sleep phase syndrome	- insomnia - jet lag
Nitrazepam	NR	- insomnia
Promethazine	- symptomatic relief of allergy - insomnia - sedation - nausea/vomiting/vertigo/labyrinthine disorders/motion sickness (travel)	- symptomatic relief of allergy - anaphylactic reactions (emergency) - sedation - nausea/vomiting/vertigo/labyrinthine disorders/motion sickness (travel)
Temazepam	- premedication (surgery)	- premedication (surgery) - insomnia - sedation (dental procedures)
Triclofos	NR	NR
Zopiclone	NR	- insomnia

NR: not reported

Appendix 9: Read Code, ICD-10 Code & Prescription Lists – Maternal Mental Health Conditions

Severe Mental Illness - Diagnostic Read Codes

Medcode	Read Code	Description
2076	E21..00	Personality disorders
5652	E210.00	Paranoid personality disorder
14979	E211.00	Affective personality disorder
16178	E211000	Unspecified affective personality disorder
28227	E21..11	Neurotic personality disorder
12228	E211100	Hypomanic personality disorder
12707	E211300	Cyclothymic personality disorder
51497	E211z00	Affective personality disorder NOS
3369	E212.00	Schizoid personality disorder
67130	E212000	Unspecified schizoid personality disorder
61969	E212200	Schizotypal personality
14747	E212z00	Schizoid personality disorder NOS
23597	E213.00	Explosive personality disorder
6339	E213.11	Aggressive personality
20881	E214.00	Compulsive personality disorders
30395	E214000	Anankastic personality
1293	E214100	Obsessional personality
40057	E214.11	Anancastic personality
34456	E214z00	Compulsive personality disorder NOS
27481	E215.00	Histrionic personality disorders
44242	E215000	Unspecified histrionic personality disorder
19927	E215100	Munchausen's syndrome
4759	E215.11	Hysterical personality disorders
3709	E215200	Emotionally unstable personality
60522	E215z00	Histrionic personality disorder NOS
4515	E216.00	Inadequate personality disorder
48796	E216.11	Asthenic personality
21665	E216.12	Dependent personality
19931	E216.13	Labile personality
23977	E217.00	Antisocial or sociopathic personality disorder
68042	E217.11	Amoral personality
25146	E21y.00	Other personality disorders
37289	E21y000	Narcissistic personality disorder
35642	E21y100	Avoidant personality disorder
18565	E21y200	Borderline personality disorder
35763	E21y300	Passive-aggressive personality disorder
27803	E21y400	Eccentric personality disorder
1364	E21y500	Immature personality disorder
70899	E21y600	Masochistic personality disorder
21077	E21y700	Psychoneurotic personality disorder
2729	E21y711	Neurotic personality
15960	E21yz00	Other personality disorder NOS
15098	E21z.00	Personality disorder NOS
792	E21z.11	Psychopathic personality
20255	E2C3100	Pathological gambling
26859	Eu21.18	[X]Schizotypal personality disorder
26839	Eu34011	[X]Affective personality disorder
54848	Eu34012	[X]Cycloid personality
23854	Eu34013	[X]Cyclothymic personality
10290	Eu34112	[X]Depressive personality disorder

Medcode	Read Code	Description
21005	Eu6..00	[X]Disorders of adult personality and behaviour
50188	Eu60.00	[X]Specific personality disorders
21338	Eu60000	[X]Paranoid personality disorder
111667	Eu60011	[X]Expansive paranoid personality disorder
69000	Eu60013	[X]Querulant personality disorder
48687	Eu60014	[X]Sensitive paranoid personality disorder
38371	Eu60100	[X]Schizoid personality disorder
31632	Eu60200	[X]Dissocial personality disorder
105029	Eu60211	[X]Amoral personality disorder
32869	Eu60212	[X]Antisocial personality disorder
56502	Eu60213	[X]Asocial personality disorder
21671	Eu60214	[X]Psychopathic personality disorder
45188	Eu60215	[X]Sociopathic personality disorder
7745	Eu60300	[X]Emotionally unstable personality disorder
20839	Eu60311	[X]Aggressive personality disorder
31789	Eu60312	[X]Borderline personality disorder
58693	Eu60313	[X]Explosive personality disorder
43690	Eu60400	[X]Histrionic personality disorder
27945	Eu60411	[X]Hysterical personality disorder
69185	Eu60412	[X]Psychoinfantile personality disorder
52465	Eu60500	[X]Anankastic personality disorder
38100	Eu60511	[X]Compulsive personality disorder
22259	Eu60512	[X]Obsessional personality disorder
17420	Eu60513	[X]Obsessive-compulsive personality disorder
8424	Eu60600	[X]Anxious [avoidant] personality disorder
31819	Eu60700	[X]Dependent personality disorder
39535	Eu60711	[X]Asthenic personality disorder
38031	Eu60712	[X]Inadequate personality disorder
33741	Eu60713	[X]Passive personality disorder
59008	Eu60714	[X]Self defeating personality disorder
40104	Eu60800	[X]Addictive personality
49600	Eu60y00	[X]Other specific personality disorders
55969	Eu60y11	[X]Eccentric personality disorder
71431	Eu60y12	[X]Haltlose type personality disorder
49779	Eu60y13	[X]Immature personality disorder
53335	Eu60y14	[X]Narcissistic personality disorder
50348	Eu60y16	[X]Psychoneurotic personality disorder
42496	Eu60z00	[X]Personality disorder; unspecified
57567	Eu60z11	[X]Character neurosis NOS
49721	Eu60z12	[X]Pathological personality NOS
30603	Eu61.00	[X]Mixed and other personality disorders
56347	Eu62.00	[X]Enduring personality change not attrib to brain damag/dis
48232	Eu62000	[X]Enduring personality change after catastrophic experience
57440	Eu62011	[X]Personality change after concentration camp experiences
65695	Eu62012	[X]Personality change after disasters
53555	Eu62013	[X]Personality change aft prolong captiv+possib/being killed
41298	Eu62014	[X]Personlty chang aft expos life-threat sit/victim/terrorsm
31817	Eu62015	[X]Personality change after torture
37531	Eu62100	[X]Enduring personality change after psychiatric illness
35268	Eu62y00	[X]Other enduring personality changes
34881	Eu62y11	[X]Chronic pain personality syndrome
87000	Eu62z00	[X]Enduring personality change; unspecified
20973	Eu63.00	[X]Habit and impulse disorders
45543	Eu63000	[X]Pathological gambling
8863	Eu63011	[X]Compulsive gambling

Medcode	Read Code	Description
32142	Eu63100	[X]Pathological fire-setting
11731	Eu63200	[X]Pathological stealing
3165	Eu63300	[X]Trichotillomania
25152	Eu63y00	[X]Other habit and impulse disorders
58897	Eu63z00	[X]Habit and impulse disorder; unspecified
64838	Eu6y.00	[X]Other disorders of adult personality and behaviour
37622	Eu6y000	[X]Elaboration of physical symptoms for psychological reason
39353	Eu6y100	[X]Intent product/feign of symptom/disab eith physical/psych
31021	Eu6y111	[X] Munchausens syndrome
46560	Eu6y200	[X]Munchausen's by proxy
107644	Eu6y300	[X]Factitious disorder
34896	Eu6yy00	[X]Other specified disorders of adult personality/behaviour
39777	Eu6z.00	[X]Unspecified disorder of adult personality and behaviour
22713	1S42.00	Manic mood
19345	212T.00	Psychosis; schizophrenia + bipolar affective disord resolved
2117	E107.00	Schizo-affective schizophrenia
58862	E107000	Unspecified schizo-affective schizophrenia
61098	E107100	Subchronic schizo-affective schizophrenia
99000	E107.11	Cyclic schizophrenia
43800	E107200	Chronic schizo-affective schizophrenia
58866	E107300	Acute exacerbation subchronic schizo-affective schizophrenia
63478	E107400	Acute exacerbation of chronic schizo-affective schizophrenia
10575	E107z00	Schizo-affective schizophrenia NOS
14656	E11..00	Affective psychoses
37070	E110.00	Manic disorder; single episode
20110	E110000	Single manic episode; unspecified
14728	E110100	Single manic episode; mild
18909	E110.11	Hypomanic psychoses
24640	E110200	Single manic episode; moderate
43093	E110300	Single manic episode; severe without mention of psychosis
50218	E110400	Single manic episode; severe; with psychosis
109485	E110500	Single manic episode in partial or unspecified remission
36611	E110z00	Manic disorder; single episode NOS
26227	E111.00	Recurrent manic episodes
19967	E111000	Recurrent manic episodes; unspecified
8567	E11..11	Bipolar psychoses
46425	E111100	Recurrent manic episodes; mild
27739	E111200	Recurrent manic episodes; moderate
65811	E111300	Recurrent manic episodes; severe without mention psychosis
32295	E111400	Recurrent manic episodes; severe; with psychosis
58863	E111500	Recurrent manic episodes; partial or unspecified remission
46415	E111z00	Recurrent manic episode NOS
32159	E112400	Single major depressive episode; severe; with psychosis
24171	E113400	Recurrent major depressive episodes; severe; with psychosis
3702	E114.00	Bipolar affective disorder; currently manic
35738	E114000	Bipolar affective disorder; currently manic; unspecified
36126	E114100	Bipolar affective disorder; currently manic; mild
17385	E114.11	Manic-depressive - now manic
46434	E114200	Bipolar affective disorder; currently manic; moderate
16347	E114300	Bipolar affect disord; currently manic; severe; no psychosis
55829	E114400	Bipolar affect disord; currently manic;severe with psychosis
59011	E114500	Bipolar affect disord;currently manic; part/unspec remission
57605	E114z00	Bipolar affective disorder; currently manic; NOS
4677	E115.00	Bipolar affective disorder; currently depressed
15923	E115000	Bipolar affective disorder; currently depressed; unspecified

Medcode	Read Code	Description
35734	E115100	Bipolar affective disorder; currently depressed; mild
12831	E115.11	Manic-depressive - now depressed
27890	E115200	Bipolar affective disorder; currently depressed; moderate
35607	E115300	Bipolar affect disord; now depressed; severe; no psychosis
63701	E115400	Bipolar affect disord; now depressed; severe with psychosis
72026	E115500	Bipolar affect disord; now depressed; part/unspec remission
37296	E115z00	Bipolar affective disorder; currently depressed; NOS
31316	E116.00	Mixed bipolar affective disorder
31535	E116000	Mixed bipolar affective disorder; unspecified
24689	E116100	Mixed bipolar affective disorder; mild
63150	E116200	Mixed bipolar affective disorder; moderate
63284	E116300	Mixed bipolar affective disorder; severe; without psychosis
54195	E116400	Mixed bipolar affective disorder; severe; with psychosis
63651	E116500	Mixed bipolar affective disorder; partial/unspec remission
63583	E116z00	Mixed bipolar affective disorder; NOS
14784	E117.00	Unspecified bipolar affective disorder
49763	E117000	Unspecified bipolar affective disorder; unspecified
63698	E117100	Unspecified bipolar affective disorder; mild
68647	E117200	Unspecified bipolar affective disorder; moderate
73423	E117300	Unspecified bipolar affective disorder; severe; no psychosis
68326	E117400	Unspecified bipolar affective disorder;severe with psychosis
70721	E117500	Unspecified bipolar affect disord; partial/unspec remission
27986	E117z00	Unspecified bipolar affective disorder; NOS
60178	E11y.00	Other and unspecified manic-depressive psychoses
11596	E11y000	Unspecified manic-depressive psychoses
70925	E11y100	Atypical manic disorder
70399	E11y300	Other mixed manic-depressive psychoses
33426	E11yz00	Other and unspecified manic-depressive psychoses NOS
41992	E11z.00	Other and unspecified affective psychoses
54607	E11z000	Unspecified affective psychoses NOS
33425	E11zz00	Other affective psychosis NOS
8478	E130.00	Reactive depressive psychosis
8766	Eu0z.12	[X]Symptomatic psychosis NOS
20785	Eu20400	[X]Post-schizophrenic depression
9422	Eu25.00	[X]Schizoaffective disorders
33847	Eu25000	[X]Schizoaffective disorder; manic type
16905	Eu25011	[X]Schizoaffective psychosis; manic type
11055	Eu25100	[X]Schizoaffective disorder; depressive type
35274	Eu25111	[X]Schizoaffective psychosis; depressive type
33693	Eu25200	[X]Schizoaffective disorder; mixed type
104763	Eu25211	[X]Cyclic schizophrenia
37580	Eu25212	[X]Mixed schizophrenic and affective psychosis
58532	Eu25y00	[X]Other schizoaffective disorders
37681	Eu25z00	[X]Schizoaffective disorder; unspecified
33410	Eu25z11	[X]Schizoaffective psychosis NOS
12173	Eu30.00	[X]Manic episode
2741	Eu30000	[X]Hypomania
13024	Eu30100	[X]Mania without psychotic symptoms
9521	Eu30.11	[X]Bipolar disorder; single manic episode
21065	Eu30200	[X]Mania with psychotic symptoms
37102	Eu30211	[X]Mania with mood-congruent psychotic symptoms
48632	Eu30212	[X]Mania with mood-incongruent psychotic symptoms
32088	Eu30y00	[X]Other manic episodes
44513	Eu30z00	[X]Manic episode; unspecified
4678	Eu30z11	[X]Mania NOS

Medcode	Read Code	Description
6874	Eu31.00	[X]Bipolar affective disorder
16808	Eu31000	[X]Bipolar affective disorder; current episode hypomanic
26299	Eu31100	[X]Bipolar affect disorder cur epi manic wout psychotic symp
1531	Eu31.11	[X]Manic-depressive illness
6710	Eu31.12	[X]Manic-depressive psychosis
66153	Eu31.13	[X]Manic-depressive reaction
28277	Eu31200	[X]Bipolar affect disorder cur epi manic with psychotic symp
16562	Eu31300	[X]Bipolar affect disorder cur epi mild or moderate depressn
23713	Eu31400	[X]Bipol aff disord; curr epis sev depress; no psychot symp
44693	Eu31600	[X]Bipolar affective disorder; current episode mixed
104065	Eu31800	[X]Bipolar affective disorder type I
103915	Eu31900	[X]Bipolar affective disorder type II
104051	Eu31911	[X]Bipolar II disorder
53840	Eu31y00	[X]Other bipolar affective disorders
73924	Eu31y11	[X]Bipolar II disorder
51032	Eu31y12	[X]Recurrent manic episodes
33751	Eu31z00	[X]Bipolar affective disorder; unspecified
12099	Eu32300	[X]Severe depressive episode with psychotic symptoms
24117	Eu32311	[X]Single episode of major depression and psychotic symptoms
52678	Eu32312	[X]Single episode of psychogenic depressive psychosis
24112	Eu32313	[X]Single episode of psychotic depression
28863	Eu32314	[X]Single episode of reactive depressive psychosis
98417	Eu32800	[X]Major depression; severe with psychotic symptoms
101054	Eu32900	[X]Single major depr ep; severe with psych; psych in remiss
101153	Eu32A00	[X]Recurr major depr ep; severe with psych; psych in remiss
29451	Eu33213	[X]Manic-depress psychosis;depressd;no psychotic symptoms
47009	Eu33300	[X]Recurrent depress disorder cur epi severe with psyc symp
23731	Eu33311	[X]Endogenous depression with psychotic symptoms
28677	Eu33312	[X]Manic-depress psychosis;depressed type+psychotic symptoms
32941	Eu33313	[X]Recurr severe episodes/major depression+psychotic symptom
31757	Eu33314	[X]Recurr severe episodes/psychogenic depressive psychosis
16861	Eu33315	[X]Recurrent severe episodes of psychotic depression
37764	Eu33316	[X]Recurrent severe episodes/reactive depressive psychosis
31633	Eu3z.11	[X]Affective psychosis NOS
1915	1BH..00	Delusions
43462	1BH0.00	Delusion of persecution
17982	1BH..11	Delusion
12472	225E.00	O/E - paranoid delusions
52523	225F.00	O/E - delusion of persecution
4390	285..11	Psychotic condition; insight present
22644	286..11	Poor insight into psychotic condition
26178	8HHs.00	Referral to psychosis early intervention service
15958	E1...00	Non-organic psychoses
854	E10..00	Schizophrenic disorders
32222	E100.00	Simple schizophrenia
15733	E100000	Unspecified schizophrenia
23616	E100100	Subchronic schizophrenia
73295	E100.11	Schizophrenia simplex
3984	E100200	Chronic schizophrenic
57666	E100300	Acute exacerbation of subchronic schizophrenia
44498	E100400	Acute exacerbation of chronic schizophrenia
53625	E100z00	Simple schizophrenia NOS
30619	E101.00	Hebephrenic schizophrenia
66506	E101000	Unspecified hebephrenic schizophrenia
97919	E101400	Acute exacerbation of chronic hebephrenic schizophrenia

Medcode	Read Code	Description
48054	E101z00	Hebephrenic schizophrenia NOS
25546	E102.00	Catatonic schizophrenia
58716	E102000	Unspecified catatonic schizophrenia
99199	E102100	Subchronic catatonic schizophrenia
107222	E102400	Acute exacerbation of chronic catatonic schizophrenia
63867	E102z00	Catatonic schizophrenia NOS
1494	E103.00	Paranoid schizophrenia
33383	E103000	Unspecified paranoid schizophrenia
104760	E103100	Subchronic paranoid schizophrenia
31362	E103200	Chronic paranoid schizophrenia
51322	E103300	Acute exacerbation of subchronic paranoid schizophrenia
53032	E103400	Acute exacerbation of chronic paranoid schizophrenia
9281	E103z00	Paranoid schizophrenia NOS
576	E104.00	Acute schizophrenic episode
93167	E104.11	Oneirophrenia
66410	E105.00	Latent schizophrenia
102311	E105000	Unspecified latent schizophrenia
94299	E105200	Chronic latent schizophrenia
102446	E105z00	Latent schizophrenia NOS
38063	E106.00	Residual schizophrenia
39062	E10y.00	Other schizophrenia
33338	E10y000	Atypical schizophrenia
99070	E10y100	Coenesthopathic schizophrenia
92994	E10y.11	Cenesthopathic schizophrenia
49761	E10yz00	Other schizophrenia NOS
8407	E10z.00	Schizophrenia NOS
4261	E12..00	Paranoid states
14743	E120.00	Simple paranoid state
3890	E121.00	Chronic paranoid psychosis
14971	E122.00	Paraphrenia
62680	E123.00	Shared paranoid disorder
50868	E123.11	Folie a deux
31589	E12y.00	Other paranoid states
66766	E12y000	Paranoia querulans
31455	E12yz00	Other paranoid states NOS
12771	E12z.00	Paranoid psychosis NOS
31984	E13..00	Other nonorganic psychoses
17770	E130.11	Psychotic reactive depression
20228	E13..11	Reactive psychoses
7332	E132.00	Reactive confusion
15053	E133.00	Acute paranoid reaction
68058	E133.11	Bouffee delirante
24345	E134.00	Psychogenic paranoid psychosis
16333	E13y.00	Other reactive psychoses
23538	E13y100	Brief reactive psychosis
26119	E13yz00	Other reactive psychoses NOS
14965	E13z.00	Nonorganic psychosis NOS
3636	E13z.11	Psychotic episode NOS
16537	E1y..00	Other specified non-organic psychoses
22188	E1z..00	Non-organic psychosis NOS
8766	Eu0z.12	[X]Symptomatic psychosis NOS
17281	Eu2..00	[X]Schizophrenia; schizotypal and delusional disorders
34236	Eu20.00	[X]Schizophrenia
16764	Eu20000	[X]Paranoid schizophrenia
50060	Eu20011	[X]Paraphrenic schizophrenia

Medcode	Read Code	Description
43405	Eu20100	[X]Hebephrenic schizophrenia
53985	Eu20111	[X]Disorganised schizophrenia
61501	Eu20200	[X]Catatonic schizophrenia
20572	Eu20211	[X]Catatonic stupor
64533	Eu20212	[X]Schizophrenic catalepsy
35877	Eu20213	[X]Schizophrenic catatonia
31493	Eu20214	[X]Schizophrenic flexibilatis cerea
60013	Eu20300	[X]Undifferentiated schizophrenia
91547	Eu20311	[X]Atypical schizophrenia
64264	Eu20500	[X]Residual schizophrenia
24107	Eu20511	[X]Chronic undifferentiated schizophrenia
35848	Eu20600	[X]Simple schizophrenia
49420	Eu20y00	[X]Other schizophrenia
94001	Eu20y12	[X]Schizophreniform disord NOS
18053	Eu20y13	[X]Schizophrenifrm psychos NOS
34966	Eu20z00	[X]Schizophrenia; unspecified
39316	Eu21.00	[X]Schizotypal disorder
91511	Eu21.11	[X]Latent schizophrenic reaction
54387	Eu21.12	[X]Borderline schizophrenia
64993	Eu21.13	[X]Latent schizophrenia
62449	Eu21.14	[X]Prepsychotic schizophrenia
40386	Eu21.15	[X]Prodromal schizophrenia
49852	Eu21.16	[X]Pseudoneurotic schizophrenia
71250	Eu21.17	[X]Pseudopsychopathic schizophrenia
28562	Eu22.00	[X]Persistent delusional disorders
34389	Eu22000	[X]Delusional disorder
2113	Eu22011	[X]Paranoid psychosis
11172	Eu22012	[X]Paranoid state
47947	Eu22013	[X]Paraphrenia - late
65127	Eu22014	[X]Sensitiver Beziehungswahn
4843	Eu22015	[X]Paranoia
62405	Eu22100	[X]Delusional misidentification syndrome
55221	Eu22111	[X]Capgras syndrome
98821	Eu22200	[X]Cotard syndrome
66077	Eu22y00	[X]Other persistent delusional disorders
40981	Eu22y11	[X]Delusional dysmorphophobia
50248	Eu22y12	[X]Involutional paranoid state
55236	Eu22y13	[X]Paranoia querulans
49223	Eu22z00	[X]Persistent delusional disorder; unspecified
25019	Eu23.00	[X]Acute and transient psychotic disorders
36720	Eu23000	[X]Acute polymorphic psychot disord without symp of schizoph
50023	Eu23011	[X]Bouffee delirante
21455	Eu23012	[X]Cycloid psychosis
21595	Eu23100	[X]Acute polymorphic psychot disord with symp of schizophren
26143	Eu23112	[X]Cycloid psychosis with symptoms of schizophrenia
11778	Eu23200	[X]Acute schizophrenia-like psychotic disorder
59096	Eu23211	[X]Brief schizophreniform disorder
70884	Eu23212	[X]Brief schizophrenifrm psych
94604	Eu23214	[X]Schizophrenic reaction
44307	Eu23300	[X]Other acute predominantly delusional psychotic disorders
27770	Eu23312	[X]Psychogenic paranoid psychosis
44503	Eu23y00	[X]Other acute and transient psychotic disorders
34168	Eu23z00	[X]Acute and transient psychotic disorder; unspecified
31707	Eu23z11	[X]Brief reactive psychosis NOS
29651	Eu23z12	[X]Reactive psychosis

Medcode	Read Code	Description
51302	Eu24.00	[X]Induced delusional disorder
105606	Eu24.11	[X]Folie a deux
47230	Eu24.12	[X]Induced paranoid disorder
11973	Eu24.13	[X]Induced psychotic disorder
51903	Eu25012	[X]Schizophreniform psychosis; manic type
41022	Eu25112	[X]Schizophreniform psychosis; depressive type
30985	Eu2y.00	[X]Other nonorganic psychotic disorders
31738	Eu2y.11	[X]Chronic hallucinatory psychosis
11244	Eu2z.00	[X]Unspecified nonorganic psychosis
694	Eu2z.11	[X]Psychosis NOS
31738	Eu2y.11	[X]Chronic hallucinatory psychosis
11244	Eu2z.00	[X]Unspecified nonorganic psychosis
694	Eu2z.11	[X]Psychosis NOS

Severe Mental Illness - ICD-10 Codes

ICD-10 Code	Description
F20	Schizophrenia
F20.0	Paranoid schizophrenia
F20.1	Hebephrenic schizophrenia
F20.2	Catatonic schizophrenia
F20.3	Undifferntiated schizophrenia
F20.4	Post-schizophrenic depression
F20.5	Residual schizophrenia
F20.6	Simple schizophrenia
F20.8	Other schizophrenia
F20.9	Schizophrenia, unspecified
F21	Schizotypal disorder
F22	Persistent delusional disorders
F22.0	Delusional disorder
F22.8	Other persistent delusional disorders
F22.9	Persistent delusional disorder, unspecified
F23	Acute and transient psychotic disorders
F23.0	Acute polymorphic psychotic disorder without symptoms of schizophrenia
F23.1	Acute polymorphic psychotic disorder with symptoms of schizophrenia
F23.2	Acute schizophrenia-like psychotic disorder
F23.3	Other acute predominantly delusional psychotic disorders
F23.8	Other acute and transient psychotic disorders
F23.9	Acute and transient psychotic disorder, unspecified
F24	Induced delusional disorder
F25	Schizoaffective disorders
F25.0	Schizoaffective disorder, manic type
F25.1	Schizoaffective disorder, depressive type
F25.2	Schizoaffective disorder, mixed type
F25.8	Other schizoaffective disorders
F25.9	Schizoaffective disorder, unspecified
F28	Other nonorganic psychotic disorders
F29	Unspecified nonorganic psychosis
F30	Manic episode
F30.0	Hypomania
F30.1	Mania without psychotic symptoms
F30.2	Mania with psychotic symptoms
F30.8	Other manic episodes
F30.9	Manic episode, unspecified
F31	Bipolar affective disorder
F31.0	Bipolar affective disorder, current episode hypomanic
F31.1	Bipolar affective disorder, current episode manic without psychotic symptoms
F31.2	Bipolar affective disorder, current episode manic with psychotic symptoms
F31.3	Bipolar affective disorder, current episode mild or moderate depression
F31.4	Bipolar affective disorder, current episode severe depression without psychotic symptoms
F31.5	Bipolar affective disorder, current episode severe depression with psychotic symptoms
F31.6	Bipolar affective disorder, current episode mixed
F31.8	Other bipolar affective disorders
F31.9	Bipolar affective disorder, unspecified
F60	Specific personality disorders
F60.0	Paranoid personality disorder
F60.1	Schizoid personality disorder
F60.2	Dissocial personality disorder

ICD-10 Code	Description
F60.3	Emotionally unstable personality disorder
F60.4	Histrionic personality disorder
F60.5	Anankastic personality disorder
F60.6	Anxious [avoidant] personality disorder
F60.7	Dependent personality disorder
F60.8	Other specific personality disorders
F60.9	Personality disorder, unspecified
F61	Mixed and other personality disorders
F62	Enduring personality changes, not attributable to brain damage and disease
F62.0	Enduring personality change after catastrophic experience
F62.1	Enduring personality change after psychiatric illness
F62.8	Other enduring personality changes
F62.9	Enduring personality change, unspecified
F63	Habit and impulse disorders
F63.0	Pathological gambling
F63.1	Pathological fire-setting [pyromania]
F63.2	Pathological stealing [kleptomania]
F63.3	Trichotillomania
F63.8	Other habit and impulse disorders
F63.9	Habit and impulse disorder, unspecified

Affective Psychotic Disorders - Symptom Read Codes

Medcode	Read Code	Description
3881	1B16.00	Agitated
1996	1B17.00	Depressed
4824	1B17.11	C/O - feeling depressed
1914	1B1E.00	Hallucinations
9796	1B1U.00	Symptoms of depression
10438	1B1U.11	Depressive symptoms
25435	1BQ..00	Loss of capacity for enjoyment
10015	1BT..00	Depressed mood
8928	1BT..11	Low mood
53148	1BU..00	Loss of hope for the future
18575	1BY..00	Elevated mood
100977	1JJ..00	Suspected depression
1908	2257	O/E - depressed
32585	225C.00	O/E - elated
8766	Eu0z.12	[X]Symptomatic psychosis NOS
15066	F481K00	Visual hallucinations
2455	R001.00	[D]Hallucinations
12120	R001000	[D]Hallucinations; auditory
12064	R001400	[D]Visual hallucinations
19916	R001z00	[D]Hallucinations NOS

Mood Stabilisers

- Lithium

Non-Affective Psychotic Disorders - Symptom Read Codes

Medcode	Read Code	Description
26155	28L..00	O/E - impulsive behaviour
2235	E2C..00	Disturbance of conduct NEC
2040	E2C0.00	Aggressive unsocial conduct disorder
41599	E2C4.00	Mixed disturbance of conduct and emotion
1914	1B1E.00	Hallucinations
32875	1BH1.00	Grandiose delusions
55479	1BH2.00	Ideas of reference
22643	1BH3.00	Paranoid ideation
15066	F481K00	Visual hallucinations
2455	R001.00	[D]Hallucinations
12120	R001000	[D]Hallucinations; auditory
12064	R001400	[D]Visual hallucinations
19916	R001z00	[D]Hallucinations NOS

Antipsychotics

- Amisulpride
- Amitriptyline
- Aripiprazole
- Benperidol
- Chlorpromazine
- Chlorprothixene
- Clozapine
- Droperidol
- Flupentixol
- Fluphenaxine
- Haloperidol
- Levomepromazine
- Loxapine
- Lurasidone
- Olanzapine
- Oxpertine
- Paliperidone
- Pericyazine
- Perphenazine
- Pimozide
- Prochlorperazine
- Promazine
- Quetiapine
- Remoxipride
- Risperidone
- Sertindole
- Sulpiride
- Thioridazine
- Trifluoperazine
- Trifluperidol
- Zotepine
- Zuclopenthixol

Common Mental Health Disorders – Diagnostic Read Codes

Medcode	Read Code	Description
19000	225J.00	O/E - panic attack
63521	8G52.00	Antiphobic therapy
9125	8G94.00	Anxiety management training
28925	8HHp.00	Referral for guided self-help for anxiety
25051	E030000	Acute confusional state; post traumatic
61238	E031000	Subacute confusional state; post traumatic
29937	E131.00	Acute hysterical psychosis
22117	E13y000	Psychogenic stupor
9686	E2...00	Neurotic; personality and other nonpsychotic disorders
5249	E20..00	Neurotic disorders
636	E200.00	Anxiety states
6939	E200000	Anxiety state unspecified
4069	E200100	Panic disorder
462	E200111	Panic attack
4659	E200200	Generalised anxiety disorder
655	E200300	Anxiety with depression
1758	E200400	Chronic anxiety
4634	E200500	Recurrent anxiety
4534	E200z00	Anxiety state NOS
2188	E201.00	Hysteria
41572	E201000	Hysteria unspecified
3438	E201100	Hysterical blindness
44739	E201200	Hysterical deafness
23598	E201300	Hysterical tremor
34696	E201400	Hysterical paralysis
16484	E201500	Hysterical seizures
33702	E201511	Fit - hysterical
15431	E201600	Other conversion disorder
46399	E201611	Astasia - abasia; hysterical
4143	E201612	Globus hystericus
4269	E201700	Hysterical amnesia
4775	E201800	Hysterical fugue
43302	E201900	Multiple personality
23490	E201A00	Dissociative reaction unspecified
29322	E201B00	Compensation neurosis
24525	E201C00	Phantom pregnancy
23354	E201z00	Hysteria NOS
4105	E201z11	Aphonia - hysterical
24638	E201z12	Ataxia - hysterical
40066	E201z13	Ganser's syndrome - hysterical
1907	E202.00	Phobic disorders
16638	E202000	Phobia unspecified
9944	E202100	Agoraphobia with panic attacks
2300	E202.11	Social phobic disorders
3076	E202.12	Phobic anxiety
12838	E202200	Agoraphobia without mention of panic attacks
16199	E202300	Social phobia; fear of eating in public
31957	E202400	Social phobia; fear of public speaking
18603	E202500	Social phobia; fear of public washing
28106	E202600	Acrophobia
28938	E202700	Animal phobia

Medcode	Read Code	Description
1723	E202800	Claustrophobia
31672	E202900	Fear of crowds
4167	E202A00	Fear of flying
1510	E202B00	Cancer phobia
2366	E202C00	Dental phobia
10390	E202D00	Fear of death
6071	E202E00	Fear of pregnancy
14729	E202z00	Phobic disorder NOS
38543	E202z11	Weight fixation
3208	E203.00	Obsessive-compulsive disorders
47365	E203000	Compulsive neurosis
5678	E203100	Obsessional neurosis
2030	E203.11	Anancastic neurosis
15566	E203z00	Obsessive-compulsive disorder NOS
3361	E205.00	Neurasthenia - nervous debility
5305	E206.00	Depersonalisation syndrome
966	E207.00	Hypochondriasis
42000	E20y.00	Other neurotic disorders
15321	E20y000	Somatization disorder
56941	E20y011	Briquet's disorder
3685	E20y100	Writer's cramp neurosis
39518	E20y200	Other occupational neurosis
72171	E20y300	Psychasthenic neurosis
43050	E20yz00	Other neurotic disorder NOS
14780	E20z.00	Neurotic disorder NOS
791	E20z.11	Nervous breakdown
44212	E260.00	Psychogenic musculoskeletal symptoms
48561	E260000	Psychogenic paralysis
56800	E260100	Psychogenic torticollis
15035	E260z00	Psychogenic musculoskeletal symptoms NOS
38134	E261.00	Psychogenic respiratory symptoms
32034	E261000	Psychogenic air hunger
15483	E261100	Psychogenic cough
47809	E261200	Psychogenic hiccough
20053	E261300	Psychogenic hyperventilation
23413	E261400	Psychogenic yawning
41615	E261500	Psychogenic aphonia
34664	E261z00	Psychogenic respiratory symptom NOS
29448	E262.00	Psychogenic cardiovascular symptoms
15292	E262000	Cardiac neurosis
15284	E262200	Neurocirculatory asthenia
30961	E262300	Psychogenic cardiovascular disorder
15034	E262z00	Psychogenic cardiovascular symptom NOS
29461	E263.00	Psychogenic skin symptoms
15959	E263000	Psychogenic pruritus
15224	E263z00	Psychogenic skin symptoms NOS
31422	E264.00	Psychogenic gastrointestinal tract symptoms
37695	E264000	Psychogenic aerophagy
4963	E264.11	Globus abdominalis
2871	E264200	Cyclical vomiting - psychogenic
15371	E264300	Psychogenic diarrhoea
10158	E264311	Spurious diarrhoea
3869	E264400	Psychogenic dyspepsia
15939	E264500	Psychogenic constipation
71437	E264z00	Psychogenic gastrointestinal tract symptom NOS

Medcode	Read Code	Description
68379	E265.00	Psychogenic genitourinary tract symptoms
20109	E265100	Psychogenic vaginismus
44547	E265200	Psychogenic dysmenorrhea
55781	E265300	Psychogenic dysuria
73547	E265z00	Psychogenic genitourinary tract symptom NOS
89237	E267.00	Psychogenic symptom of special sense organ
62400	E26y.00	Other psychogenic malfunction
96391	E26yz00	Other psychogenic malfunction NOS
5067	E26z.00	Psychosomatic disorder NOS
40311	E278.00	Psychalgia
53766	E278000	Psychogenic pain unspecified
45205	E278200	Psychogenic backache
54373	E278z00	Psychalgia NOS
24847	E283100	Acute posttrauma stress state
20802	E28z.12	Flying phobia
27742	E28z.13	Stage fright
62193	E292300	Specific academic or work inhibition
67304	E292311	Specific academic or work inhibition
28302	E292312	Specific work inhibition
32387	E29y100	Other post-traumatic stress disorder
50106	E2y..00	Other specified neuroses or other mental disorders
42410	E2z..00	Neuroses or other mental disorder NOS
15220	Eu34114	[X]Persistant anxiety depression
23808	Eu4..00	[X]Neurotic; stress - related and somoform disorders
9386	Eu40.00	[X]Phobic anxiety disorders
2571	Eu40000	[X]Agoraphobia
16729	Eu40011	[X]Agoraphobia without history of panic disorder
14890	Eu40012	[X]Panic disorder with agoraphobia
11602	Eu40100	[X]Social phobias
42788	Eu40112	[X]Social neurosis
9785	Eu40200	[X]Specific (isolated) phobias
67965	Eu40211	[X]Acrophobia
18248	Eu40212	[X]Animal phobias
11280	Eu40213	[X]Claustrophobia
12635	Eu40214	[X]Simple phobia
12508	Eu40300	[X]Needle phobia
27685	Eu40y00	[X]Other phobic anxiety disorders
34064	Eu40z00	[X]Phobic anxiety disorder; unspecified
7222	Eu40z11	[X]Phobia NOS
67898	Eu40z12	[X]Phobic state NOS
5385	Eu41.00	[X]Other anxiety disorders
8205	Eu41000	[X]Panic disorder [episodic paroxysmal anxiety]
6408	Eu41011	[X]Panic attack
4081	Eu41012	[X]Panic state
10344	Eu41100	[X]Generalized anxiety disorder
962	Eu41111	[X]Anxiety neurosis
35825	Eu41112	[X]Anxiety reaction
50191	Eu41113	[X]Anxiety state
11913	Eu41200	[X]Mixed anxiety and depressive disorder
7749	Eu41211	[X]Mild anxiety depression
44321	Eu41300	[X]Other mixed anxiety disorders
24066	Eu41y00	[X]Other specified anxiety disorders
28167	Eu41y11	[X]Anxiety hysteria
23838	Eu41z00	[X]Anxiety disorder; unspecified
25638	Eu41z11	[X]Anxiety NOS

Medcode	Read Code	Description
5304	Eu42.00	[X]Obsessive - compulsive disorder
24251	Eu42000	[X]Predominantly obsessional thoughts or ruminations
21836	Eu42100	[X]Predominantly compulsive acts [obsessional rituals]
20634	Eu42.11	[X]Anankastic neurosis
22019	Eu42.12	[X]Obsessive-compulsive neurosis
18399	Eu42200	[X]Mixed obsessional thoughts and acts
38809	Eu42y00	[X]Other obsessive-compulsive disorders
22721	Eu42z00	[X]Obsessive-compulsive disorder; unspecified
7813	Eu43015	[X]Psychic shock
4171	Eu43100	[X]Post - traumatic stress disorder
32182	Eu43111	[X]Traumatic neurosis
101785	Eu43300	[X]Acute post-traumatic stress disorder follow military comb
101725	Eu43400	[X]Chron post-traumatic stress disorder follow military comb
22136	Eu44.00	[X]Dissociative [conversion] disorders
35311	Eu44000	[X]Dissociative amnesia
52161	Eu44100	[X]Dissociative fugue
27588	Eu44.11	[X]Conversion hysteria
28168	Eu44.12	[X]Conversion reaction
40994	Eu44.13	[X]Hysteria
39826	Eu44.14	[X]Hysterical psychosis
56141	Eu44200	[X]Dissociative stupor
39747	Eu44300	[X]Trance and possession disorders
34978	Eu44400	[X]Dissociative motor disorders
12147	Eu44411	[X]Psychogenic aphonia
18801	Eu44412	[X]Psychogenic dysphonia
56966	Eu44500	[X]Dissociative convulsions
11354	Eu44511	[X]Pseudoseizures
27633	Eu44600	[X]Dissociative anaesthesia and sensory loss
50121	Eu44611	[X]Psychogenic deafness
88758	Eu44700	[X]Mixed dissociative [conversion] disorders
64166	Eu44y00	[X]Other dissociative [conversion] disorders
46567	Eu44y11	[X]Ganser's syndrome
39919	Eu44y12	[X]Multiple personality
16988	Eu44y13	[X]Psychogenic confusion
68259	Eu44y14	[X]Psychogenic twilight state
48906	Eu44z00	[X]Dissociative [conversion] disorder; unspecified
18049	Eu45.00	[X]Somatoform disorders
24439	Eu45000	[X]Somatization disorder
23704	Eu45011	[X]Multiple psychosomatic disorder
59682	Eu45012	[X]Briquet's syndrome
57877	Eu45100	[X]Undifferentiated somatoform disorder
34735	Eu45111	[X]Undifferentiated psychosomatic disorder
7537	Eu45200	[X]Hypochondriacal disorder
12626	Eu45211	[X]Body dysmorphic disorder
30680	Eu45212	[X]Dysmorphophobia nondelusional
24264	Eu45213	[X]Hypochondriacal neurosis
10870	Eu45214	[X]Hypochondriasis
66806	Eu45215	[X]Nosophobia
41038	Eu45300	[X]Somatoform autonomic dysfunction
44269	Eu45311	[X]Cardiac neurosis
32632	Eu45312	[X]Da Costa's syndrome
63259	Eu45313	[X]Gastric neurosis
50793	Eu45314	[X]Neurocirculatory asthenia
12715	Eu45316	[X]Psychogenic cough
43316	Eu45317	[X]Psychogenic diarrhoea

Medcode	Read Code	Description
16714	Eu45318	[X]Psychogenic dyspepsia
53122	Eu45319	[X]Psychogenic dysuria
47698	Eu45320	[X]Psychogenic flatulence
53737	Eu45321	[X]Psychogenic hiccough
12830	Eu45322	[X]Psychogenic hyperventilat
17081	Eu45323	[X]Psychogenic freq micturit
16560	Eu45324	[X]Psychogenic IBS
93067	Eu45325	[X]Psychogenic pylorospasm
30179	Eu45400	[X]Persistent somatoform pain disorder
54382	Eu45411	[X]Psychalgia
38521	Eu45412	[X]Psychogenic backache
29329	Eu45413	[X]Psychogenic headache
36040	Eu45414	[X]Somatoform pain disorder
12453	Eu45500	[X]Globus pharyngeus
100086	Eu45511	[X]Globus hystericus
62002	Eu45y00	[X]Other somatoform disorders
46925	Eu45y11	[X]Psychogenic dysmenorrhoea
20906	Eu45y12	[X]Globus hystericus
16679	Eu45y13	[X]Psychogenic pruritis
36009	Eu45y14	[X]Psychogenic torticollis
48671	Eu45z00	[X]Somatoform disorder; unspecified
19242	Eu45z11	[X]Psychosomatic disorder NOS
28090	Eu46.00	[X]Other neurotic disorders
16561	Eu46000	[X]Neurasthenia
9656	Eu46011	[X]Fatigue syndrome
9265	Eu46100	[X]Depersonalization - derealization syndrome
44331	Eu46y00	[X]Other specified neurotic disorders
100116	Eu46y11	[X]Briquet's disorder
47367	Eu46y12	[X]Dhat syndrome
11339	Eu46y13	[X]Occupational neurosis; including writer's cramp
61753	Eu46y14	[X]Psychasthenia
90597	Eu46y15	[X]Psychasthenia neurosis
44586	Eu46y16	[X]Psychogenic syncope
49628	Eu46z00	[X]Neurotic disorder; unspecified
21431	Eu46z11	[X]Neurosis NOS
37089	Eu52611	[X]Psychogenic dyspareunia
99609	ZS7C700	Post-traumatic mutism
2923	62T1.00	Puerperal depression
44848	8BK0.00	Depression management programme
32841	8HHq.00	Referral for guided self-help for depression
12399	9H90.00	Depression annual review
12122	9H91.00	Depression medication review
30405	9H92.00	Depression interim review
42931	9HA0.00	On depression register
44936	9HA1.00	Removed from depression register
96995	9kQ..00	On full dose long term treatment depression - enh serv admin
2114	E03y300	Unspecified puerperal psychosis
2560	E11..12	Depressive psychoses
10610	E112.00	Single major depressive episode
5879	E112000	Single major depressive episode; unspecified
6546	E112100	Single major depressive episode; mild
6950	E112.11	Agitated depression
595	E112.12	Endogenous depression first episode
34390	E112.13	Endogenous depression first episode
16506	E112.14	Endogenous depression

Medcode	Read Code	Description
15155	E112200	Single major depressive episode; moderate
15219	E112300	Single major depressive episode; severe; without psychosis
43324	E112500	Single major depressive episode; partial or unspec remission
7011	E112z00	Single major depressive episode NOS
15099	E113.00	Recurrent major depressive episode
6932	E113000	Recurrent major depressive episodes; unspecified
35671	E113100	Recurrent major depressive episodes; mild
29342	E113.11	Endogenous depression - recurrent
14709	E113200	Recurrent major depressive episodes; moderate
25697	E113300	Recurrent major depressive episodes; severe; no psychosis
56273	E113500	Recurrent major depressive episodes;partial/unspec remission
6482	E113700	Recurrent depression
25563	E113z00	Recurrent major depressive episode NOS
10825	E118.00	Seasonal affective disorder
27491	E11y200	Atypical depressive disorder
3489	E11z100	Rebound mood swings
9183	E11z200	Masked depression
1055	E135.00	Agitated depression
1131	E204.00	Neurotic depression reactive type
2639	E204.11	Postnatal depression
10455	E211200	Depressive personality disorder
1533	E290.00	Brief depressive reaction
36246	E290z00	Brief depressive reaction NOS
16632	E291.00	Prolonged depressive reaction
324	E2B..00	Depressive disorder NEC
2972	E2B0.00	Postviral depression
4323	E2B1.00	Chronic depression
49879	Eu15500	[X]Mental/behav dis oth stims inc caffeine: psychotic dis
5726	Eu3..00	[X]Mood - affective disorders
4639	Eu32.00	[X]Depressive episode
9055	Eu32000	[X]Mild depressive episode
18510	Eu32100	[X]Moderate depressive episode
7604	Eu32.11	[X]Single episode of depressive reaction
11717	Eu32.12	[X]Single episode of psychogenic depression
9211	Eu32.13	[X]Single episode of reactive depression
9667	Eu32200	[X]Severe depressive episode without psychotic symptoms
41989	Eu32211	[X]Single episode agitated depressn w'out psychotic symptoms
22806	Eu32212	[X]Single episode major depression w'out psychotic symptoms
59386	Eu32213	[X]Single episode vital depression w'out psychotic symptoms
10667	Eu32400	[X]Mild depression
98346	Eu32500	[X]Major depression; mild
98252	Eu32600	[X]Major depression; moderately severe
98414	Eu32700	[X]Major depression; severe without psychotic symptoms
103677	Eu32B00	[X]Antenatal depression
6854	Eu32y00	[X]Other depressive episodes
10720	Eu32y11	[X]Atypical depression
56609	Eu32y12	[X]Single episode of masked depression NOS
2970	Eu32z00	[X]Depressive episode; unspecified
543	Eu32z11	[X]Depression NOS
3291	Eu32z12	[X]Depressive disorder NOS
28248	Eu32z13	[X]Prolonged single episode of reactive depression
5987	Eu32z14	[X]Reactive depression NOS
3292	Eu33.00	[X]Recurrent depressive disorder
8851	Eu33000	[X]Recurrent depressive disorder; current episode mild
19696	Eu33100	[X]Recurrent depressive disorder; current episode moderate

Medcode	Read Code	Description
8902	Eu33.11	[X]Recurrent episodes of depressive reaction
28756	Eu33.12	[X]Recurrent episodes of psychogenic depression
8826	Eu33.13	[X]Recurrent episodes of reactive depression
29784	Eu33.14	[X]Seasonal depressive disorder
29520	Eu33.15	[X]SAD - Seasonal affective disorder
33469	Eu33200	[X]Recurr depress disorder cur epi severe without psyc sympt
11329	Eu33211	[X]Endogenous depression without psychotic symptoms
11252	Eu33212	[X]Major depression; recurrent without psychotic symptoms
73991	Eu33214	[X]Vital depression; recurrent without psychotic symptoms
47731	Eu33y00	[X]Other recurrent depressive disorders
44300	Eu33z00	[X]Recurrent depressive disorder; unspecified
36616	Eu33z11	[X]Monopolar depression NOS
42857	Eu34.00	[X]Persistent mood affective disorders
21540	Eu34000	[X]Cyclothymia
54848	Eu34012	[X]Cycloid personality
7953	Eu34100	[X]Dysthymia
8584	Eu34111	[X]Depressive neurosis
7737	Eu34113	[X]Neurotic depression
15220	Eu34114	[X]Persistant anxiety depression
50243	Eu34y00	[X]Other persistent mood affective disorders
39767	Eu34z00	[X]Persistent mood affective disorder; unspecified
28008	Eu3y.00	[X]Other mood affective disorders
50998	Eu3y000	[X]Other single mood affective disorders
30688	Eu3y011	[X]Mixed affective episode
29921	Eu3y100	[X]Other recurrent mood affective disorders
19054	Eu3y111	[X]Recurrent brief depressive episodes
29579	Eu3yy00	[X]Other specified mood affective disorders
37090	Eu3z.00	[X]Unspecified mood affective disorder
24927	Eu53.00	[X]Mental and behav disorders assoc with the puerperium NEC
40224	Eu53000	[X]Mild mental/behav disorder assoc with the puerperium NEC
13307	Eu53011	[X]Postnatal depression NOS
4979	Eu53012	[X]Postpartum depression NOS
40500	Eu53100	[X]Severe mental and behav disorder assoc wth puerperium NEC
17614	Eu53111	[X]Puerperal psychosis NOS
23642	Eu53z00	[X]Puerperal mental disorder; unspecified
32845	Eu92000	[X]Depressive conduct disorder
46756	L184.00	Mental disorders in pregnancy; childbirth and the puerperium
103283	L184200	Mental disorder in the puerperium - baby delivered
109465	L184300	Mental disorder during pregnancy - baby not yet delivered
100628	L184400	Mental disorder in puerperium - baby previously delivered

Common Mental Health Disorders – ICD-10 Codes

ICD-10 Code	Description
F40	Phobic anxiety disorders
F40.0	Agoraphobia
F40.1	Social phobias
F40.2	Specific (isolated) phobias
F40.8	Other phobic anxiety disorders
F40.9	Phobic anxiety disorder, unspecified
F41	Other anxiety disorders
F41.0	Panic disorder [episodic paroxysmal anxiety]
F41.1	Generalized anxiety disorder
F41.2	Mixed anxiety and depressive disorder
F41.3	Other mixed anxiety disorders
F41.8	Other specified anxiety disorders
F41.9	Anxiety disorder, unspecified
F42	Obsessive-compulsive disorder
F42.0	Predominantly obsessional thoughts or ruminations
F42.1	Predominantly compulsive acts [obsessional rituals]
F42.2	Mixed obsessional thoughts and acts
F42.8	Other obsessive-compulsive disorders
F42.9	Obsessive-compulsive disorder, unspecified
F43.1	Post-traumatic stress disorder
F43.2	Adjustment disorders
F43.8	Other reactions to severe stress
F43.9	Reaction to severe stress, unspecified
F44	Dissociative [conversion] disorders
F44.0	Dissociative amnesia
F44.1	Dissociative fugue
F44.2	Dissociative stupor
F44.3	Trance and possession disorders
F44.4	Dissociative motor disorders
F44.5	Dissociative convulsions
F44.6	Dissociative anaesthesia and sensory loss
F44.7	Mixed dissociative [conversion] disorders
F44.8	Other dissociative [conversion] disorders
F44.9	Dissociative [conversion] disorder, unspecified
F45	Somatoform disorders
F45.0	Somatization disorder
F45.1	Undifferentiated somatoform disorder
F45.2	Hypochondriacal disorder
F45.3	Somatoform autonomic dysfunction
F45.4	Persistent somatoform pain disorder
F45.8	Other somatoform disorders
F45.9	Somatoform disorder, unspecified
F48	Other neurotic disorders
F48.0	Neurasthenia
F48.1	Depersonalization-derealization syndrome
F48.8	Other specified neurotic disorders
F48.9	Neurotic disorder, unspecified
F32	Depressive episode
F32.0	Mild depressive episode
F32.1	Moderate depressive episode
F32.2	Severe depressive episode without psychotic symptoms
F32.3	Severe depressive episode with psychotic symptoms
F32.8	Other depressive episodes

ICD-10 Code	Description
F32.9	Depressive episode, unspecified
F33	Recurrent depressive disorder
F33.0	Recurrent depressive disorder, current episode mild
F33.1	Recurrent depressive disorder, current episode moderate
F33.2	Recurrent depressive disorder, current episode severe without psychotic symptoms
F33.3	Recurrent depressive disorder, current episode severe with psychotic symptoms
F33.8	Other recurrent depressive disorders
F33.9	Recurrent depressive disorder, unspecified
F34	Persistent mood [affective] disorders
F34.0	Cyclothymia
F34.1	Dysthymia
F34.8	Other persistent mood [affective] disorders
F34.9	Persistent mood [affective] disorder, unspecified
F38	Other mood [affective] disorders
F38.0	Other single mood [affective] disorders
F38.1	Other recurrent mood [affective] disorders
F38.8	Other specified mood [affective] disorders
F39	Unspecified mood [affective] disorder

Depression – Symptom Read Codes

Medcode	Read Code	Description
1996	1B17.00	Depressed
4824	1B17.11	C/O - feeling depressed
2930	1B17.12	C/O - feeling unhappy
8063	1B1I111	C/O weepiness
9796	1B1U.00	Symptoms of depression
10438	1B1U.11	Depressive symptoms
6021	1BO..00	Mood swings
25435	1BQ..00	Loss of capacity for enjoyment
10015	1BT..00	Depressed mood
8928	1BT..11	Low mood
53148	1BU..00	Loss of hope for the future
100977	1JJ..00	Suspected depression

Antidepressants

- Agomelatine
- Amitriptyline
- Citalopram
- Clomipramine
- Dosulepin
- Doxepin
- Duloxetine
- Escitalopram
- Fluoxetine
- Flupentixol
- Fluvoxamine
- Imipramine
- Isocarboxazid
- Lofepramine
- Mianserin
- Mirtazapine
- Moclobemide
- Nortriptyline
- Paroxetine
- Phenelzine
- Reboxetine
- Sertraline
- Tranylcypromine
- Trazodone
- Trifluoperazine
- Trimipramine
- Tryptophan

- Venlafaxine

Anxiety – Symptom Read Codes

Medcode	Read Code	Description
29608	1B12.00	'Nerves' - nervousness
3586	1B12.11	'Nerves'
514	1B12.12	Tension - nervous
131	1B13.00	Anxiousness
5902	1B13.11	Anxiousness - symptom
93401	1B13.12	Anxious
2585	1B14.11	Tenseness - symptom
5347	1B1H.11	Fear
11890	1B1V.00	C/O - panic attack
18494	1Ba0.00	Obsessional thoughts
18672	1Bb..00	Specific fear
22654	1P3..00	Compulsive behaviour
26251	1S1..00	Flashbacks
13124	2258	O/E - anxious
8725	2259	O/E - nervous
1582	E205.11	Nervous exhaustion
2509	R2y2.00	[D]Nervousness
17853	R2y2.11	[D]Nerves
10723	R2y2.12	[D]Nervous tension
22159	Z4I7.00	Acknowledging anxiety
62935	Z4I7100	Recognising anxiety
28381	Z4I7200	Alleviating anxiety
26295	Z4I7211	Reducing anxiety
11267	Z7CG400	Flashbacks
53526	Z7CG500	Reliving traumatic memories

Anxiolytics

- Alprazolam
- Bromazepam
- Buspirone
- Chlordiazepoxide
- Chlormezanone
- Chlordiazepoxide
- Clobazam
- Diazepam
- Flurazepam
- Hydroxyzine
- Ketazolam
- Lorazepam
- Medazepam
- Meprobamate
- Midazolam
- Oxazepam
- Prazepam
- Trazadone

Appendix 10: Tests For Overdispersion

	Likelihood Ratio Test Statistic (chi-bar^2)	***p* Value**
Model 1	4.1×10^{-7}	0.500
Model 2	8.25×10^{-8}	0.499
Model 3	1.41×10^{-11}	1.000

Conclusion: as the p-values from the likelihood ratio tests of each model are >0.05, the data is not overdispersed, meaning that poisson regression models are appropriate.

Appendix 11: Exclusion Codes for Antidepressants

Eating Disorders - Diagnostic Read Codes

Medcode	Read Code	Description
8027	1467	H/O: anorexia nervosa
11612	8HTN.00	Referral to eating disorders clinic
95883	9Nk9.00	Seen in eating disorder clinic
2135	E271.00	Anorexia nervosa
7743	E275.00	Other and unspecified non-organic eating disorders
44544	E275000	Unspecified non-organic eating disorder
4377	E275100	Bulimia (non-organic overeating)
11608	E275111	Compulsive eating disorder
4835	E275200	Pica
61236	E275y00	Other specified non-organic eating disorder
32892	E275z00	Non-organic eating disorder NOS
6159	Eu50.00	[X]Eating disorders
30570	Eu50000	[X]Anorexia nervosa
34929	Eu50100	[X]Atypical anorexia nervosa
9581	Eu50200	[X]Bulimia nervosa
6583	Eu50211	[X]Bulimia NOS
96475	Eu50212	[X]Hyperorexia nervosa
33863	Eu50300	[X]Atypical bulimia nervosa
39383	Eu50400	[X]Overeating associated with other psychological disturbncs
17439	Eu50411	[X]Psychogenic overeating
34995	Eu50y00	[X]Other eating disorders
62150	Eu50y11	[X]Pica in adults
17203	Eu50y12	[X]Psychogenic loss of appetite
36946	Eu50z00	[X]Eating disorder, unspecified
52580	Eu9y300	[X]Pica of infancy and childhood
49601	Fy05.00	Nocturnal sleep-related eating disorder
912	R030.00	[D]Anorexia
53746	R030z00	[D]Anorexia NOS
15235	R036.00	[D]Polyphagia
17642	R036000	[D]Excessive eating
605	R036011	[D]Bulimia NOS
98900	R036100	[D]Hyperalimentation
72870	R036z00	[D] Polyphagia NOS
23420	SN42100	Starvation
92992	U1B3.11	[X]Starvation
12201	Z4B5.00	Eating disorder counselling
67510	ZC2CD00	Dietary advice for eating disorder

Eating Disorders – Symptom Read Codes

Medcode	Read Code	Description
7608	1612	Appetite loss - anorexia
7744	1612.11	Anorexia symptom
35490	1614	Excessive eating - polyphagia
60373	1614.11	Hyperalimentation - symptom
31227	1614.12	Polyphagia symptom
26518	1FF..00	Binge eating
108164	1JZ..00	Suspected binge eating disorder

Eating Disorders - ICD-10 Codes

ICD-10 Code	Description
F50	Eating disorders
F50.0	Anorexia nervosa
F50.1	Atypical anorexia nervosa
F50.2	Bulimia nervosa
F50.3	Atypical bulimia nervosa
F50.4	Overeating associated with other psychological disturbances
F50.5	Vomiting associated with other psychological disturbances
F50.8	Other eating disorders
F50.9	Eating disorder, unspecified

OCD – Diagnostic Read Codes

Medcode	Read Code	Description
3208	E203.00	Obsessive-compulsive disorders
47365	E203.11	Anancastic neurosis
5678	E203000	Compulsive neurosis
2030	E203100	Obsessional neurosis
15566	E203z00	Obsessive-compulsive disorder NOS
5304	Eu42.00	[X]Obsessive - compulsive disorder
24251	Eu42.11	[X]Anankastic neurosis
21836	Eu42.12	[X]Obsessive-compulsive neurosis
20634	Eu42000	[X]Predominantly obsessional thoughts or ruminations
22019	Eu42100	[X]Predominantly compulsive acts [obsessional rituals]
18399	Eu42200	[X]Mixed obsessional thoughts and acts
38809	Eu42y00	[X]Other obsessive-compulsive disorders
22721	Eu42z00	[X]Obsessive-compulsive disorder, unspecified
107134	Z522600	Flooding - obsessional compulsive disorder

OCD – Symptom Read Codes

Medcode	Read Code	Description
18494	1Ba0.00	Obsessional thoughts
22654	1P3..00	Compulsive behaviour

OCD - ICD-10 Codes

ICD-10 Code	Description
F42	Obsessive-compulsive disorder
F42.0	Predominantly obsessional thoughts or ruminations
F42.1	Predominantly compulsive acts [obsessional rituals]
F42.2	Mixed obsessional thoughts and acts
F42.8	Other obsessive-compulsive disorders
F42.9	Obsessive-compulsive disorder, unspecified

Appendix 12: Models Excluding Missing Ethnicity

	Model 1C: Adjusted incidence rate ratio (95% CI)	Model 2C: Adjusted incidence rate ratio (95% CI)	Model 3C: Adjusted incidence rate ratio (95% CI)
Condition Group			
No long-term condition	1.00 (ref)	1.00 (ref)	1.00 (ref)
Chronic condition	1.43 (1.14-1.79)**	1.54 (1.22-1.96)**	1.38 (1.16-1.64)**
Life-limiting condition	0.97 (0.74-1.26)	1.11 (0.84-1.45)	1.03 (0.84-1.26)
Sex			
Male	1.00 (ref)	1.00 (ref)	1.00 (ref)
Female	1.76 (1.44-2.14)**	2.21 (1.79-2.73)**	1.88 (1.62-2.18)**
Age at Study Start	1.12 (1.09-1.15)**	1.26 (1.22-1.29)**	1.18 (1.16-1.20)**
Ethnicity			
White	1.00 (ref)	1.00 (ref)	1.00 (ref)
Black	0.81 (0.36-1.82)	0.53 (0.17-1.66)	0.47 (0.21-1.06)
South Asian	0.55 (0.26-1.17)	0.30 (0.10-0.94)*	0.41 (0.21-0.80)**
Other Asian	0.78 (0.25-2.43)	1.37 (0.51-3.69)	1.09 (0.51-2.29)
Other	0.42 (0.11-1.69)	0.00 (0.00-0.00)	0.24 (0.06-0.96)*
Mixed	1.12 (0.59-2.12)	0.63 (0.24-1.70)	0.82 (0.46-1.45)
Deprivation Status			
1 (least deprived)	1.00 (ref)	1.00 (ref)	1.00 (ref)
2	0.90 (0.68-1.18)	0.77 (0.56-1.04)	0.83 (0.67-1.03)
3	0.83 (0.62-1.11)	0.86 (0.64-1.17)	0.88 (0.71-1.11)
4	0.71 (0.52-0.97)*	0.76 (0.55-1.05)	0.77 (0.61-0.98)*
5 (most deprived)	0.80 (0.59-1.09)	0.96 (0.70-1.31)	0.93 (0.74-1.17)
Maternal Mental Health Conditions			
None	1.00 (ref)	1.00 (ref)	1.00 (ref)
Common mental health disorders	1.47 (1.21-1.80)**	1.65 (1.33-2.04)**	1.50 (1.29-1.75)**
Severe mental illness	1.43 (0.70-2.96)	2.05 (1.00-4.19)*	1.80 (1.08-3.00)*
Annual GP Visits	1.08 (1.07-1.10)**	1.06 (1.05-1.07)**	1.08 (1.07-1.09)**

*$p \leq 0.05$ **$p \leq 0.01$
Model 1C: N= 22,774
Model 2C: N=22,847
Model 3C: N=22,735

Appendix 13: Sensitivity Analysis

Group/Covariate	Supplementary Model 1: Hazard Ratio (95% CI)	Supplementary Model 2: Hazard Ratio (95% CI)
Condition Group		
No long-term condition	1.00 (ref)	1.00 (ref)
Chronic condition	1.90 (1.53-2.35)**	1.49 (1.20-1.85)**
Life-limiting condition	1.62 (1.27-2.07)**	1.38 (1.08-1.76)**
Sex		
Male	1.00 (ref)	1.00 (ref)
Female	1.93 (1.60-2.33)**	1.85 (1.53-2.23)**
Ethnicity		
White	1.00 (ref)	1.00 (ref)
Black	0.87 (0.38-1.95)	0.79 (0.35-1.78)
South Asian	0.59 (0.28-1.25)	0.59 (0.28-1.24)
Other Asian	0.80 (0.26-2.48)	0.76 (0.25-2.38)
Other	0.40 (0.10-1.61)	0.40 (0.10-1.60)
Mixed	1.27 (0.68-2.39)	1.28 (0.68-2.40)
Missing	0.65 (0.47-0.90)*	0.69 (0.49-0.95)*
Deprivation Status		
1 (least deprived)	1.00 (ref)	1.00 (ref)
2	0.85 (0.66-1.11)	0.87 (0.67-1.13)
3	0.90 (0.68-1.18)	0.92 (0.70-1.21)
4	0.74 (0.55-0.99)*	0.76 (0.56-1.02)
5 (most deprived)	0.89 (0.66-1.20)	0.91 (0.68-1.22)
Year of Birth	0.91 (0.89-0.93)**	1.23 (1.19-1.27)**

*$p \leq 0.05$ **$p \leq 0.01$

Supplementary Model 1: adjusted for sex, ethnicity, deprivation status, year of birth and age (time-varying)

Supplementary Model 2: adjusted for sex, ethnicity, deprivation status and year of birth (age used as time-scale)

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