University of Sheffield

A realist evaluation of clinical supervision of Advanced Clinical Practice learners in general practice teams.

B.E. Jackson

2023

PhD Thesis

A realist evaluation of clinical supervision of Advanced Clinical Practice learners in general practice teams.

Benjamin E Jackson

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy

School of Medicine and Population Health

Faculty of Health

University of Sheffield

November 2023

ACKNOWLEDGEMENTS

It is important to give thanks and acknowledgement to those that have supported me through the years during which I have completed this research.

To Celine, my wife, who has been endlessly supportive with my determination to be a perpetual student and to the rest of my family, who have been patient and kind during times when I have been less able to be present in their lives than I might otherwise have been.

To the many colleagues who have helped make the work possible through their support and encouragement, for allowing me the space required, and enriching my understanding of topic area through discussion and critical feedback.

To the participants who came forward and gave up their time to discuss their experience in such depth and with openness and honesty during the interviews.

Finally, to all my supervisors - Rachel O'Hara, Steve Ariss and Chris Burton who have helped me navigate the way through a part-time PhD sensitively and with tailored support when most needed.

ABSTRACT

Health service policies describe the complex intervention of supporting primary care services through introducing advanced clinical practice (ACP) roles. There is concern this policy may lead to further inequities in access to primary care. Understanding what mechanisms enable these roles to support the delivery of generalist care remains a key research gap.

A critical factor in ACPs adapting to their new roles is clinical supervision from experienced general practitioners (GPs). A realist evaluation of clinical supervision of these ACPs identifies key mechanisms that enable novice generalists to learn, adapt and integrate into general practice teams.

An initial programme theory is developed through a combination of retroduction, stakeholder consultation and literature review that contains fifty-four candidate mechanisms. Paired, realist semi-structured interviews are undertaken with 13 ACPs new to primary care and 12 of their supervising GPs. Half of participants are working in practices serving communities in the most deprived quintile. Transcribed interviews are analysed using qualitative methods adapted for realist studies to test the plausibility of candidate mechanisms and identify new ones.

A refined programme theory is produced with mechanisms clustered around six themes: establishing safety, developing mutual trust, sharing clinical reasoning, promoting reflection, allowing self-direction, and collaborating in care. Situational aspects relating to practitioner, the practice team and the population served are also identified. The refined programme theory develops current understanding of clinical supervision in primary care environments.

The programme theory is supported by middle-range theories from education and training, suggesting it is transferable to other learning environments. Understanding key supervision mechanisms that support practitioner development and integration into primary care settings has relevance for clinical learners from professional groups and at all stages of training, as well as wider strategy to support primary care within healthcare systems. Future dissemination and research to explore this area further is suggested.

Contents

THESIS OUTLINE

Equitable access to quality general practice/primary care services is critical to a functioning National Health Service (NHS) but general practice (GP) is increasingly struggling to meet demand, especially in urban deprived and rural & remote areas. One strategy proposed to solve this problem is expanding the GP team to incorporate a variety of non-medical clinical practitioners. There is little evidence on how best to support the integration of these practitioners to maintain the best possible quality of primary health care.

This thesis presents a programme of critical realist evaluation research on how the integration of new advanced clinical roles to maintain the best possible quality of primary health care might work. As this is a complex intervention for primary care, programme theory is used in the analysis. A combination of stakeholder consultations, retroduction and a rapid review of the literature develops an initial programme theory, within which potential mechanisms that might support or frustrate the intervention achieving desired outcomes are situated. Important themes related to the new practitioner, the practice team, the population served' and the clinical supervision process are described, before the empirical research focuses on the clinical supervision process, within the other broader themes. It examines how mechanisms within the clinical supervision process can work to support the integration of new advance practitioners into general practice team, and for whom, when and why.

Potential clinical supervision mechanisms are explored through paired realist interviews with GP supervisors and the new practitioners. Broader contextual themes relating to the practice team and the population served are checked through interviews with practice managers and discussions with an advisory patient participation group. Purposeful sampling ensures 40% of the paired interviews are with practitioners working in practices serving populations within the most deprived quintile nationally.

This qualitative data is analysed through a critical realist approach, identifying, and clarifying patterns to identify plausible mechanisms within clinical supervision processes. This analysis develops a refined programme theory of how clinical supervision works to support the useful integration of these practitioners is developed and presented.

A critical part of realist research is the development of programme theory, which becomes an integral part of the research methods, before empirical data is collected. The thesis is therefore divided into five parts.

Part one introduces the background to the thesis; the problems identified, and the evaluation question. It describes why the research is both useful and important in the current United Kingdom (UK) general practice environment. It explains why the integration of new practitioners into general practice teams is a complex intervention.

Part two considers which approach to take to answer the evaluation question. Research approaches for complex intervention science are discussed and a critical realist approach is concluded to be the best option for this research. The use of programme theory and the philosophical foundations of critical realism are explored that shape critical realist methodology and research. The outline research programme is presented.

Part three describes the process of *building* the initial programme theory. This combines retroduction, stakeholder consultation and a literature review. Retroduction supports the theorizing that generates an initial programme theory, which is then further enhanced through stakeholder consultation and a rapid realist literature review. This sets the stage for the empirical data collection.

Part four describes the *testing* of the initial programme theory. After a mapping process to consider the scope of the testing process, it is decided to concentrate on the process of clinical supervision. Adapted methods are presented that maintain a rigorous critical realist approach. The analysis of qualitative data from the paired interviews of supervisee and supervisor identifies evidence for which potential mechanisms in clinical supervision are operating along with several new mechanisms. Some background themes and mechanisms related to these themes are also found.

Part five concludes the thesis. The programme theory is *refined,* which centres on clinical supervision. Middle-range theory that supports the plausibility and transportability of the principles underpinning the model is discussed. The strengths, weaknesses, and main implications of the research are discussed before conclusions are drawn along with suggestions for next steps.

PART ONE: PROBLEMS

Part one introduces the background to the thesis and the problems identified. It describes what sparked the interest in the research question and why the research is important, useful, and relevant for the current United Kingdom (UK) general practice environment. It comprises three chapters.

Chapter 1 describes how a problem with access to general practice services has developed and contributed to falling satisfaction with UK general practice. It explains how the emphasis of NHS policy to support general practice has changed from maintaining and increasing the numbers of General Practitioners (GPs) to integrating novel non-doctor clinical roles into general practice teams. The importance of maintaining general practice as a core part of the NHS is explained. Two of the newly created roles that have been suggested are introduced: Advanced Clinical Practitioners and Physician Associates. Finally, challenges identified in implementing these policies, partly identified through the author's own previous work are introduced.

Chapter 2 outlines the problem of health inequity in access to primary care. Evidence for the 'inverse-care law' operating with respect to funding and workforce in UK general practice is presented, with access to healthcare services inversely proportional to the need for those services in communities. The consequences of such inequity in service provision are briefly explored through the lenses of the NHS constitution and healthcare economics. It concludes that research into healthcare services should ensure it includes an appropriate representation of services for deprived communities.

Chapter 3 explains why the problems described are complex. The outline research question is proposed which seeks to understand how the intervention described to support and maintain primary care might work. Drawing on previous chapters, it outlines some principles that will be incorporated into the research programme.

1 NEW ROLES FOR GENERAL PRACTICE TEAMS

The National Health Service (NHS) has been under ever-increasing pressure to meet the demand for healthcare services (The King's Fund, 2019). Since 1997, it has increasingly struggled to meet this demand and public satisfaction has steadily fallen (The King's Fund, 2022). Against this backdrop, the recent COVID-19 pandemic has presented a challenge to all parts of the health service, particularly in secondary care (The Health Foundation, 2021). There have also been widely reported problems in workforce capacity more widely, including general practice and primary care (British Medical Association, 2015; Centre for Workforce Intelligence, 2014; FD Hobbs et al., 2016; The Health Foundation, 2017, 2022). This chapter describes how these workforce challenges have been associated with a reduction in public satisfaction, how important these problems are for the wider sustainability of the NHS and explains how novel roles for general practice teams have become part of major policy initiatives to address the problem in UK general practice.

1.1 PUBLIC SATISFACTION WITH GENERAL PRACTICE

The British Social Attitudes survey, which has sampled public satisfaction with NHS services since 1983 provides some longitudinal comparison of public satisfaction over the years. The 2021 survey results showed significant reductions in satisfaction rates compared with 2019; the percentage of the population satisfied with the NHS as a whole had fallen to 36%, the lowest level since 1997 (The King's Fund, 2022). Across difference sectors, satisfaction with hospital inpatient services fell 23 percentage points, satisfaction with accident and emergency 15 percentage points and satisfaction with general practice services fell 30 percentage points to just 38%: 25 points below its previous lowest ever level of 63% in 2018. It was also the first time since the survey began in 1983 that more people were dissatisfied with general practice services (42%) than were satisfied, and that rates of satisfaction fell after people had recently accessed primary care services.

Though this reduction in satisfaction is significant, it must be viewed in the context of the effects of the COVID-19 pandemic, when clinical care from general practice services was rapidly transformed to be provided much more often by telephone or video call (The Health Foundation, 2021). It should also be recognised that the 2021 survey was administered in November, just as the population were recovering from the first major UK lockdown and at a time when the fear of an Omicron variant surge was growing (UK Government, 2021).

Survey results taken prior to the pandemic, up to and including 2019 show a more nuanced picture. Satisfaction with the NHS overall in 2019 was at 60%, seven percentage points higher than in 2018. Satisfaction with general practice services, which had fallen over previous years to a previous record low level of 63% in 2018, had also increased marginally to 68%. However, problems with capacity remained and the time it took to get a general practice appointment has consistently been the most often reported reason for dissatisfaction with the NHS overall (The Nuffield Trust, 2019).

1.2 INTRODUCTION OF NEW ROLES

During the decade between 2000 and 2010, it had become increasingly accepted that a significant problem in supplying the number of general practitioners (GPs) required to meet the demand would persist expanding the general practice team to incorporate other healthcare professionals was one solution.

In 2014, the Centre for Workforce Intelligence (CfWI) published a report on general practice workforce (commissioned by the Department for Health) which concluded that the number of GPs being trained was inadequate and would lead to a major imbalance in workforce demand and supply by 2020. Recommendations in the report included widening the skill-mix in general practice teams (Centre for Workforce Intelligence, 2014).

In 2015, Health Education England (HEE) commissioned a report to examine the evidence base underpinning these recommendations, which resulted in a further report - 'The future of primary care – creating teams for tomorrow' (Primary Care Workforce Commission, 2015). This report subsequently influenced UK government strategy for creating sustainable general practice through the NHS General Practice Forward View; primarily a reorganisation of service configuration and the integration of new roles into primary care teams (Primary Care Workforce Commission, 2015; NHS England, 2016a; The King's Fund, 2016). NHS strategy for developing and supporting future general practice services altered from simply training sufficient replacements for current roles (primarily GPs) to ways of developing wider multi-professional clinical teams to support the delivery of care. The 2019 NHS Long Term Plan and the associated GP contract then established a system for funding to flow into general practice services to support the recruitment of these new roles over the next five years through the Additional Roles Re-imbursement Scheme (NHS England, 2019).

The proposals for changing the nature of general practice services were set in the context of successive NHS policies to transfer the setting of patient care out of hospitals to community settings, a proposal which itself would require additional primary care capacity (The King's Fund, 2009). They

were also set against the backdrop of a significant period of financial constraint for the NHS more generally. Given that over 70% of NHS funding is spent on its workforce (House of Commons Health Committee, 2007), this is especially relevant for workforce policy. In the 10 years before the 2008 financial crash, relative NHS spending had increased by around 4% year on year, with policy that focused on increased investment in primary care (Roland and Guthrie, 2016). Economic austerity measures introduced after the 2008 led to a very different financial picture, with spending on NHS subsequently squeezed 'as never before' (The King's Fund, 2015).

1.3   DAMAGE TO 'THE JEWEL IN THE CROWN'

In 2015, the then UK Secretary of State for Health described General Practice as 'the jewel in the crown of the NHS'. Though this might seem overly allegorical, the established historical role of primary care in making NHS services more efficient and effective as a whole should not be underestimated. In 2021, the average cost to the taxpayer of a short non-elective inpatient stay was reported to be £959 and an Accident and Emergency (A&E) attendance, £297 (NHS England, 2021). In the same year, the mean cost per patient for a whole year of care from a GP was just £160 (NHS Digital, 2021). The effective provision of continuity of general practice services is associated with a reduction in admissions to hospital, a reduction in A&E attendance and a reduced prevalence of morbidity (Baker *et al.*, 2016; Barker, Steventon and Deeny, 2017). This relative value to the UK taxpayer in investing in primary care to prevent escalating health problems and make the NHS more efficient is plain to see. Additionally, good access and experience of primary care is also associated with less inequities between health outcome measures for higher and lower income groups, a primary purpose of the NHS since its inception in 1947 (Starfield, Shi and Macinko, 2005). This is explored in more depth in the next chapter.

The specific characteristics of general practice services that contribute to clinical effectiveness within health care systems have been described as the following: continuity of relationships between health practitioners and patient; co-ordination of care for patients with complex health problems; a community-setting that provides more accessible delivery of health-care; and healthcare that considers a person's whole experience of health and illness, rather than being disease specific (Macinko et al., 2003; Starfield et al., 2005). How the policies to introduce new roles into multi-disciplinary general practice teams were going to affect the core characteristics of general practice were rarely considered in policy statements. However, the adverse effects and potential of undermining these characteristics were identified as considerable risks by many stakeholders in the

general practice community (Majeed, 2015; Marshall, 2015; Roland and Everington, 2016; Jackson, Irvine and Walton, 2017; Royal College of General Practitioners, 2018)

1.4 NOVEL HEALTHCARE ROLES

Two relatively novel healthcare roles that were a significant part of policy intervention to replace the diminishing number of GPs were the Advanced Clinical Practitioner (ACP) and the Physician Associate (PA). Each of these is introduced in turn with some evidence from previous projects that illustrate some of the challenges that might be faced in successfully integrating them into primary care teams.

1.4.1 Advanced Clinical Practitioners (ACPs)

One novel health practitioner role suggested to support general practice was that of the newly defined Advanced Clinical Practitioner (NHS England, 2017). The NHS definition of ACPs incorporates a more established role of Advanced Nurse Practitioners (ANPs) together with less familiar advanced practice roles from the Allied Health Professions (e.g. pharmacists, physiotherapists, paramedics):

> *'Advanced clinical practice is delivered by experienced, registered health and care practitioners. It is a level of practice characterised by a high degree of autonomy and complex decision-making. This is underpinned by a master's level award or equivalent that encompasses the four pillars of clinical practice, leadership and management, education and research, with demonstration of core capabilities and area specific clinical competence.*

> *Advanced clinical practice embodies the ability to manage clinical care in partnership with individuals, families and carers. It includes the analysis and synthesis of complex problems across a range of settings, enabling innovative solutions to enhance people's experience and improve outcomes.'* (NHS England, 2017) *p8.*

The professional background of ACPs is therefore heterogeneous. The term ACP describes a role incorporating a level of capability to manage complex clinical problems with greater autonomy, rather than describe a distinct professional group. If ACPs are to support front-line care in general practice teams, this level of clinical competence needs to include an understanding of how to deliver the core aspects of generalist care.

1.4.2 Physician Associates

The other relatively new healthcare role introduced to support General Practice in NHS strategy was that of the Physician Associate (Primary Care Workforce Commission, 2015; NHS England, 2016a; NHS England and British Medical Association, 2019) .

The NHS careers website describes Physician Associates (PAs) as:

> *'medically trained, generalist healthcare professionals, who work alongside doctors and provide medical care as an integral part of the multidisciplinary team.'* (NHS, 2023)

The PA role is clearly presented as a 'generalist' role. Courses in Physician Associate studies are described as covering a breadth of medical knowledge without focusing on deeper knowledge in any one area (Faculty of Physician Associates, 2023). They usually consist of two years on top of health science related primary degree. Perhaps policy makers consider this role might be utilised to mitigate the shortages of GPs through providing additional, 'junior' clinical input for General Practice. What is clear is that on qualification, the vast majority of Physician Associates will have had very little experience in a primary care setting and will be new to generalist clinical work.

The concept of addressing workforce challenges with physician associates was not entirely new to the UK General Practice. Though the role originally developed in the United States to address workforce shortages there (Cooper and Stoflet, 2004; Glicken and Miller, 2013; Hooker and Cawley, 2013), in 2003, a number of PAs were recruited from the United States to support Primary Care in the West Midlands (Woodin *et al.*, 2005; Parle, Ross and Doe, 2006). However, the wider adoption of the role had remained isolated to just a few areas until the recent national policy directives and funding. UK universities that that were early adopters in providing courses in PA studies initially struggled to maintain viability, whereas after additional funding was provided, there are now forty university courses actively recruiting (NHS, 2023).

The 2019 NHS contract for English general practice included a new five-year investment package to recruit new roles called the Additional Role Reimbursement Scheme (ARRS)(NHS England and British Medical Association, 2019). The main clinical roles that could be recruited were ACPs from non-nursing professions (paramedics, pharmacists) and PAs. In reality, due to a shortage of people to fill the new roles, recruitment has been according to who was available, rather than guided by any deliberate workforce strategy.

1.4.3 Implementation challenges

The author's masters dissertation examined barriers and facilitators to the integration of the PA role into General Practice teams. There was concern amongst GPs about newly qualified PAs capability to

safely manage complex presentations and the resulting uncertainties in patients with multiple morbidities (Jackson, Marshall and Schofield, 2017). These findings echo conclusions from other research that in general, a greater understanding of how novel clinical roles are effectively integrated into primary care teams is required (Drennan *et al.*, 2017). A rapid review of the literature on skill mix in primary care concluded that the introduction of these novel roles may have unintended consequences in relation to inter-professional relations, workload management, complex clinical care, and loss of continuity (Nelson *et al.*, 2017). Recruitment of new staff whose competencies and roles were relatively unknown produced mismatched expectations between employers and practitioners (Roberts *et al.*, 2019; Howarth *et al.*, 2020). The lack of role definition, availability of new practitioners and organisational strategy lead to professional boundaries being negotiated as practitioners were integrated into service delivery rather than defined clearly at the start of employment (Drennan *et al.*, 2017). The lack of defined role and clear professional boundaries makes establishing effective clinical supervision for generalist care particularly difficult (Nelson *et al.*, 2018).

1.5 CHAPTER SUMMARY.

Public satisfaction with general practice has been in steady decline for more than 10 years during a period when funding for NHS primary care has been restrained and a growing workforce crisis has developed (The King's Fund, 2019). NHS policy has shifted from focusing on training and recruiting enough GPs to staff, general practice services to the transformation of services through the introduction of a number of novel clinical roles for UK general practice, including Advanced Clinical Practitioners and Physician Associates. Recent investment has accelerated the number of novel clinical practitioners introduced into general practice teams, without a developed understanding of how this intervention will affect core aspects of generalist care. The potential exists for unintended consequences to undermine generalist care and the effectiveness and efficiency of the NHS. How a practice team should best integrate the roles, balance skill-mix and competencies and provide effective clinical supervision that supports generalist care is still not understood adequately.

2 HEALTH INEQUITIES AND GENERAL PRACTICE

This chapter introduces the existence, importance, and impact of health inequity in access to general practice services.

Section 2.1 describes the 'inverse care law' and the evidence that it is still operating in UK general practice to generate health inequities.

Section 2.2 explains why this situation is counter to the values underpinning the NHS itself.

Section 2.3 describes how inequities in access to general practice undermine the value for money the health-service can offer to the taxpayer.

Section 2.4. summarises the above to provide an explanation as to why this evaluation research ensures that it avoids contributing to the problem by considering the problem and, later on, through purposive sampling from practices that provide care to deprived communities.

2.1 THE INVERSE-CARE LAW AND ACCESS TO GP SERVICES.

The '*inverse care law*', as described by Julian Tudor Hart in 1971, states:

> '*The availability of good medical care tends to vary inversely with the need for it in the population served.*' - (Tudor Hart, 1971)

The inverse care law still operates in primary care today in the UK. In 2007, Mercer and Watt describe the inverse care law operating across primary health care in Scotland, with inequitable funding for primary care in those areas serving population with a greater burden of ill-health and multi-morbidity (Mercer and Watt, 2007). Goddard et al. (2010) describe how, in England, inequities in the number of GPs per head of the population were increased following changes to regulations in 2004, with new GPs increasingly living and working in more affluent areas (Goddard *et al.*, 2010). Other studies confirm the association between an increased prevalence of complex physical and social health needs in deprived populations and relatively poorer access to general practice services (Mercer *et al.*, 2009; Barnett *et al.*, 2012). A cross-sectional study in Scotland found population health needs due to multi-morbidity were a poor predictor of access to GP consultation time and relative levels of investments (McLean *et al.*, 2015). A longitudinal study from 2013-2017 in England

showed a persisting inverse care law in the levels of investment for deprived practices with no redistributive changes produced by the funding formula (Levene *et al.*, 2019).

In contrast, a longitudinal study of English GP services reported a narrowing of relative levels of registration with a GP practice between 2004/5 and 20011/2 with respect to social deprivation in England (Asaria *et al.*, 2016). However, the authors recognise their study may underestimate the increased health care needs caused by increased levels of multiple morbidity in the most deprived areas studied, and that registration with a practice does not equate to access to services. These conclusions are supported by Mclean et al. (2015) who identify that the relative prevalence of multi-morbidity is not fully captured in consultation rates with General Practices (McLean *et al.*, 2015).

A later longitudinal study of GP workforce data sets from 2015-2020 found that there was a diminishing number of GPs and total direct patient care staff available per 10,000 patients in more deprived areas. Within the overall direct patient care roles, relatively more PAs had been recruited in deprived areas (Nussbaum *et al.*, 2021). This increase in PAs is likely to reflect the ARRS investment, which started in 2019, but may also indicate the beginning of a divergence of workforce composition between practices serving more and less deprived populations. At the introduction of the ARRS funding, there was already significant regional variance in primary care workforce composition across England (Spooner *et al.*, 2020). A retrospective study comparing workforce data in England between 2019 and 2022 found that changes in the relative distribution of qualified GPs, practice nurses and direct patient care staff since the introduction of the ARRS roles seemed to have favoured wealthier areas, though this did not reach statistical significance (Hutchinson *et al.*, 2023).

2.1.1   Inequity or inequality in access to GP services.

Health inequities are different from health inequalities and the term 'inequity' captures the *unjust* nature of differences in access to health care or health outcomes. The WHO provides a useful explanation of this difference (World Health Organisation, 2010). Health inequalities are observed differences, either in health status or in the exposure to determinants of health between different population groups*.* Examples of inequality in health status are the differences seen between older and younger populations, or between different social classes. Inequalities in exposure to determinants of health can also be due to unavoidable biological determinants such as age, to lifestyle choices (i.e., smoking, alcohol) or to exposure to social determinants of health outside the choice of the individual (pollution, crime, poor housing conditions etc.).

When addressing differences in exposure to determinants of health, addressing biological determinants of health can be impossible. Addressing life-style choices raises ideological or ethical questions but addressing variation in exposure to social determinants of health and access to health care is possible if appropriate action is taken. The WHO suggests decisions not to take some action to mitigate differences in health care or outcomes are unjust. When decisions are made that do not recognise or seek to address modifiable inequalities, those inequalities become inequities (World Health Organisation, 2010).

The Institute for Health Equity elegantly illustrates this difference (see Figure 1) (Institute for Health Equity, 2019). When considering equitable access to general practice services, the picture on the left shows that, when some areas have greater needs than others, equal distribution of workforce will still lead to inequities in access to health care for those areas. The picture on the right shows how additional investment in those areas with greatest needs can help provide equitable access to health care. This approach has been described as 'proportionate universalism' (Marmot, 2010).
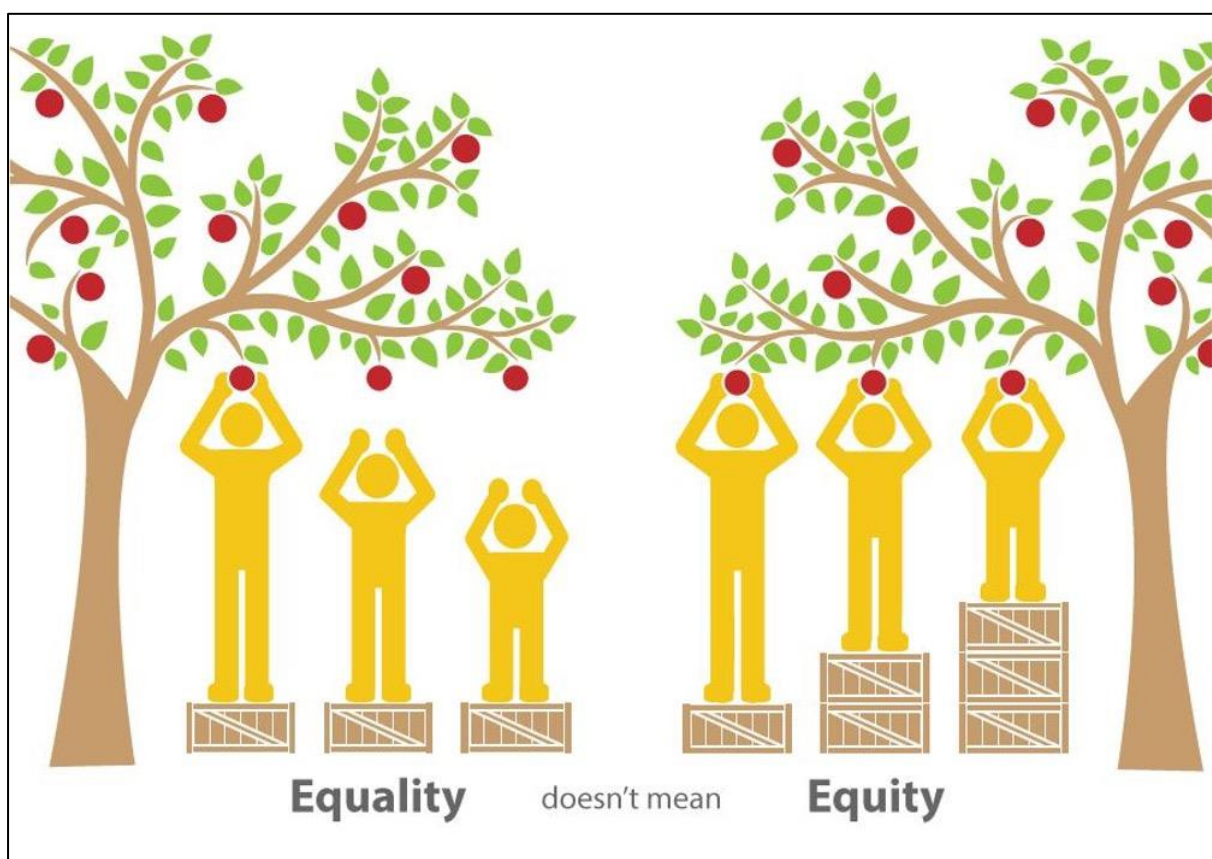
Figure 1 An illustration of the difference between equality and equity –
If everyone is treated equally despite obvious differences in achieving particular outcomes, inequities are generated between different groups.

2.2   THE ETHICAL VALUES OF HEALTHCARE IN THE UK

The 2015 NHS constitution states, 'The NHS belongs to the people' and describes six underpinning values that should shape how NHS services should be designed and delivered (Department of Health and Social Care, 2015). The first principle states '*The NHS provides a comprehensive service, available to all*'. The second states '*Access to NHS services is based on clinical need…*'

The last of the underpinning values, titled '*Everyone Counts*' states:

> '*We maximise our resources for the benefit of the whole community, and make sure nobody is excluded, discriminated against or left behind. We accept that some people need more help, that difficult decisions have to be taken – and that when we waste resources we waste opportunities for others.*'

Given that evidence suggests that an '*inverse care law* 'is operating in current NHS service funding arrangements, this seems contrary to the fundamental values behind NHS services throughout the United Kingdom.

2.3   THE ECONOMIC CASE FOR COMPREHENSIVE ACCESS TO GP SERVICES.

People from more deprived communities often have relatively less candidacy in managing their health concerns and therefore seek help from services easiest to access (Dixon-Woods *et al.*, 2006). GP surgeries, situated in the community, are therefore often the first point of call when people need healthcare. If they cannot negotiate an appointment at the GP they are understandably attend local hospital Emergency Departments. Better access to GP services has been shown to be an important factor in reducing attendance at Emergency Departments by people with long-term problems. and access to effective general practice services has also been shown to reduce potentially avoidable hospital admissions (Busby, Purdy and Hollingworth, 2016; O'Cathain *et al.*, 2019).

An economic health analysis in Scotland found that regional financial overspend was driven by an increasing Emergency Department attendance and resulting rises in emergency admissions (Irvine and Gomez, 2015). Investing in better access to GP services was described as an effective method of managing NHS expenditure across the whole service. A recent Kings Fund report advised that unless strong, resilient, and highly functioning general practice services are developed, the economic sustainability of many of the transformation plans proposed in NHS policies for England would be questionable (Ham *et al.*, 2017).

There is a compelling argument that, from an economic perspective, developing an intervention to support the delivery of primary care in order to reduce the pressure on hospital service is the right policy (NHS England, 2019). An argument for how prioritising investment in general practice mitigates health inequities has also been well described (Starfield, 2012; Busby, Purdy and Hollingworth, 2016):

- As general ill-health and multi-morbidity is more prevalent in relatively deprived communities, investing in primary healthcare (that focuses on person-centred care rather than separate health problems) provides a more effective response to individuals needs and improves health outcomes.
- As the investment required to support individual providers of general practice services is less costly than that required for a secondary care (due to associated estate and technical equipment), a proportionately more equitable investment across a geographical area is possible.
- In addition to the reduction in health inequities that improved primary care can deliver, a strategy to invest in general practice services leads to improved quality of life and a reduction in hospital admissions for chronic health problems for the wider population.
- As investment in primary healthcare will be less expensive than alternative strategies, there is a reduced opportunity-cost for decisions about investment in other areas.

2.4 CHAPTER SUMMARY.

An inverse care law is operating with respect to the access to primary care within current financial and organisation structures. This has not been addressed by recent healthcare policy. There remain moral, ethical, and economic reasons why future strategies should adopt a strategic approach incorporating proportionate universalism with respect to providing the best possible general practice services for the most relatively deprived areas. Any interventions put in place to support primary care services should consider if the intervention will make inequities worse or help address them.

3 A COMPLEX PROBLEM.

This short chapter introduces the concept of a complex intervention before describing the research aims, drawing upon previous chapters to identify key areas to consider.

Section 3.1 introduces the concept of a complex problem.

Section 3.2 presents the research aim.

3.1 COMPLEX INTERVENTIONS

The implementation of the policy to introduce ACPs into general practice teams to support services should be recognised as a complex intervention for primary care (M. Campbell et al., 2000). Complex interventions are characterised as having a number of features (Craig *et al.*, 2008; Skivington *et al.*, 2021):

- The intervention involves multiple components.
- The intervention targets a broad range of behaviours.
- The intervention is delivered at different levels or settings.
- Different groups receive the intervention.
- Expertise and skills are required by those delivering or receiving the intervention.
- There is flexibility in how the intervention is delivered.

All these features are represented in the intervention of introducing new roles to general practice teams. Acknowledging the implementation of the policy as a complex intervention has important consequences for what approach to take in any research or evaluation, particularly in understanding how it might work in different contexts for different stakeholders.

If the strategy is to maintain and develop general practice services with ACPs, in addition to new GPs, understanding the key mechanisms that support new practitioners to integrate successfully is critical. Research is required in order to develop confidence that it will achieve its intended impact and not lead to unwanted and unintended consequences. The radical reconfiguration of GP services in the post-COVID-19 era adds further complexity.

3.2 RESEARCH AIMS

The aim of this research programme is to understand better:

What key mechanisms support advanced clinical practitioners to integrate into general practice teams to provide generalist care?

The interest in this research question arose from reflections on experience as a practicing GP, as a clinical supervisor of advanced clinical practice practitioners new to general practice and on the findings of previous research relating to the integration of one novel role (Physician Associates) into General Practice teams (Jackson, Marshall and Schofield, 2017).

Reflection on these experiences led to several questions and concerns about assumptions made in the strategy of using new advanced clinical practice roles to support General Practice teams as proposed. These included questions about how well the new roles are prepared for the increased complexity presented by the relative higher prevalence of multi-morbidity in deprived communities; how clinical supervision models might develop to be more effective to help new practitioners adapt to these challenges and how could they be tested? A better understanding of how the integration will affect team dynamics, patient flows, and referral patterns? Perhaps most importantly, what are patient's views and understanding about the transformation of their primary care services? These reflections are not discussed in more detail here but do inform decisions about the focus and scope of the research programme.

A large National Institute of Health and Care Research (NIHR) funded mixed-methods study described significant challenges when novel practitioners less experienced in general practice setting have to adapt to manage the medical complexity and uncertainty, which is a core requirement of first-contact general practice. The diversity in the roles available, the organisational structure of primary care and the immaturity of new primary care networks, which are an integral part of the transformation of services made the integration of these practitioners even more complex (McDermott *et al.*, 2022). GPs, who are required to support the integration of the new practitioners, recognise these challenges along with the associated responsibility and risk it brings for themselves their teams (Horrocks, Anderson and Salisbury, 2002; Drennan *et al.*, 2014; Henry and Hooker, 2014; Jackson, Marshall and Schofield, 2017; Nelson *et al.*, 2017). As similar challenges are described when physician associates are integrated into primary care teams as those challenges with other advanced clinical practice roles- for the purpose of this thesis, the term Advanced Clinical Practitioner will be inclusive of physician associates.

Concerns have been expressed that the intervention may exacerbate health inequity and lead to a two-tier service; it is especially important to understand how the intervention will work in services for the most deprived communities (Nussbaum *et al.*, 2021; Hutchinson *et al.*, 2023). A purposive focus on including primary care teams providing care for the most deprived communities will be adopted.

PART TWO: THE APPROACH

Part two explains the rationale behind the approach taken to explore the research question and presents the plan for the research programme. It comprises three chapters.

Chapter 4 describes some background to common research approaches in complex intervention science and why a critical realist approach was chosen as the best option for this research. It introduces the concept of programme theories and how they are developed and used in realist research. This includes an introduction to the concept of middle-range theory, an important tool for developing and interpreting programme theory.

Chapter 5 explores the philosophical foundations underpinning critical realist science in more detail. It describes the philosophical position of critical realism in relation to positivism and constructivism, the two dominant philosophical paradigms that inform research methodology. The ontological and epistemological consequences of this are described along with why causal mechanisms become the key phenomena of interest in realist science, framed in context-mechanism-outcome configurations. Critical realist methodology is introduced, including the concept and purpose of retroduction, an important part of realist research methods.

Chapter 6 develops the research programme according to the realist evaluation principles. Examples of realist evaluation approaches for different types of interventions in different situations are explored to understand how the realist evaluation cycle should be shaped for this research. The *purpose* of the evaluation, with respect to the intervention is defined in detail. The *scope* of the evaluation with respects to roles, geography, and population to focus on is defined.

The chapter concludes with an outline programme for the research.

4 APPROACHES TO COMPLEX INTERVENTION SCIENCE

This chapter explains theoretical, methodological, and practical reasons why the decision to adopt a critical realist approach was taken.

As the policy to introduce ACPs into General Practice teams is considered a complex intervention, section 4.1 describes Medical Research Council guidance for research into complex interventions, which includes adopting a more theoretical approach using programme theory.

Section 4.2 introduces programme theory and some different approaches to using programme theory models in complex intervention evaluations are explored.

The final section describes some practical considerations that led to a critical realist approach to being adopted.

4.1 SCIENCE AND COMPLEX INTERVENTIONS

4.1.1 Evaluation research guidance

The medical research council (MRC) recognised that its guidance for intervention research needed a refresh, after concluding that previous guidance insufficiently recognised the differences between complex intervention research and, for instance, drug development or controlled trials (Craig *et al.*, 2008). Updated guidance suggested an integrated approach to researching process and outcomes, a recognition of the sensitivity to local contexts (and the inappropriateness of relying on standardisation) and the importance of greater insight from theory of change within complex adaptive systems. The latest guidance also recommends that, depending on the purpose of the research, complex intervention research should be approached from different perspectives of efficacy (potential outcomes); effectiveness (outcomes in practice); theory-of-change (how the intervention might work); or system implementation (how it actually works) (Skivington *et al.*, 2021).

Whichever of these perspectives is adopted, the National Institute for Health and Care Research (NIHR) now recommend that complex intervention research should seek to include the following core elements (National Institute for Health Research, 2021):

- How does the intervention interact with different contexts?
- What is the underpinning programme theory?
- How can diverse stakeholder perspectives be included in the research?
- What are the key uncertainties?

- How can the intervention be refined?
- Do the effects of the intervention justify its cost?

This greater focus on a theory-based approach aims to develop better answers to questions about how an intervention brings about change (including what mechanisms are operating in different contexts) and to refine this theory to inform and adapt practice accordingly. Complex intervention research needs to go beyond asking whether intended outcomes are achieved to consider possible unintended outcomes, what contextual themes are important with respect to outcomes and how the intervention operates in practice. Though these more complex questions have more complex, less certain answers, they are often more useful than simpler questions and answers that don't appreciate the inherent complexity within a particular intervention (Skivington *et al.*, 2021).

The use of programme theory is recommended to help navigate the complexity within a programme of research. Prior to any data collection, programme theory is developed to establish a shared understanding of particular elements of an intervention and the key research questions that require exploration. The programme theory is then tested and refined in a series of stages. A post-study reflection and refinement on the initial programme theory can then be used to suggest improvements to the intervention in future implementation (Skivington *et al.*, 2021). The next section explores examples of how programme theory has been used in evaluation research to this effect.

4.2 PROGRAMME THEORY AND COMPLEX INTERVENTION EVALUATION

4.2.1 History of programme theory

Programme theory describes how a 'programme' (an intervention, strategy, or policy) is understood to contribute to the series of events that explain how intended (or unintended) outcomes are generated (*Global Evaluation Initiative*, 2022). Creating programme theory models therefore involves breaking down the 'programme' into a series of related but individual components to provide some logical representation of how they might interact individually and as a whole.

The use of programme theory to inform evaluation science developed towards the end of the twentieth century in response to a frustration that evaluation practice at the time that was too often limited to quantitative measurements of identified outcome indicators and several illustrative case studies. This approach was considered too reductionist, failing to capture the complexity within interventions and how individual components of interventions might be functioning. The suggested

alternative was a more 'theory-based evaluation' that concentrated on evaluating 'theories of change' inherent in the intervention design (Weiss, 1995).

Stame (2004) describes how commissioners of intervention evaluations were frequently reluctant to embrace such complexity or question their assumptions, often preferring a simple answer to the question 'has it worked?' before investing resources into the same intervention elsewhere. He suggests that creating a detailed programme theory also provides a helpful tool to argue that efforts to address complexity will be worthwhile (Stame, 2004). A programme theory can allow an evaluator to respond to the need for answers to the question 'has it worked?', whilst also providing an explanation and rationale for how, when, and why it might not work if implemented in a different environment.

4.2.2 Heterogeneity in approach to using programme theory.

As methods to use programme theory developed, differences approaches were adopted. Weiss (1997) cautioned against confusing evaluation of implementation with evaluation of programme theory (Carol H. Weiss, 1997). Weiss argues implementation-based evaluation is focused on limited parameters about how an intervention is implemented (e.g. intensity, coverage, consistency etc.). In contrast, programme theory evaluation focuses its attention on the mechanisms within the programme theory that operate during implementation that led to the emergence of particular desirable outcomes.

In a systematic review of theory-driven evaluations, half were evaluations of healthcare related interventions (Coryn *et al.*, 2011). The rationale for choosing a theory-driven approach was described in only three-quarters of evaluations (73%). Descriptions of approaches to develop initial programme theory included theorising on previous research, stakeholder discussion, logical deductive reasoning, inductive reasoning, and exploratory research. Around 50% (22/45) used a combination of inductive and deductive reasoning by setting theories from existing research against stakeholder opinion. The most commonly used source of existing theory was from theories on general social behaviour from psychology and social sciences.

The authors conclude that a broad range of theory-driven evaluation methods has developed, either conceptually or through repeated practice, all of which harness programme theory as a starting point. Varieties of different names for these methods were found, including all of the following: program-theory evaluation, theory-based evaluation, theory-guided evaluation, theory-of-action evaluation, theory-of-change evaluation, program logic, logical frameworks, outcome hierarchies and realist evaluation. (Coryn *et al.*, 2011).

4.3 WHICH APPROACH TO TAKE?

Amongst this heterogeneity, the purpose of using programme theory remains the same; an attempt to open up the 'black box' that sits between an action taken and an outcome observed; and the mechanisms that lead from one to the other (Stame, 2004; Coryn *et al.*, 2011). However, though each method intends to open this 'black box', the methods of understanding its contents can be subtly different. For instance, in some examples of theory-based evaluations, an atheoretical starting position is adopted, unpacking the black box, and then examining the contents to decide what theory was most plausibly in it at the end (Stame, 2004).. In contrast, in Theories-of-Change and Realist Evaluation, an initial theorising process in undertaken to identify plausible theory in the box prior to the unpacking, which also helps consider where to focus the evaluation (or which contents to look at more closely)

In Theories-of-Change evaluation, Weiss (1995) suggests the best theory to focus an evaluation on is that which most plausibly will be affecting practice (Weiss, 1995). In Realist Evaluation, Pawson and Tilley (2004) introduce a pragmatic process of considering the 'purpose' and 'scope' of an evaluation; considering the requirements of any commissioners; the importance of different questions; the potential availability of data, the resources available and other practical considerations (Pawson and Tilley, 2004). Theories-of-Change and Realist Evaluations therefore have similarities. Methods that allow a more targeted approach seem particular suitable, as they allow the possibility of exploring greater depth of theory within the resources available.

4.3.1 Theory-of-change or Realist evaluation

Blamey et al. (2007) compared Theories of Change and Realist Evaluation more closely (Blamey and Mackenzie, 2007). Though some of the differences described seem at first like methodological nuances, they provide useful framework to help decide which of the two methods to adopt. These are summarised in table 1 below.

There are many similarities between the two approaches. Both recognise that the impact of a programme is context dependent and that purely social constructivist methodology can be limited by this and both involve stakeholders in programme theory development. Differences are seen in epistemological approaches with relation to the concepts of causation, the way mechanisms of causation are described, and how this affects evaluation methods. There are also differences in the relative dominance of the evaluator's experience and expertise, existing evidence, and stakeholder input in decisions about which areas to focus on, with realist evaluation often taking a deeper perspective on a specific area, described as 'concentrating its fire'.

Table 1 A summary of the similarities and differences between evaluation using Theories of Change and Realist methodologies, adapted from Blamey and Mackenzie, 2007.

Area to consider	Theories of Change	Realist Evaluation
Background to methodological approach	Impact of programme cannot be determined with confidence without taking context into account	Impact of programme cannot be determined with confidence without taking context into account
	Purely social constructivist approaches are limited by being mired in a particular context	Purely social constructivist approaches are limited by being mired in a particular context
Position on Causation (epistemology)	Causation – accepts that Randomised Control Trials can determine causation, suggest consensus built on what should happen and then examine if it does	Causation – more antagonistic to RCTs proposing emergent generative mechanisms, evaluation tests validity of proposed mechanisms
Programme theory generation	Involves stakeholders – suggest consider long-term objective than work backwards to define actions and resources required for shorter term objectives	Involves stakeholders – suggest consider the long-term objective, target population and context and identify prevailing theories underpinning the intervention
	Stakeholder position more dominant in deciding on Theories of Change to be examined	Evaluator position more dominant involving practitioner knowledge and existing evidence
	Possible mechanisms for evaluation are most plausible, testable, and practical	Possible mechanisms for evaluation described as potential Context-Mechanism-Outcome configurations (CMOC's)
Evaluation methods	Evaluator gathers data as required to test these theories	Evaluator gathers data on particular Context-Mechanism-Outcome configurations to test validity of mechanism
	Mechanisms (Theories of Change) drives purposeful selection of relevant data	Mechanisms (in the form of Context-Mechanism-Outcome configurations) drives purposeful selection of relevant data
	Evaluation seeks to add additional understanding of the overall larger programme theory much like a jigsaw	Evaluation seeks to test validity of Context-Mechanism-Outcome configurations to better understand mechanisms under scrutiny
Consequences	Builds a strategic perspective, but perhaps more superficial	More focused deeper perspective, 'concentrates its fire'
	Requires substantial time to work with stakeholders, and collect data from multiple levels	Still time consuming but less emphasis on consensus, evaluator decides where to focus

4.3.2   Conclusion

As the implementation of the policy in question is taking place in many different general practice teams, serving very different communities, there is good reason to understand how, why, and for whom, the intervention will work in different contexts (Pawson et al., 2005). This is particularly true as there may be unintended outcomes that are counter to those desired (Nelson et al., 2017). A better understanding of the mechanisms within the intervention may be key to recommending particular conditions to support the successful implementation across general practice more widely. The suggestion of 'concentrating the fire' of the evaluation on a particular area is considered particularly suited to this research programme as it allows a targeted approach which will allow greater depth to be explored within the resources available.

A realist evaluation method for the evaluation is therefore chosen. The standard critical realist methodology, including a consideration of purpose and scope to help 'concentrate the fire' of the evaluation will be used.

As realist research is theory driven, the next sections explore the use of theory for realist evaluation in more depth and introduce the concept of a context-mechanism-outcome configuration.

4.4   PROGRAMME THEORY AND REALIST EVALUATION

4.4.1   Creating programme theory

The creation of an initial programme theory (IPT) is a necessary step to help identify the logic and any possible assumptions within an intervention design. Recognising the intervention design will be based on experience, knowledge and intuition informing theory about how things will work; the aim is to describe mini theories that capture hypotheses or assumptions about how individual parts of the programme will function. Each of these is thereby exposed as fully as possible to be examined in more detail to identify which are supported by the evidence and which are not (Weiss, 1995; Carol H Weiss, 1997)

As the process of creating a programme theory will always incorporate hypotheses and assumptions about how the intervention will operate held by the researchers themselves, it is best practice to include external sources in additional to any previous experience or expertise. Examples include a review of similar programmes in the literature; discussion with stakeholders and sometimes formal logical deduction (Carol H. Weiss, 1997).

4.4.2   Context-Mechanism-Outcome configurations

In realist evaluation, these hypotheses and assumptions are captured in a form that explains in what situations, and how, particular conditions may lead to particular outcomes. This is described as a

series of linked hypotheses about particular contexts that might trigger mechanisms within the intervention that lead to particular outcomes, described as a Context-Mechanism-Outcome Configuration. These context-mechanism-outcome configurations (CMOCs) then become the core analytical units of the evaluation (Pawson and Tilley, 1997; Wong *et al.*, 2013).

CMOCs are a heuristic developed by Pawson and Tilley for critical realist science to describe causation (Pawson & Tilley, 1997). The simple formula suggested to do this is:

mechanism + context = outcome.

Pawson and Tilley suggest that, when a particular action is taken, though our main concern might be the outcome, the causal explanation for that outcome is developed by understanding the generative mechanism by which the outcome was affected; and secondly, the context, or conditions, that allowed that mechanism to operate.

This model of generative causation is illustrated in figure 2.
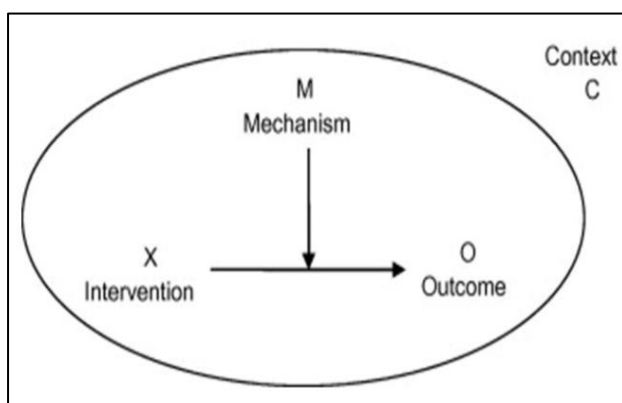
Figure 2 An adapted model of generative causation according to Pawson and Tilley, 1997.
Any intervention is only causal if its outcome is triggered by a mechanism acting in a particular context.

Though the concept of a CMOC is considered integral to critical realist research, it should only be seen as a heuristic device to help attempts to explain the world, used where and when helpful in this regard and not slavishly adhered to when other methods might be better (Marchal, Kegels and Van Belle, 2019).

A review of realist evaluations found a multitude of different definitions for mechanisms and a series of methodological challenges in using them (Lemire *et al.*, 2020). These include the interdependence of different mechanisms, difficulty adjudicating exactly what is a context, mechanism or outcome in a configuration and difficulty testing CMOCs.

Dalkin et al. (2015) provided a useful adaptation of Pawson's model that separates out some objective element (the resource) of a mechanism and a more subjective element (the reasoning). This suggests that the resources provided can contribute to aspects of the context which triggers other parts of the mechanism to generate an outcome (Dalkin *et al.*, 2015).

Dalkin presents a modified formula to make this possible:

[mechanism (resources) + context] + mechanism (reasoning) = outcome

This model seems particularly helpful for those mechanisms in social sciences related to thoughts or behaviours. It also helps to distinguish between what is context and what is mechanism and therefore is the model adopted for this research.
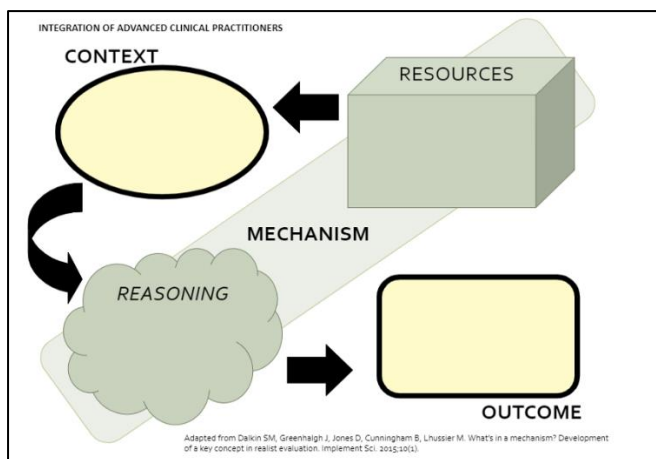
Figure 3 An illustration of Dalkin et al.'s adapted version of a context-mechanism-outcome configuration that separated resource and reasoning elements of the mechanism.

4.4.3   Modelling programme theory.

Even though programme theories are designed to provide simple representations of complex interventions to facilitate a more organised study of the intervention, their descriptions are not always simple and often look different to each other. This is because components at different levels can be included, which might be expected to act in different ways with each other (i.e. synergistically or opposite). Additionally, there may be simultaneous expectations, targets or goals driving events at the same time from different stakeholders.

Simple linear models are often used as an introduction to a particular programme theory, such as the example in figure 4. These usually describe the input, processes, outputs, outcomes, and impact in a more or less the same linear order from left to right (Rogers, 2008).
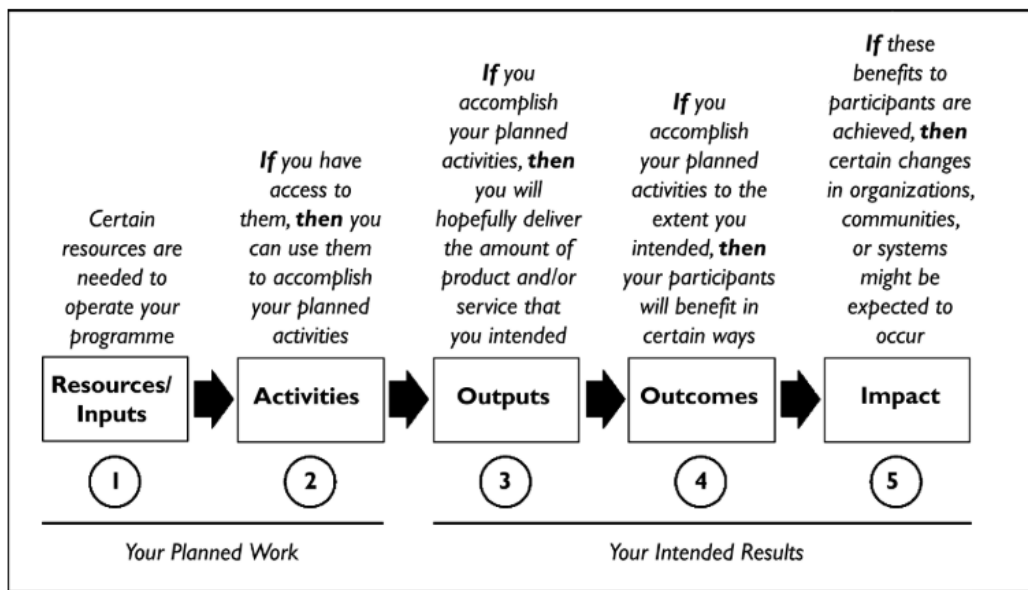
Figure 4 A simple logic model (Kellogg Foundation 2004) – sourced from Rogers (2008)

Such linear models are most useful at the beginning of programme theory development but as the complexity of an intervention increases (or becomes better understood), a programme theory may change from a linear to non-linear and then to something even more elaborate as it tries to reflect this complexity (Rogers, 2008). Simple linear models have been argued to resemble a 'steady state' situation too closely, where input A leads to activity B and then output C and so on. Problems also arise with simpler models if the intervention is carried out at different sites, when different levels of governance operate (i.e. local and national) or where there are simultaneous synergistic or alternative mechanisms operating (Stame, 2004).

Models that are even more complicated are not expected to describe the picture completely. This is particularly true when an intervention is taking place in multiple sites which themselves generate further complexity, self-organising in different ways. These sorts of intervention have multidirectional inputs and a multitude of CMOCs with 'tipping-points', from new CMOCs emerge as the intervention plays out at each site (Martin and Sturmberg, 2005). An example of a more complicated model that shows some simultaneous mechanisms is shown below in figure 5.
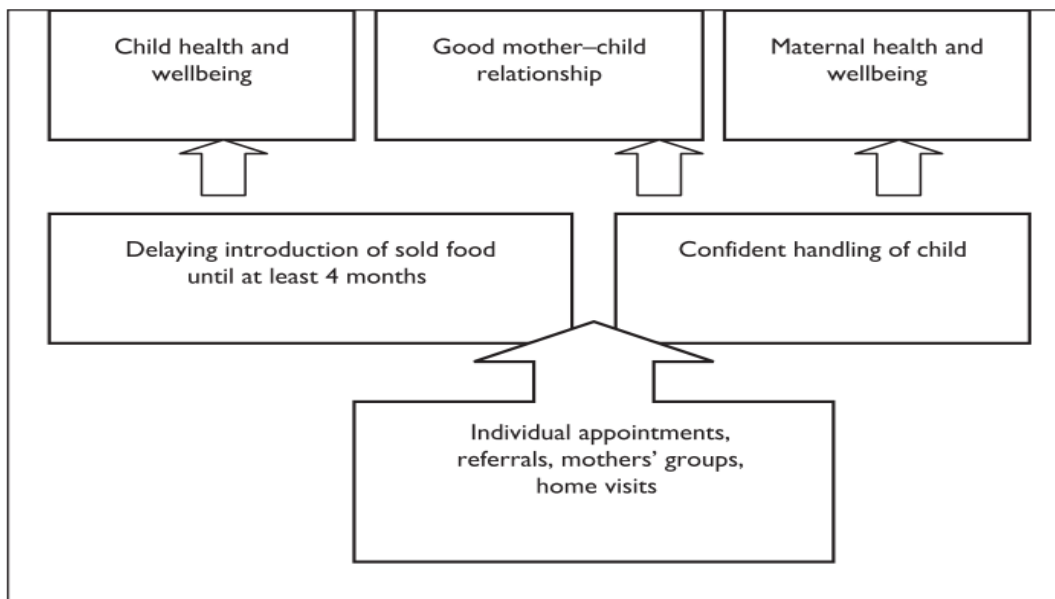
Figure 5 A non-linear model showing simultaneous causal strands - sourced from Rogers (2008)

4.4.4   Using middle-range theory

The term 'theory' can be used for everyday hypothetical thoughts about individual events whilst also describing grander all-encompassing ideas about the way the world works, such as the theory of evolution. In recognition of a need for some connection between intimate and detailed thoughts about individual events, and those about the way the world works more generally, Robert Merton introduced the concept of '*theories of the middle range*' (Merton, 1968)*.* Middle-range theories are described as those that lie between '*minor but necessary working hypotheses that evolve'* and '*systematic efforts to develop uniform theory to explain observed uniformities'* in the world at large. Usually relating to social behaviour or social change*,* they can provide an essential 'jumping off' point when using theory to undertake a more rigorous and focused examination of particular phenomena (Boudon, 1991).

The theory of reference groups is an often-used example (Pawson, 2000). This is the theory that attitudes and beliefs about one's own situation are created through assigning some different particular group as a natural reference. First developed through observations of the sentiments of soldiers of different ranks and status groups within the armed forces, it is identified as a middle-range theory because it can explain observations at a number of levels. Examples include the frustration when in a multi-lane traffic queue when an adjacent lane starts to move freely and wider considerations such as social mobility and motivations within and between different social classes.

Middle-range theories are usually derived (with more or less rigour) through a variety of methods including logical analysis, synthesis of data or conclusions derived from observed phenomena (Smith and Liehr, 2014). They should be sufficiently abstract to have the potential to be generalizable but remain close enough to the real world to be useful to create hypotheses about what explanatory mechanisms might operate in particular contexts. In realist evaluation, middle range theory is used to inform theory on potential *'causal models of (social) processes',* which describes what conditions might be necessary for a programme model to operate in the way described (Ritzer and Stillman, 2011). They can therefore also be used to consider the plausibility of any new programme theory generated through research (Pawson, 2000) .

4.5 CHAPTER SUMMARY

Programme theory is a flexible tool that is used for complex interventions. Its design has to have enough clarity to map and allow researchers to shape their research accordingly and when refined through evaluation can predict the most likely outcomes within an intervention. In critical realist science, it is recognised that it will only capture part of the picture of a complex intervention, and this is likely to be the case for the re-shaping of general practice teams through the introduction of ACPs. This is because the intervention will be taking place in multiple different practices, each of which will self-organise in different ways as they integrate into the team to serve the different needs of its staff and communities. Additionally, the NHS Long Term Plan introduces multiple levels of contractual governance arrangements (e.g. between practice units and networks of practice units).

In order that programme theory captures the most important areas for stakeholder, it is suggested that the programme theory should be developed with stakeholders and / or commissioners (Rogers, 2008). Additionally, deciding which parts of a programme theory to select for focused evaluation poses an additional question for researchers. Middle range theories can help guide which theories are most plausible or alternatively, stakeholders might help decide which are most pertinent or important, or the centrality of particular theories to the desired outcomes of the programme might support these decisions (Weiss, 2000).

This chapter has established that a critical realist approach to the question has theoretical, methodological, and practical advantages over other approaches. It has explored important theoretical tools used in a realist evaluation including programme theory and middle range theory. It has introduced the concept of causal mechanisms and how, in realist evaluation, mechanisms are identified through recognising patterns between contexts, and outcomes that suggest a Context

Mechanism Outcome configuration. The process of constructing a programme theory to identify what CMOCs are most plausible therefore becomes a crucial component of any critical realist research prior to data analysis (Pawson, 2013).

The concepts of causal mechanisms and CMOCs that underpin critical realist science are derived from the philosophical principles of scientific realism. Chapter 5 explores the ontology and epistemology of scientific realism in order to provide a deeper understanding of causal mechanisms as real phenomena in the world: what they are, how they relate to contexts and outcomes and how they shape research methods.

5 THE PHILOSOPHICAL FOUNDATIONS FOR CRITICAL REALIST RESEARCH

This chapter provides an overview of the philosophical foundations of critical realist science, scientific realism. Sections 5.1-5.3 draw primarily on the work of philosopher Roy Bhaskar and the critique of Bhaskar's body of work by Andrew Collier in 'Critical Realism: An introduction to Roy Bhaskar's philosophy' (Collier, 1994)

Section 5.1 explains the critical realist argument for the limitations of more commonly used philosophical paradigms of positivism and constructivism.

Section 5.2 introduces critical realist ontology including concepts of explanatory causal mechanisms, a stratified reality, and the effects of these (i.e. emergence, spontaneity).

Section 5.3 addresses critical realist epistemology. It describes how causal mechanisms become the key phenomena of interest and how they can be studied in more detail.

Section 5.4 introduces and explains the critical role of retroduction in developing initial theory in critical realist research.

A conclusion of the how these philosophical foundations shape this research programme ends the chapter.

5.1 CRITICAL REALISM IN RELATION TO OTHER ONTOLOGICAL PERSPECTIVES

Ontology is 'the science or study of being - that branch of metaphysics concerned with the nature or essence of being or existence' (Oxford English Dictionary, 2023). The ontology of Bhaskarian critical realism lies somewhere between, but distinct from positions held by positivist and constructivist scientific paradigms (see table 2). This is because Bhaskar proposes the ontological claims of each of these philosophical paradigms are false as they can only define limited parts of what it is possible to know about the real world. Bhaskarian critical realism attempts to address this (Collier, 1994a pages 7-16)

.

Table 2 A summary of the contrast between critical realist science and the positivist and constructivist approaches to science.

	Positivism	Critical Realism	Constructivism
Ontology	Objective reality independent of individual subjectivity	Objective reality objects, events, causal mechanisms stratified reality emergence, spontaneity imperfectly apprehended	Socially Constructed reality via subjective meanings inferred from events
Epistemology	Objectivist Findings considered generalisable until falsified	Modified objectivist Findings probably generalisable (but mediated by humans)	Subjectivist Findings created by subjects & researcher (may be transferable)
Methodology	Empirical testing and verification of theories quantitative deductive experiments e.g. RCT	Knowledge inferred to identify theoretical causal mechanisms before empirical testing retroduction qualitative or mixed methods	Knowledge generated through individuals understanding of meanings of events mostly qualitative

5.1.1   A critical realist critique of the positivistic approach to knowledge

Bhaskar proposes the classical realist ontology of positivist-objectivists (which he calls *actual-realism*) is too superficial to describe the full nature of reality. His most significant premise for this is that it fails to recognise *causal mechanisms* as separate, independent real phenomena that make events happen in the real world. Without recognising these phenomena, adopting a positivist-objective ontology limits conclusions about what is really 'true' in the world to those events which are consistent, predictable, and observable (Collier, 1994).

When A happens → B happens   (in a consistent and predictable way).

Bhaskar argues that, even with simple physical observations, making such conclusions whilst ignoring causal mechanisms (whether known or unknown) that may (or not) be operating to affect the process is to present a false picture of reality. Bhaskar proposes that, once causal mechanisms

are recognised, depending on conditions at the time, when A happens, the result could actually be anything from C to Z or beyond, depending on which causal mechanisms are triggered at the time.

When A happens → B happens (except when conditions C1, C2, C3…mean that C, D, E…will happen)

This idea creates problems for a positivistic ontology, which suggests we can only truly know about reality through objective experience or experiment. This inadequacy is argued on the following grounds.

- Things exist that are not perceived.
- Events occur that are not predicted by experiments.
- Causal mechanisms exist that are not active.
- Knowledge can be created from theory alone i.e., theoretical physics.

Critical realists therefore argue that science has to recognise real phenomenon beyond those that can be observed. This involves *theorising* the existence of potential real phenomena (e.g. causal mechanisms), which can then have their plausibility tested through observations. The advancement of knowledge through critical realist science is therefore *theoretically driven*, rather than *empirically driven*. More detail on the implications of this is covered later in this chapter.

5.1.2   A critical realist critique of the constructivist approach to knowledge

The classical constructivist approach is based on an idealist (or non-realist) ontology that proposes that things completely independent of the mind are never truly knowable. This includes both the *objective* mind (balanced, rational, factual deliberations) and the *subjective* mind (assumptions and personal opinions). Bhaskar argues this position is a 'philosophical fudge'. On the one hand, it precludes any rational challenge to claims of truth or reality, leaving no premise for one person to objectively suggest the individual experience (or truth) of another is false. On the other hand, if constructed knowledge about the world is abandoned so easily when new information become available, constructivist claims about reality can only ever offer transient, tentative theories. Bhaskar argues that a more realist approach is required that makes clearer statements regarding the objective truth of scientific claims and exposes those statements to rational argument and refutation from others.

In summary, Bhaskar proposes the two dominant philosophical approaches that science has used to base its exploration and discovery of knowledge about the world are inadequate and flawed. The next section describes the critical realist ontology that addresses these limitations.

5.2 Critical realist ontology

5.2.1 Phenomena and domains

Critical realists start by dividing all the phenomena that exist in the world into two groups-intransitive phenomena and transitive phenomena.

- Intransitive phenomena are all things that exist external to events. Intransitive phenomena therefore include physical objects, but also individual mind-sets, the meaning making of events, and most importantly generative causal mechanisms.

- Transitive phenomena consist of events (whether or not they are observed). Events can exist in an actual domain (which includes all events) and a smaller, empirical domain, limited to those events observed or experienced (see figure 6).

	Intransitive phenomena	*Transitive phenomena*
Real Domain *(all phenomena)*	Physical things Ideas and thoughts Causal Mechanisms	All Events (actual domain) Observed events (empirical domain)

Figure 6 Illustration of real, actual & empirical ontological domains within critical realist ontology.
The complete 'real' domain of a critical realist ontology includes all events and all intransitive phenomena. *(Collier, 1994)*

5.2.2 Ontological strata and emergence

Critical realist ontology proposes these phenomena exist at multiple, connected ontological strata or levels. An example of such strata separating purely material things from material living things (e.g. plants) and rational material living things (e.g. humans) is shown in figure 7.

This ontological stratification of the world creates the *emergent* nature of the world. Events at each level are always generated by causal mechanisms at a lower level, triggered by particular conditions. These events will create new conditions that trigger new causal mechanisms, which then lead to events at higher levels. An infinitely complex view of the world is created. A visual representation of this might be the surface of water during rainfall, with multiple emerging circles of events, overlapping and fading as conditions change due to other emerging circles.
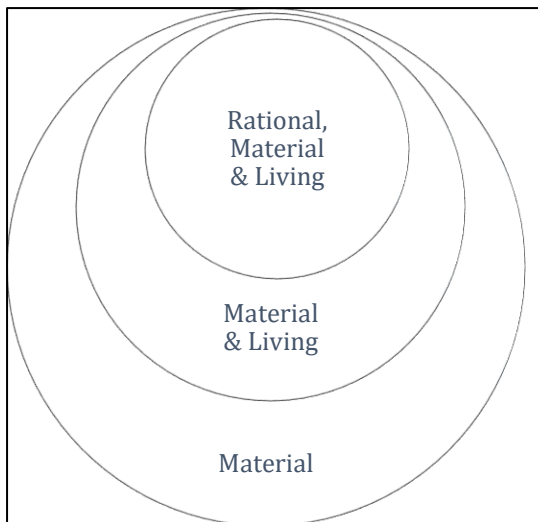
Figure 7 Ontological stratification of everyday kinds of being in critical realism

Collier describes an example of this emergence from the physical sciences. In order for a chemical reaction to be observed during an experiment (transitive domain), a generative causal mechanism (intransitive) has to be present within the substrates in a lower strata (e.g. triggered by the valency of atoms within those compounds). In turn, the atomic valency of the atoms has to be generated by causal mechanisms present in lower physical strata such as atomic structure, and so on (Collier, 1994).

Scientific realism suggests that this complexity means that conditions and events in lower levels cannot predict events in higher levels with the certainty or regularity that positivists claim. However, they can still provide *some* scientific basis for how and why events in a higher order strata are likely to have occurred in a particular way (see figure 8).
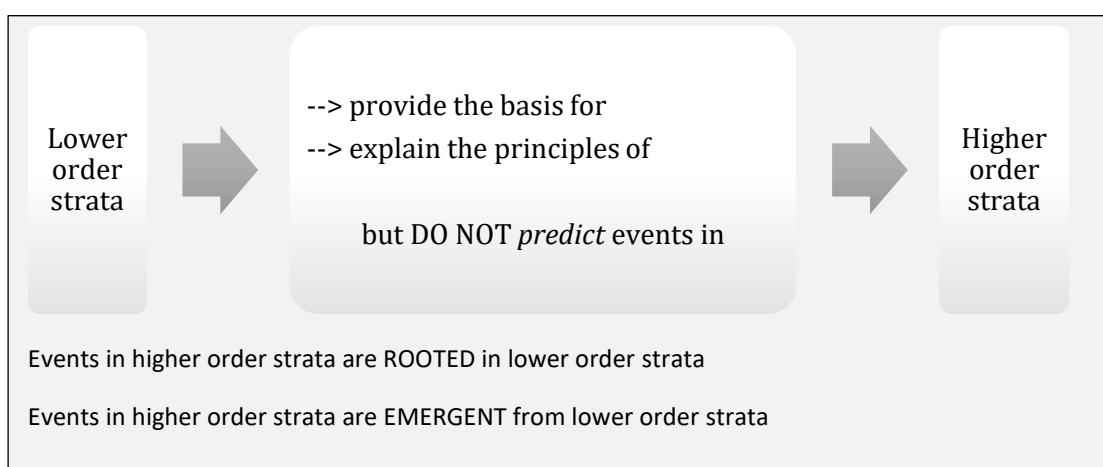
Figure 8 The emergent nature of phenomena in critical realist ontological strata

The relationship between various levels in the strata goes both ways: causal mechanisms triggered by conditions in lower levels cause events in higher levels; events in higher levels change conditions in lower strata. Consider the strata described in figure 7. If a person (rational, material & living) becomes too warm, they might open a window, conditions could then be created for a bird (material & living) to fly into the room. The bird might then knock over a vase (material), which smashes on the floor. The conditions of the lower level of strata are irreversibly changed by events in higher levels.

Conditions and causal mechanisms that lead to real human thoughts and ideas, meaning-making, social behaviour, and wider social structures all operate in the same way, within distinct levels, irreducible to, but interdependent with those below and containing generative causal mechanisms that cause events in those above.

5.2.3   Spontaneity

The emergent nature within each level in the strata also leads to spontaneity. At higher strata i.e., living things (humans, animals, plants) the effects of this are more apparent. Humans have the freedom to act on reason, self-criticism, and reflection; trees will grow according to their own nature (impossible to predict by mechanical laws) potentially creating new habitats for living animals or moving inert matter. This spontaneity adds further to the complexity of the real world.

5.2.4   Section summary

The aspects of the scientific realist ontology discussed above have important consequences for doing critical realist science. Though the stratification of the world adds additional complexity, each level can be studied independently as it remains autonomous in its own right. However, depending on the level in the strata of interest and the theorised mechanisms to be studied, different conceptual frameworks and scientific method will be required to identify the likelihood of particular mechanisms existing. Critical realists accept that in lower levels in the strata, scientists can come *close* to achieving closed controlled systems for more traditional positivistic style experiments but suggest in higher levels, levels of complexity, emergence and spontaneity means these empirical approaches to experiment are no longer possible. A different epistemological approach is required.

5.3   CRITICAL REALIST EPISTEMOLOGY

Epistemology is 'the theory of knowledge and understanding, esp. with regard to its methods, validity, and scope, and the distinction between justified belief and opinion' (Oxford English Dictionary, 2023). It is about how we can know and learn about what there is in the world.

When considering how to obtain 'knowledge' about a theorised causal mechanism, it is worth considering how any experiment to generate new knowledge in such a complex, unpredictable world is even possible. This has led to researchers describing experiments as taking place either within 'closed' systems (with controlled and closely defined conditions), or 'open' systems, (uncontrolled but within relatively defined settings), depending on whether a positivist and constructivist methodology is being employed (see table 3).

Table 3 A summary of the how positivist and constructivist research is framed around open and closed systems (adapted from pages 33-36).

positivism	Closed Systems→ (accepts never perfect but describe how have closed off as much as possible)	Observation discovers isolated mechanisms (A → B) (but only under controlled experimental conditions)	**Critical realism** Real life events are caused by generative mechanisms, triggered by particular contexts, which are impossible to *fully* predict
constructivism	Open Systems → (accepts that system is open but carefully describes settings of research)	Observation describes phenomenon to better understand it (but only in particular settings, may propose some mechanisms for events)	

5.3.1   Avoiding epistemic fallacies

Critical realists argue epistemic fallacies occur when the existence of causal mechanisms is ignored. This is because statements about what is real and true are reduced to statements about what is knowable and known (Collier, 1994). Danermark (2005) explains this happens when research methods conflate the three domains of critical realist ontology. Ignoring the potential existence of unrecognised causal mechanisms creates false assumptions that a more complete picture of the world is known than is actually the case (Danermark *et al.*, 2005). Put another way, even when one is confident in one's observations and the methods used to make them, it does not mean those observations are necessarily a true or complete representation of the world. This is illustrated with a description of the commonly used masked man fallacy (see figure 9)

> Premise 1: I know who Bob is *(knowable and known)*.
>
> Premise 2: I do not know who this masked man is *(knowable but <u>not</u> known)*
>
> Conclusion: Bob is not the masked man *(reality assumed solely on what is known)*.
>
> *Premise 1 and Premise 2 both may be true, but the conclusion false if Bob is putting the mask out on out of view and the speaker does not know about it, nor consider it as a possible causal explanation. By failing to theorise unknown mechanisms or unobserved events, the speaker is conflating confidence about what they know with confidence about what is real.*

Figure 9 A summary of the how positivist and constructivist research is framed around open and closed systems (adapted from pages 33-36).

This simple example illustrates why critical realists argue that the recognition that theorised, explanatory causal mechanisms are real world phenomena provides an opportunity for a deeper analysis and understanding of the real world.

Critical realism thus provides a form of 'depth realism; if we can gain a better understanding of the causal mechanisms that may or may not be operating in the world, we can become more confident of creating the types of conditions that trigger events we particularly want to occur. In critical realist epistemology, the theoretical development of plausible causal mechanisms, which can then be studies through scientific method, becomes the primary concern.

5.3.2   Identifying causal mechanisms

As discussed, the higher the level of strata being studied, the harder it becomes to create closed systems for experiments. Using methods translated directly from positivistic forms of realist science are unlikely to work. Bhaskar presents various models for critical realist methods that are suited to science in less open systems (Collier, 1994). An often-utilised adaptation of these models is based on four stages; Description, Retroduction, Elaboration, and Identification (DREI) (Danermark *et al.*, 2005; Wynn and Williams, 2012; Decoteau, 2017; Evans *et al.*, 2021). These stages do not necessarily occur sequentially.

An adapted description of the DREI model, which informs the methods in this research, is described in table 5.

Table 3 Adapted description of the D R E I process of critical realist science.

STAGE	Description
Description	Processes broken down into component parts and an outline of their relation to each other described/re-described (initial programme theory)
Retroduction / theorising	Theorising through analogies with already known phenomena to develop possible explanations of events. An iterative process, involving stakeholder consultation, middle-range theories, literature reviews, personal expertise, and reflexivity to hypothesise potential causal mechanisms
Elaboration / Elimination	Consideration and comparison of the causal mechanisms described that can be, by means of independent analysis, developed, or eliminated.
Identification/Clarification	Empirical observation to corroborate or eliminate the potential causal mechanisms described or suggest new ones that are operating that were not theorised.

This introduces a further concept that needs further explanation, that of retroduction, which is explained in the section 5.4. Step four requires a robust process of identifying whether the empirical data is corroborating particular theorised causal mechanisms or not. The principles for how this are done are covered next; though the detailed methods for how this was achieved this with the qualitative data obtained is described in chapter 11.

5.3.2.1   Tendencies

I have established how critical realism rejects the certainty of positivistic (actual-realist) statements such as: *A leads to B in all circumstances.* Instead of attempting to describe how certain conditions to *determine* events with such confidence, critical realists consider the *tendencies* for contexts to trigger causal mechanisms and subsequent events. This can be expressed as the following:

> Given particular conditions (contexts), phenomena at any level in the strata will have a *'tendency'* to cause particular events (outcomes) at any given time.

An example provided by Collier relates to the behaviour of dogs; dogs exhibit the *tendency* to bark when they hear burglars, but some dogs are more likely to bark than others (Collier, 1994). Other

examples are possible at different levels. Certain chemicals (e.g. pure sodium) display the *tendency* to explode, but this is greater when there is more moisture in the air. One person might have a *tendency* to gamble if it is part of a work social event and they can afford it, another might take every opportunity, even if they have no money. These examples illustrate how, even though things can have the innate tendency to cause certain events, particular conditions must be necessary for this tendency to exercise itself. Collier presents a method for considering what these particular conditions might be more objectively. In order for a particular tendency to exercise itself,

1. A thing needs to be pre-disposed to exercising the tendency,
2. some enabling conditions need to be present,
3. a necessary period of exposure to the conditions needs to occur and
4. the thing needs to be in a state to exercise the tendency.

As already described, contextual conditions in one level will have different tendencies to trigger different causal mechanisms that lead to events in higher levels (Collier, 1994).

5.3.2.2   Demi-regularities

As described previously, critical realist science uses the terms contexts, mechanisms, and outcomes to capture the effect of these tendencies, usually described as context-mechanism-outcome configurations (CMOCs).

Pawson proposes a process of theorizing that *'takes the form of speculating upon the generative mechanisms that (may) give rise to observable outcome patterns'* whilst at the same time describing *'the pre-existing contextual conditions that have been conducive to their formation'* (Pawson, 2000).

The tendencies for particular contexts to trigger theorised CMOCs are then recognised through the identifying patterns (or breaks in patterns) in relevant empirical data (Fletcher, 2017). Pawson and Tilley (1997) call these semi-predictable patterns *demi-regularities.* The identification of demi-regularities provides the evidence that certain CMOCs are likely to be operating and therefore the theorised mechanisms plausibly exist (Pawson and Tilley, 1997).

5.3.3   Section summary

Critical realist epistemology recognises the importance of explanatory causal mechanisms and the problems of not recognising their existence is described. A different method of enquiry is required that includes theorising what CMOCs might be present, partly through a process called retroduction, before empirical data is obtained.

Theorised mechanisms are captured as micro-theories that connect contexts and outcomes in the form of CMOCs within a broader programme theory. Identifying the plausibility of these CMOCs are depends on identifying tendencies for certain conditions to trigger particular mechanisms. This requires the identification of patterns in data relating to the CMOCs called demi-regularities. The challenge of recognising these demi-regularities in qualitative data is considered in much more detail in the main methods section for the empirical work (chapter 11). A better understanding of the relationship between contextual features, explanatory mechanisms, and any '*significant*' regularities in *'outcome patterns'* becomes the core purpose of realist enquiry (Pawson, 2000).

The other important concept introduced is that of retroduction. It is important to understand what retroduction is, how it works and how it can be used before embarking on any critical realist research. The next section of this chapter explores retroduction and the closely related concept of 'inference to the best explanation'.

5.4 RETRODUCTION.

5.4.1 Introduction
Though the concept of 'retroduction' is regularly described as a fundamental component of Critical Realist methodology (Sayer, 2004; Danermark *et al.*, 2005; Wong *et al.*, 2016; Trisha Greenhalgh *et al.*, 2017; Jagosh, 2020), it has been co-opted from a term originally introduced synonymously with 'abduction' as a specific form of logical reasoning in the late 19th century by C.S Peirce. (p 385, (Bertilsson, 2004).

Critical realists make a distinction between abduction and retroduction. Whereas abduction is described as a process of explaining individual phenomena within the conceptual framework of one's experience, retroduction is considered a more in-depth process of theoretically reconstructing the necessary conditions and explanation for observed phenomena to be as they are (Danermark *et al.*, 2005).

Retroduction has therefore been described as '*reasoning backwards'* (Wirth, 2010). It involves a level of pragmatism about recognising any particular reasoned explanation as acceptably plausible, described as 'Inference to the Best Explanation'. Retroduction can be considered to resemble this process worked through as explicitly as possible (Lipton, 2000).

5.4.2 Inference to the Best Explanation
The term Inference to the Best Explanation (IBE) was first proposed by Harman to describe the process of deciding which causal hypotheses to accept to explain events to accept (Lipton, 2000).

'its governing idea is that explanatory considerations are a guide to inference, that scientists infer from the available evidence to the hypothesis which would, if correct, best explain that evidence.' (Lipton, 2000)*.*

Darwin's theory of evolution is an example of how IBE has worked to advance science. Darwin did not have the evidence to formally prove or disprove his theory of evolution with certainty, but instead inferred the theory as the best explanation for the evidence he had collected. In a similar way, an astronomer will *infer* that a star is moving rapidly away from earth because this best explains the changes in the light spectrum that are detected from it, without empirical proof.

Lipton accepts criticism that these inferred explanations of how the world works can be challenged as 'self-evidencing' and will - as with all forms of inference - contain a circularity of argument. However, he argues that, as in the examples provided, this circularity is *'benign'* in epistemological terms, as long as the hypotheses proposed provide simple, clear explanations that are subsequently very well supported by the evidence available (Lipton, 2000)

If retroduction can be described as an explicit, rational, theory-based thought process that mirrors inference to the best explanation, it is important to understand how we might infer that one set of explanations is 'better' than another. Some reflexivity is required. The literature on IBE provides two useful models that describe different factors other than likelihood that help us consider this when using retroduction as a method in scientific enquiry: loveliness and pursuit-worthiness.

5.4.2.1   Loveliness

Lipton argues that the term 'inference to the *best explanation'* itself is wanting as it suggests that we only seek one explanation when there may in be a variety that are simultaneously quite probable, or none that sufficiently satisfy us. Using loveliness for 'sufficiently good', Lipton suggests we use a series of explanatory virtues to decide that one explanation in more 'lovely' than another (Lipton, 2000). His proposed explanatory virtues that make up this loveliness are illustrated in figure 10, though these are clearly not exhaustive.
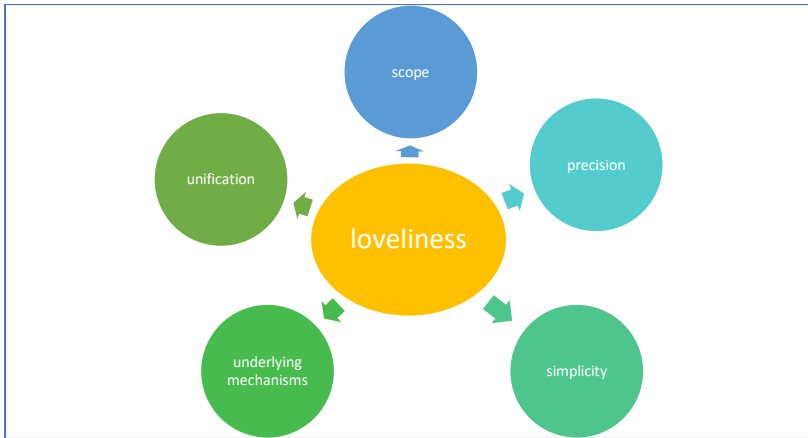
Figure 10 A graphical representation of Lipton's 'explanatory virtues'

5.4.2.2   Pursuit-worthiness

Another attempt to explain how one explanation is chosen above another during the process of retroduction is provided by McKaughan (2008). Instead of loveliness, McKaughan proposes we interpret the *pursuit-worthiness* of explanations during IBE, making instinctive decisions about the relative merits of certain hypotheses as useful or relevant for further action or investigation (Mckaughan, 2008). The pursuit-worthiness virtues proposed by McKaughan that are quite different from the virtues of loveliness from Lipton. All are effectively contextual, relating to the resources available to us in terms of time, energy, knowledge as well as financial resources. These are shown in figure 11.
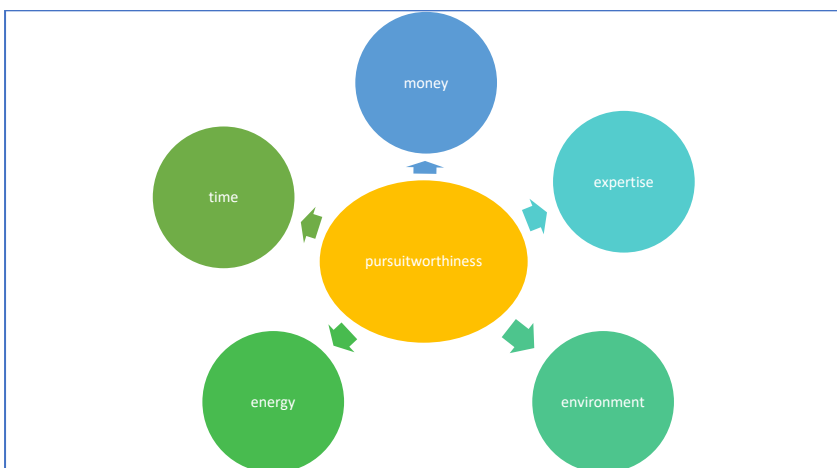
Figure 11 A graphical representation of McKaughan's 'pursuit-worthiness' considerations

In realist evaluation, given that there will rarely be the resources to explore all potential mechanisms in an evaluation, aspects relating to the time and personnel available; what expertise the research team bring to the evaluation; what environments are possible to study; and what data is potentially

available may affect the process of retroduction. It is important to recognise this, as it also affects decisions on the scope of and evaluation prior to data collection (Pawson and Tilley, 2004).

5.4.3   Section summary

If an understanding of theorised causal mechanisms that shape our world is the holy grail of scientific enquiry, it becomes clear how the careful and inclusive theoretical process of retroduction becomes such an important part of critical realist method. Retroduction has been described as a process of 'reasoning backward' or 'inference to the best explanation'. The process should recognise that the values and assumptions that affect our worldview are often automatic or deeply ingrained and therefore unrecognised.

Concepts of loveliness and pursuit-worthiness can be helpful to reflect on why we are choosing certain explanatory accounts for events over others and explain why dialogue with stakeholders is such an important part of any retroductive process. It is preferable to consider the virtues of loveliness and pursuit-worthiness as explicitly as possible with stakeholders to enhance the validity and credibility of any evaluation.

5.5 CHAPTER SUMMARY

Critical realist ontology proposes that two forms of real phenomena exist. These include transient phenomena (in the form of events) and intransitive phenomena, which include the physical world, feelings thought, and behaviours and explanatory causal mechanisms that create events. Explanatory causal mechanisms are arguably the most important phenomena in critical realist ontology.

These phenomena exist in multiple interdependent ontological strata. Mechanisms in lower strata cause events in higher strata. Events in higher strata affect conditions in lower strata. This creates a complex view of the world, which is emergent and spontaneous, and requires different scientific methods to understand it.

Critical realist methods are designed to avoid epistemic fallacies where potential causal mechanisms or unobserved events are ignored. This involves the process or theorising explanations for events in the form of a programme theory that incorporates potential explanatory mechanisms, described as Context-Mechanism-Outcome configurations. The plausibility of these theorised mechanisms can then be tested through empirical work, and the identification of demi-regularities in data.

This theory led approach means that a careful process of retroduction is required, which is elevated to '*an intrinsic methodological phase'* of the research (Bertilsson, 2004)*.* The theoretical process can be likened to 'reasoning backwards' or 'inference to the best explanation' and should be as explicitly transparent as possible through reflexive processes. A better understanding of the plausibility of particular theorised causal mechanisms operating in any field of study then becomes the core purpose of subsequent empirical study.

6 DEVELOPING THE REALIST EVALUATION PROGRAMME

This chapter provides a description of how the realist evaluation programme was developed.

Section 6.1 introduces realist evaluation and the four stages of a realist evaluation cycle.

Section 6.2 and 6.3 consider the two important considerations required before proceeding further: the *purpose* of the evaluation (from a realist evaluation perspective) and the *scope* of the evaluation in respect of professional roles, geography, and practice communities (from a practical perspective).

The chapter ends with a summary statement concerning purpose and scope and the plan for the research programme is presented.

6.1 THE REALIST EVALUATION CYCLE

Methods for realist research have been shown to be heterogeneous with interchangeable terminology (Coryn *et al.*, 2011). In view of this, it was recognised there needed to be more structured guidance into how to carry out realist research to develop more rigorous methods and reporting (Marchal *et al.*, 2012). As a result, the RAMESES project developed guidelines for reporting realist evaluations (Greenhalgh *et al.*, 2015). This guidance provides a broad outline for a realist evaluation, while recognising that, as the environment of each evaluation will be different, methods will need to be adapted.

The principal tenet for a realist evaluation remains that it is theory driven and begins from a theoretical description of what explanatory mechanisms are likely to be operating (Pawson, 2018). It is critical to keep these potential explanatory mechanisms as the prime 'object' of interest, recognising that as they are always wrapped up in CMOCs (Wong *et al.*, 2016).

In Chapter 4 of *Realist Evaluation,* Pawson and Tilley describe three examples of realist evaluations that show how methods were shaped according to the different circumstances of each evaluation. Each embarked on their evaluations from different positions, with different purpose, scope, available data, and programme theory modelling (Pawson and Tilley, 2004). In order to help consider how to approach this evaluation, each is considered with a critique on how these differences affected the methods chosen.

> A. The first example tested the plausibility of CMOCs derived theoretically from the literature in a relatively controlled environment. The intervention involved marking household properties

to reduce household burglaries. In this study, the researchers developed the plan for the evaluation at the same time as they designed the intervention. They were therefore able to weave into their evaluation an approach that minimised the impact of potentially competing mechanisms and different community settings. They did this by limiting the variability of some aspects of the communities studied through choosing areas with similar local geography in remote areas.

B. The second is a realist evaluation of a small number of case studies in which similar intervention programmes had been recently implemented. The intervention involved a focused financial investment into small, deprived communities with the aim of reducing the overall rate of crime within each community. The researchers were not involved in the design of the programme, so approached the evaluation as curious observers. Various 'middle range' theories were used to develop potential mechanisms for how the investment might work in a programme model but only a handful of case studies could be studied. The resulting observations show how the unpredictable and entirely open nature of these different experimental fields led to the unearthing of entirely new CMOCs within the programme implementation that were not previously considered.

C. The third relates a realist evaluation of a long-established intervention programme of prisoner education over 20 years or so which provided a vast data set for potential examination. Due the enormous heterogeneity of many aspects within the prisoner population, the researchers started by developing theories on explanatory mechanisms for how the programme might work for different subgroups of prisoners with similar attributes. A targeted approach to the data available was then undertaken to explore whether the CMOCs described were likely to be operating or not.

Each of these examples follows a similar process. A programme theory was developed and potential CMOCs were identified; a consideration about the tendency for these to be triggered in different contexts took place; empirical data was collected on outcomes in different contexts and the programme theory was refined. Pawson provides an overarching model for realist evaluation cycle which incorporates these four activities – an adapted version of which is shown below in figure 12 (Pawson and Tilley, 2004).
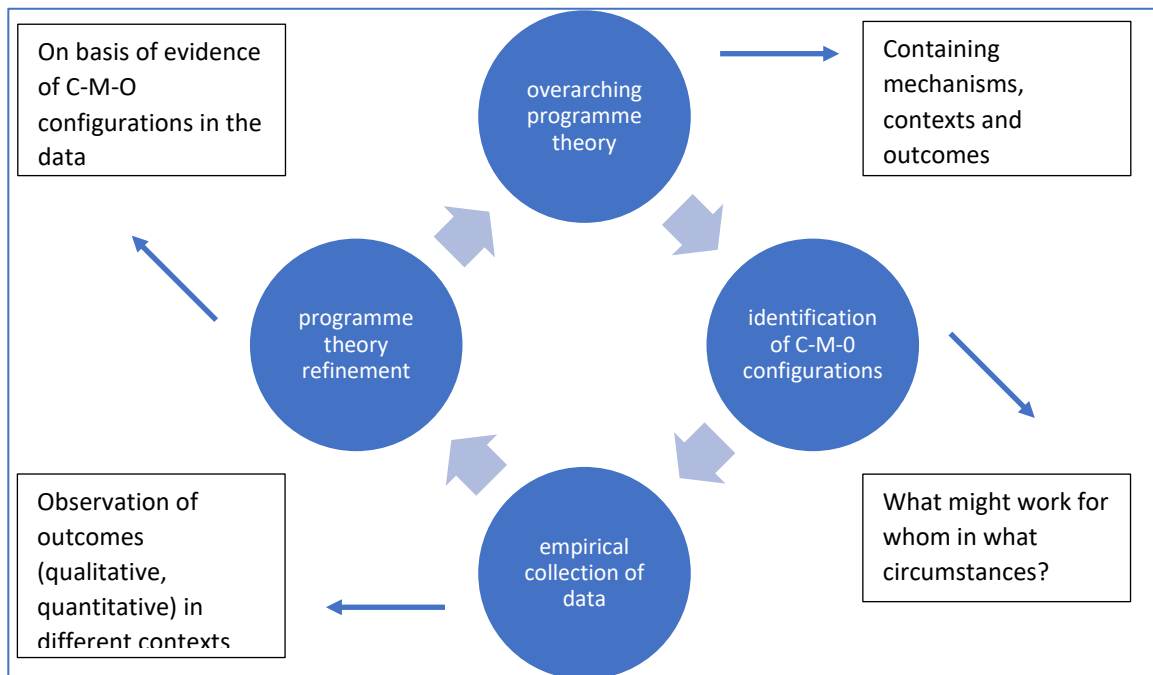
Figure 12 The realist evaluation cycle (adapted from p 85, Realist Evaluation)

6.1.1   Section summary

The three examples described show how the exact methods used were shaped to account for the evaluator's position with respect to the intervention programme, the data available and the wider contextual themes of the intervention programme theory in order to keep CMOCs at the heart of each evaluation. This study most closely resembles example B; the intervention has been designed and is being implemented. It is studied as a curious observer, using a number of case studies.

6.2   THE PURPOSE OF THE EVALUATION

Pawson et al (2004) describes how, because realist enquiry can often consider multiple potential explanatory mechanisms, a first step is to consider the general purpose of the research in terms of a programme theory for an intervention (Pawson *et al.*, 2004). They suggest there are four commonly purposes adopted. Each example is considered more generally before considering how each purpose aligns best with this evaluation.

1.   An evaluation into programme theory integrity

This is appropriate if one wishes to consider whether the programme theory has integrity with respect to the how CMOCs may operate during its implementation. In this approach, an intervention is often considered as a series of steps. This approach can also be used to identify problems with particular steps, and how these might affect the overall success of an intervention. If the purpose

was to establish one whether the proposal to introduce ACPs to support GP teams is likely to work as expected this might be appropriate.

2. Adjudicating between rival programme theories

The purpose of this approach is to evaluate how expectations on how the programme theory might work match observations during its implementation. It is also useful to recognise how different CMOCs might operate in relation to each other. It usually involves discussions with relevant stakeholders about how an intervention is expected to work, followed by data collection to better understand how CMOCs operate during implementation. In terms of the proposal to introduce ACPs to support General Practice teams, the purpose of this approach would be to get a better understanding of what mechanisms could operate in different practices when implemented.

3. Evaluating the same theory in comparative settings

This approach is closest to the 'what works for whom, when and how' aspect of realist research (Pawson *et al.*, 2004). It usually requires a deeper understanding and explanation of the heterogeneity of different settings in which the intervention is implemented. This approach would help us to understand how the introduction of ACPs to General Practice teams might work for different communities with different practice teams. A deeper understanding of the nature of communities, the different needs that arise from these and the functioning dynamics of different teams would be required.

4. Evaluating official expectations against actual practice

This approach compares the official expectations or desired outcomes against actual outcomes during implementation. It has some similarity to purpose two. With respect to the introduction of ACPs into General Practice teams, this approach would consider the dialectic between mechanisms that might support or frustrate desired outcomes. If the expectation is that General Practice teams are stabilised and supported by ACPs to provide high quality primary care, this approach would focus on areas within the programme theory might deviate from this outcome.

6.2.1   Section summary

In practical terms it is inappropriate to constrain realist inquiry (whether a review or evaluation) tightly into any of the above four approaches at the outset and the final purpose becomes clearer during the programme theory modelling process. Despite this reservation, at this stage, it is considered that the purpose of this research is a combination of approach two and four above. It seeks to understand better the range of CMOCs that might be operating within the intervention

before deciding where to focus the evaluation, in terms of the data collection, to understand how one particular part works in practice.

The complexity and breadth of the intervention (and the circumstances) do not lend themselves easily to the first approach, which requires greater consultation with those who *designed* the intervention. The vast heterogeneity of practices and population groups would need considerable expertise in team dynamics and public health that are not available.

6.3 THE SCOPE OF THE EVALUATION

When realist evaluation is used to study complex interventions, the remit of the evaluation can become so broad that it becomes difficult to make specific recommendations with confidence. Defining the scope of the evaluation at the beginning is therefore important, though it can also become an iterative process, with changes made in response to material that is identified as available later on (Pawson and Tilley, 2004). This section describes the rationale for decisions regarding the scope of this research on geography ACP roles and particular communities.

6.3.1 Consideration of which professional backgrounds to include.

This thesis examines the integration of advanced clinical practitioner roles into general practice teams, but which types of advanced clinical practice are to be considered. As described in chapter 1, the ACPs proposed are a heterogeneous group with professional backgrounds including nurses, pharmacists, physiotherapists, paramedics. Physician associates are, for the purpose of this evaluation, also included, as they are a key part of the intervention described.

Some of these roles are already more established within community health services than others (community pharmacists, paramedics), some have more established roles within secondary care services (pharmacists, physiotherapists) whereas others are relatively unfamiliar to the health system in the UK (paramedics, physician associates).

In relation to skill-mix in general practice teams, all are relatively novel except advanced nurse practitioners who have been established over the past two or three decades. Establishing a skill-mix within primary care services depends on the scope and breadth each professional role brings with it (Sibbald, Shen and Mcbride, 2004). A systematic review by Sibbald et al (2004) on skill mix in primary care suggested there are four established methods through which a change in skill mix is developed.

- Enhancement – increasing the depth of a job by extending the role or skills of a particular group of workers,

- Substitution – expanding the breadth of a job, in particular by working across professional divides or exchanging one type of worker for another,

- Delegation – moving a task up or down a traditional uni-disciplinary ladder,

- Innovation – creating new jobs by introducing a new type of role.

  (Sibbald et al., 2004)

Nurse-led chronic disease reviews were considered an *enhancement* of the nursing role. A pharmacist undertaking medication reviews rather than a doctor considered *substitution*. The development of innovative roles such as the Advanced Nurse Practitioner is both *enhancement* of an established role and, where the tasks undertaken start to overlap with other professionals, but also *substitution*. Descriptions of *innovation* were limited to the development of the novel role of the Physician Associate, which, as some tasks overlap with the traditional role of a General Practitioner is therefore also *substitution*. This role is now described in strategy documents describing the development of multidisciplinary primary care teams in the UK, along with professional roles such as and physiotherapists. (Health Education England, 2015a; NHS England, 2015, 2016a, 2019).

A summary of the each of these five roles outlining legal status, regulation, scope of practice, and the primary method of skill-mix suggested as described by Sibbald et al (ref) are summarised below and in table six. All but the Physician Associates are currently legally recognised as autonomous professional roles with a defined scope of practice in the UK. However, in August 2019 it was announced that primary legislation will be taken forward to recognise Physician Associates as a new healthcare role in statute with regulation through the General Medical council (NHS Employers, no date; Department of Health and Social Care, 2019).

Nurses
- Regulation – statutory through Nursing and Midwifery Council
- Traditional Scope of practice – Well-recognised roles in health care, though ill-defined in regulations. Centred around 'caring', and traditionally attending to the promotion of health, prevention of illness, care of the sick, and rehabilitation (Daly and Carnwell, 2003).
- Advanced clinical roles in GP teams – ill-defined, heterogeneous but usually first-contact history taking and examination, diagnostic assessment, and recommendations regarding management including investigations and treatment to patients with undiagnosed symptoms (Daly and Carnwell, 2003; Bryant-Lukosius *et al.*, 2016; Laurant *et al.*, 2018)
- A substitutive role – first-contact care across breadth of clinical presentations

Physician Associates

- Regulation – voluntary through Faculty of Physician Associates of the UK

- Traditional scope of practice – Unfamiliar role in the UK

- Generalist medical professionals who work alongside doctors to provide medical care as an integral part of the multidisciplinary team (Faculty of Physician Associates, 2017)

- Advanced clinical roles in GP teams – usually same-day/urgent requests for appointments for patients with both long-term conditions and undiagnosed new presentations (Drennan *et al.*, 2014) .

- A substitutive role – first contact across a breadth of clinical presentations

Paramedics

- Regulation – statutory through Health Care Professionals Council.

- Traditional Scope of practice – Well-recognised emergency care role. Holistically assess, and if required treat and manage service users presenting with physical or mental health complaints; either as the result of injury, illness, or an exacerbation of a chronic illness, includes dealing with high pressure (College of Paramedics, 2021).

- Advanced clinical roles in GP teams – primarily seeing minor illnesses / injuries or care planning in chronic diseases (Ball, 2005; NHS England and British Medical Association, 2019)A substitutive role – first contact across breadth of clinical presentations.

Physiotherapists

- Regulation – statutory through Health Care Professionals Council.

- Traditional Scope of practice – Well recognised in secondary care. Broadly defined under four pillars from 1920 Royal Charter: the fourth pillar, kindred treatment, facilitates the inclusion of related areas of practice into scope. This enables members and the profession to move into new areas of practice and respond to changing population needs, healthcare environments and the evolving evidence base, within the parameters of patient safety, patient centeredness, and effectiveness (Chartered Society of Physiotherapy, 2023).

- Advanced clinical roles in GP teams - first point of contact with patients in assessing, diagnosing, and managing patients with MSK conditions. Patients access the physiotherapy service against pre-identified criteria (Bienkowska-Gibbs *et al.*, 2015). Generic roles with OT, nurses in pathways to work scheme (The King's Fund, 2016)

- A substitutive role – mostly first-contact care for MSK problems

Pharmacists

- Regulation – statutory, General Pharmaceutical Council.

- Traditional Scope of Practice – Well recognised Community Role. Supplying medicines safely to patients, providing advice about medicines to patients and other health professionals, advising about medicines for sale and signposting to services. sometimes provide smoking cessation, blood pressure and cholesterol management (NHS England, 2023a).
- Advanced clinical roles in GP teams - primarily supporting medication management, including reviews and reconciliation with patients, the support and training of other clinicians in medication matters, clinical governance work. Sometimes enhanced traditional minor-illness roles (Tan *et al.*, 2014; Primary Care Pharmacists' Association, 2015; Freeman *et al.*, 2016; Royal Pharmaceutical Society, 2016).
- A substitutive role – mostly for medication management.

Table 4 Summary of the professional roles considered for scope of evaluation.
PAs – physician associates; MSK – Musculoskeletal

	Nurses	Physician Associates	Paramedics	Physio-Therapists	Pharmacists
Professional status	Statutory	Voluntary registration	Statutory	Statutory	Statutory
Regulatory body	Nursing and midwifery council	Faculty of PAs, Royal College of Physicians	Health Care Professionals Council	Health Care Professionals Council	General Pharmaceutical Council
Traditional Scope of Practice	Caring and prevention for/of ill-health	Generalist clinical practice	Emergency care, minor illness, trauma	Holistic rehabilitation for MSK conditions	Medicines supply, and safe use.
Advanced Practice Role includes	Significant first-contact role for breadth of clinical presentations	Significant first-contact role for breadth of clinical presentations	Significant first-contact role for breadth of clinical presentations	Significant first-contact role primarily for MSK problems	Limited First-contact role primarily for medicines management
Type of skill-mix	Substitution	Substitution	Substitution	Substitution	Substitution
Inclusion / Exclusion from study	Included	Included	Included	Excluded	Excluded

6.3.1.1   Section summary.

In terms of Sibbald's framework, all these professional roles have tasks in UK general practice teams that are a substitute for those traditionally performed by a General Practitioner (Sibbald, Shen and Mcbride, 2004). Practitioners who have achieved non-medical prescribing rights will be practicing more autonomously; others will be requiring additional input for prescriptions from prescribing professionals, almost exclusively GPs.

All the roles are also taking on some first-contact clinical work though the descriptions suggest this is less so for pharmacists. In general, physiotherapists and pharmacists are also less likely to see the full breadth of problems in first contact primary care than the other professional groups, focusing on their area of expertise. This arguably removes some of the issues around the challenge of dealing with a breadth of presentations and the development of recognised competencies for generalist clinical practice.

The scope of this evaluation (with respect to professional roles) will therefore limit itself to Advanced Nurse Practitioners, Physician Associates and Paramedics, as these are more often taking on tasks that substitute the generalist first-contact roles that General Practitioners traditionally carry out. Physiotherapists and Pharmacists, who currently have more clearly defined role boundaries reflecting their scope of expertise, will be excluded.

6.3.2   Consideration of geographical scope

6.3.2.1   A global workforce problem
Substitutive clinical roles have been used internationally to address a global problem in the gap between health care needs and a lack of health care workforce. Crisp and Chen describe five interacting forces at work internationally that are creating this gap between demand and supply. These include an increased urbanisation of communities, increased access to information, revolutions in bioscience and technology, increased consumerism in healthcare and an increasing demand that access to health care should be more equitable (Crisp and Chen, 2014). They also suggest these forces are also collectively driving the development of new roles that stretch the boundaries of professional responsibilities and authority. Examples provided include nurses in Mozambique who carry out caesarean sections with as good outcomes as doctors and new forms of community workers in Pakistan and Bangladesh who led health promotion activities.

The global demand-supply gap does not spare more 'developed' countries and is now a problem for governments across the world. An international survey of innovations to address inequities in access to healthcare found the majority were government funded out-of-hospital programmes focused on increasing healthcare services to rural or urban deprived communities (Richard *et al.*, 2016). The authors suggest that countries with very different political and economic circumstances are grappling with similar issues when addressing inequities in access to healthcare.

6.3.2.2   Use of ACPS to address access to care in the UK.
Most of the evidence for using advanced clinical practice to address access to primary care comes from North America and Australasia (Buchan and Dal Poz, 2002; Sibbald, Shen and Mcbride, 2004; Laurant *et al.*, 2010). The focus in both continents has been primarily to improve access to care in

rural and remote communities more than for urban communities (Ekwo *et al.*, 1979; Harris and Leininger, 1993; Baldwin *et al.*, 1998; Vlastos, Mpatistakis and Gkouskou, 2005; O'Connor and Hooker, 2007; Goodyear-Smith and Janes, 2008; Reeve *et al.*, 2008; Zink *et al.*, 2010; Henry, Hooker and Yates, 2011; Odell *et al.*, 2013; Prasad *et al.*, 2014). More recently there has been a growing body of literature on the introduction of the advanced clinical practice roles in the UK, especially nurse practitioners and physician associates, though none of this focuses especially on provision to urban or deprived communities (Venning *et al.*, 2000; Horrocks, Anderson and Salisbury, 2002; Rosen and Mountford, 2002; Drennan *et al.*, 2011, 2014).

6.3.2.3 Section summary
Though the problem of inequitable access to care is global, the contexts within which ACPs have been used within different countries are different. However, it is still likely that some literature might help inform theorising on what CMOCs might be operating in the UK to inform any evaluation process.

A pragmatic approach is taken to testing the programme theory that keeps the evaluation manageable for a doctoral thesis carried out be a lone part-time researcher. The geographical scope will be targeted to areas of the UK where it is most feasible for the author to access advanced clinical practitioners working in general practice – primarily the Yorkshire and Humber region in the north of England.

6.3.3 Consideration of which deprived communities to purposefully target.
Analysis of how patterns of overall deprivation varied across different regions of England using the 2007 Index of Multiple Deprivation found the worst extremes of relative deprivation were in inner cities and the most remote & rural areas, with suburban areas and semi-rural 'middle' England almost escaping any deprivation at all (Calder *et al.*, 2009). A closer analysis of which elements of the IMD help decided the scope of the evaluation from a practice perspective.

6.3.3.1 Index of Multiple Deprivation
In the UK, the Index of Multiple Deprivation (IMD) is the recognised method for measuring relative deprivation of communities to each other. Data is available on IMD scores for population groups of around 1500 called Lower Layer Super Output Areas across the whole of the UK (*National General Practice Profiles - Data - OHID*, 2019). These IMD scores are published every three to five years from data available in each country of the UK - English IMD scores are available from 2000, 2004, 2007, 2010, 2015.

The IMD is derived from 38 separate indicators collated into seven domains. These indicators are sometimes modified after public consultation between each publication to account for changes in

environment, demographics, health behaviours etc. but the seven overall domains have not changed since 2010. These are listed below with their relative contribution to the overall IMD score. (Ministry of Housing Communities and Local Government. UK Government., 2015).

- Income Deprivation   (22.5%)
- Employment Deprivation   (22.5%)
- Education, Skills, and Training Deprivation   (13.5%)
- Health Deprivation and Disability   (13.5%)
- Crime   (9.3%)
- Barriers to Housing and Services   (9.3%)
- Living Environment Deprivation   (9.3%)

The two domains most closely related to this evaluation are the Barriers to Housing and Service domain (as this domain includes one indicators of the proximity to GP services) and the Health Deprivation and Disability domain (as a proxy of relative need for health care services in different communities). A closer analysis of these two domains is therefore useful to help shape the scope of this evaluation.

6.3.3.2   Barriers to Housing and Services domain.
The Barriers to Housing and Services Domain is itself made up of seven indicators separated into two different groups. 'Geographical' barriers include road distance to the nearest post office, primary school, general store and GP practice and 'wider' barriers include Homelessness, Household Overcrowding, and the Affordability of Housing.

When considering 2007 IMD data on the Barriers to Housing and Services domain alone, Calder et al (2009) found that relative deprivation was greatest in the most remote and rural areas. Only inner-city London bucked this trend with the authors suggesting this was an illustration of the low quality and availability of affordable housing in these areas of London (Calder *et al.*, 2009). When considering geographical proximity to a GP practice alone in relation to deprivation, Todd et al. found a positive care law for urban areas – with 94.2% of the population being within a 20-minute walk of a GP practice in urban deprived areas, compared with 81.2% in the most affluent. However, the authors fully accept that geographical proximity alone cannot be used as an accurate measure of access to GP services (Todd *et al.*, 2015).

Access to healthcare is more complex than simply the geographical proximity of local services, with the approachability, acceptability, affordability, and appropriateness of those services recognised as important (Richard *et al.*, 2016). Others suggest that beyond the ability to reach a health care centre, the ability to perceive one's healthcare needs, seek healthcare for them, engage with healthcare and in some instances pay for health care are all important factors in determining access (Levesque,

Harris and Russell, 2013). Campbell and Salisbury (2015) suggest that socioeconomic factors affect expectations of healthcare services which in turn effect the demand for access to primary health care services (J. L. Campbell & Salisbury, 2015).

In respect to these concepts, this evaluation relates to supporting the availability of healthcare services through the introduction of ACPs into general practice teams, including, to some degree, approachability, acceptability, and appropriateness. Other aspects relating to an individual's ability to perceive their needs or seek healthcare are not considered. As general practice services are still free at the point of delivery in the UK, the ability to pay is not considered.

6.3.3.3   Health and Disabilities domain.

The four indicators making up the Health and Disabilities domain are the following: Years of Potential Life Lost, Comparative Illness and Disability ratio, Acute Morbidity and Mood and anxiety disorders. (Ministry of Housing Communities and Local Government. UK Government., 2015). This therefore seems to be a better proxy measure for healthcare need. Analysis of the 2007 Health and Disability Domain suggests that the geographical pattern of this domain most closely mirrors that of overall IMD scores. Apart from in extremely rural areas, countryside communities experienced relatively good scores on the health and disabilities domain. Sub-analysis of the relationship between the 2007 area classifications and IMD domain scores suggest the communities most deprived of good health were disadvantaged urban communities followed by multicultural city communities (Calder *et al.*, 2009).

Other significant indicators of health outcomes are also significantly worse for urban communities with higher IMD scores, including relatively poorer scores in general practice Quality and Outcome framework indicators, higher emergency attendances and more admissions for ambulatory long-term conditions (Wright *et al.*, 2006; Payne *et al.*, 2013; Asaria, Doran and Cookson, 2016; Cookson *et al.*, 2016; Tøttenborg *et al.*, 2016).

As already described in chapter 1, an inverse care law exists where the relative funding for primary healthcare does not match the higher relative need for health care in these areas (Dixon-Woods *et al.*, 2006; Mercer and Watt, 2007; O'Brien *et al.*, 2011; Pedersen *et al.*, 2014; McLean *et al.*, 2015; Levene *et al.*, 2016; Mercer *et al.*, 2016; Walton *et al.*, 2018).

6.3.4   Section summary

The England IMD scores suggest that the most deprived communities are inner city urban communities and extremely rural and remote communities. The Health and Disabilities domain of the IMD most closely mirrors the overall IMD score, and inner-city urban areas are relatively most deprived in this domain. Analysis of previous IMD and office for national statistics classification areas

suggest that those with worst health (and therefore greater healthcare need) are also in disadvantaged urban areas. NHS plans propose that advanced clinical practitioners will now be increasingly used to support all primary care services.

This evaluation will therefore focus on the integration of ACPs to general practice teams serving urban communities, with purposive sampling to include practices serving the most deprived populations.

6.4   CHAPTER SUMMARY AND RESEARCH PLAN

When undertaking realist research, the development of programme theory can often take longer than all the other stages. This is considered appropriate as it is this stage, the creation of a plausible programme theory relating to the intervention under consideration, that provides a firm foundation for the evaluation (Pawson *et al.*, 2004). The shape of this initial theorising therefore needs to draw upon a number of methods to provide sufficient theoretical depth.

Immersion in the field of work, either through background reading or experience and active engagement can provide a deeper understanding of the historical and strategic background to a particular intervention to inform retroduction during the research (Pawson, 2002; Pawson *et al.*, 2005). It can also provide insight into potential mechanisms that might lead to particular outcomes, whether intended or not. An initial rough programme theory is then refined through a process which should include:

a)   discussion with stakeholders, who are potentially impacted by the intervention or have had experience of similar interventions as this maintains the relevance of the research to real world issues,

b)   some sort of exploration of the published literature in the field, including a consideration of relevant MRTs and

c)   a further reflection on the findings of a) and b)

This iterative approach to establishing programme theory is recognised as an important step in realist research (Marchal et al., 2019) . It combines retroduction from experience and expertise, the opinions of external stakeholders in the field of study and relevant available literature to provide greater clarity and validity to most plausible CMOCs operating within the original programme theory structure as well as providing some idea of which might be explored.

These three processes are shown at the top of the evaluation plan. After the programme theory is described, the observation and analysis of empirical data takes place before a second theoretical process that refines the programme theory model and the CMOCs within it. Although it has been suggested that in some instances it can be helpful to search again through the literature for particular identified CMOCs towards the end of a realist evaluation (Booth, Wright and Briscoe, 2019), this is not undertaken here. Instead, this research utilises a prolonged, iterative, and considered approach to programme theory building, which includes a 'sense-checking' realist review at an earlier stage. The research plan is illustrated in figure 13.

Part three describes the first stage of the research, building the programme theory using the three processes described above.
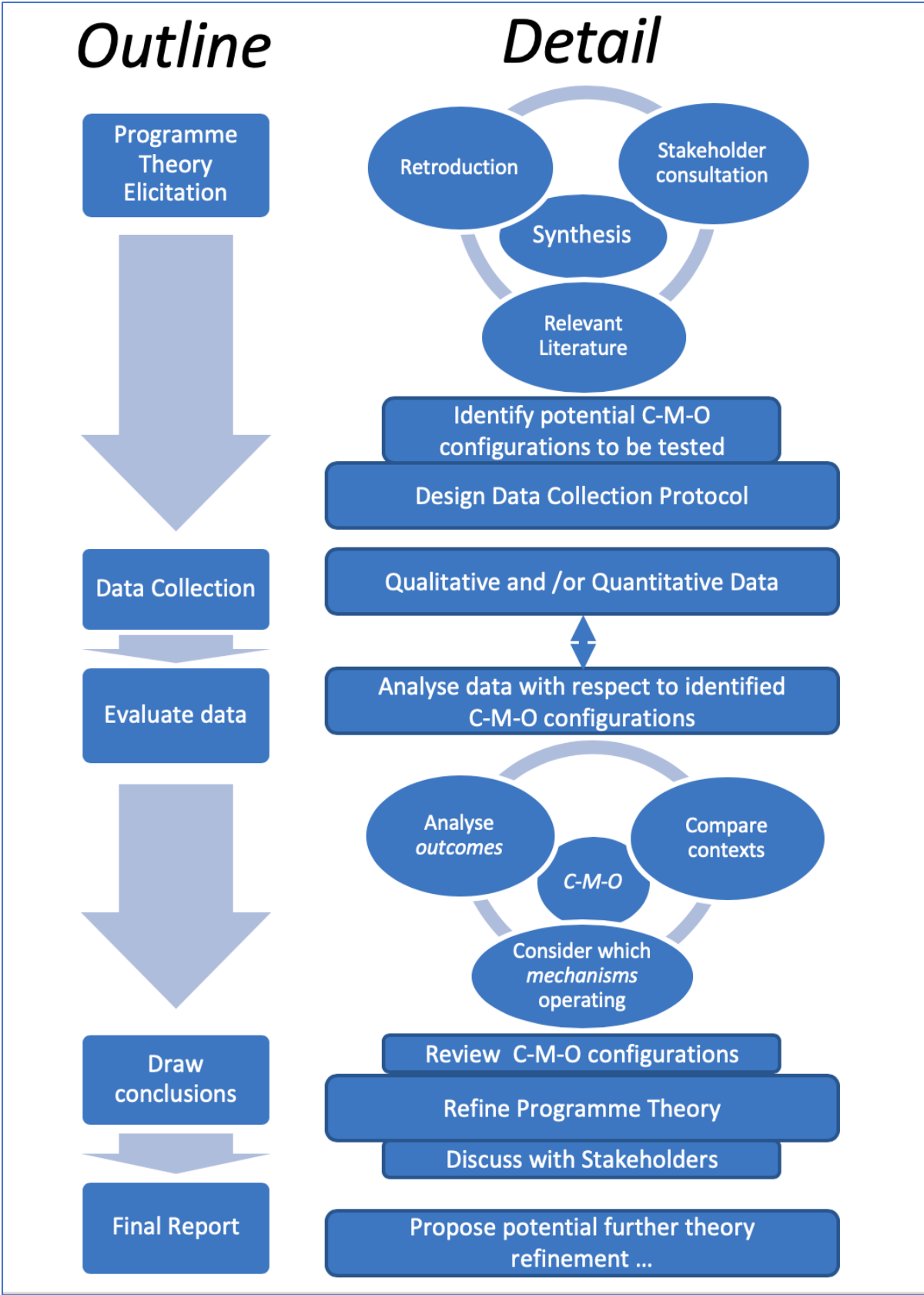
Figure 13 A diagrammatic representation of the research programme for the evaluation

PART THREE: BUILDING INITIAL PROGRAMME THEORY

Part three describes the process of building an initial programme theory (stage one of the realist evaluation research). This involved retroduction, stakeholder consultation and a literature review. As previously outlined in part two, the term 'programme theory' is used here to describe *both* the method *and* the resulting model whereas all the potential explanatory theories within the programme theory are presented as C-M-0 configurations. It comprises three chapters.

Chapter 7 describes a period of extensive retroduction during the research . This includes a description of the immersion and experience the author brings to the topic and a narrative review of available grey literature and policy documents on the background and developing policy of introducing of new non-medical clinical roles. It concludes with a summary of the theorising that occurred during this period and describes the draft programme theory developed.

Chapter 8 describes how this initial programme theory was presented to stakeholders through a series of meetings and how this re-shaped the programme theory and helped develop an understanding of the four themes most important to focus on in the evaluation. This programme theory was then enhanced through stakeholder meetings to theorise potential context-mechanism-outcome configurations that might be important within each of these four themes.

Chapter 9 describes a rapid realist review of the literature to sense check the theory generated by the above processes against that identified in some of the literature. The potential theories identified are presented across the four themes identified. Much of it supports the likelihood of the CMOCs already identified operating other parts challenge them. Some novel theories are also identified that are adapted to a context-mechanism-outcome format and added to the group.

Part three concludes with an initial programme theory and a set of potential context-mechanism-outcomes within it.

7 RETRODUCTION

This chapter presents a significant part of the retroductive process that took place during the building the programme theory for this research. It describes the immersion the author has had in professional and leadership roles that informed the original theorising about the policy narrative, potential assumptions within the policy narrative and experience and information used in the theorising process that drafted the first iterations of programme theory for this research.

It is also, where the main reflexive element of this work lies. A summary reflexive statement is presented after the theorising, to establish how my *personal* position affects the theorising and maximise transparency. This section is therefore written in the first person, to capture the personal nature of the experience that informs the retroduction.

Section 7.1 provides description of clinical, professional and leadership roles the author held over the past ten years that allowed immersion in the policy narrative as the complex intervention to integrate new roles into general practice teams was developed.

Section 7.2 presents a 'desk-drawer' review of the policy papers collected through these roles. A narrative of the strategy and policy statements, position papers and opinion as this complex intervention was conceived is described. This appraisal of policy underpinning the intervention informs the retroduction.

Section 7.3 describes the theories generated from the retroduction at this stage of the research that generated the first iterations of the programme theory. This first draft programme theory (IPT) for the research is presented, with an explanation.

7.1 IMMERSION AND EXPERTISE.

A significant part of the ongoing retroduction during the research was informed through my active reflection on previous and current immersion in this field of work. I had previously had a number of relevant roles that facilitated discussions with a wide variety of expert workforce leads in the region and nationally. This provided some insight into the history and underpinning theories regarding the policy of introducing Advanced Clinical Practitioners into the primary care workforce and the assumptions and unanswered questions within the policy. The following experience helped shape the initial programme theory model for the programme theory.

7.1.1 Clinical role.

General Practice partner serving an urban-deprived community.

Over the previous 10 years, my own practice underwent a transformation in skill-mix as it expanded its patient numbers. This involved employing and providing the supervision for nurse practitioners, paramedics, community matrons and pharmacists in first contact ACP roles. Since the advent of the additional roles re-imbursement scheme (ARRS), our primary care network has also employed physician associates, paramedics, and pharmacists, with our practice identified as the centre for their supervision. Some of these practitioners have quickly left their roles, citing the stress of managing the uncertainty and demand of undifferentiated care, some have thrived in the role and some still have ongoing discussions about the adaptation of their roles, years into the posts. As a GMC registered postgraduate training practice, with over 40 years' experience of supervising postgraduate GP specialty trainees between us, the GPs providing the supervision for the new practitioners still find the adaptation required for their supervisory roles for different practitioners challenging. Our patients have learned to adapt to the variety of roles available to them, but it appears that many still do not really understand the exact role or function within the team of the new practitioners. Our structures retain a hierarchy between the GPs and the new practitioners and our relationship and responsibilities with those practitioners employed by our primary care networks is complicated. We strive to use our skill-mix to deliver the best possible generalist care and are recognised as an outstanding general practice by the Care Quality Commission.

7.1.2 Academic roles.

Lead for Masters in Physician Associate studies at University of Sheffield

Founder member of Deep End General Practice in Yorkshire and the Humber

Whilst leading the curriculum design for the new Masters in Physician Associate studies at the University of Sheffield, I carried out research into the barriers and facilitators to integrating this Physician Associates into general practice teams using grounded theory methods. This involved interviews with regional primary care policy leads, leaders in the physician associate profession, and groups of GPs. The results highlighted important contextual themes and widely held theories from relevant stakeholders related to the issues faced during the integration of any new 'first-contact' role into primary care teams, ranging from regulatory factors, inter-professional boundaries, patient understanding and supervision. Our course was subsequently designed specifically to prepare our physician associate graduates for some of the challenges recognised if they worked in primary care, as opposed to working in hospitals. (Jackson, Marshall and Schofield, 2017; Gray, Darling-Pomranz and Jackson, 2021)

This period (from 2016 onwards) also coincided with the foundation of a Deep End General Practice network across the Yorkshire and the Humber region. This network was established to bring together front-line practitioners, those in leadership roles and academics in a shared purpose of tackling health inequities in primary care services through action on workforce, advocacy, education and training and research (Walton *et al.*, 2017). As a founder member of the group, my activities were centred on education, training and supporting the workforce.

7.1.3   Leadership roles.

Independent chair of South Yorkshire Primary Care Workforce and Training Hub

Strategic workforce advisor to NHS England and South Yorkshire Integrated Care Board
In 2013, I was appointed as the independent chair of the South Yorkshire Primary Care Training Hub reference group, and between 2014 and 2021 chaired the oversight board for the developing Primary Care Workforce and Training Hub until its future was secured and structures formalised within Health Education England and the new NHS structures. Primary Care Workforce and Training Hubs are the bodies tasked to support the development and transformation of the Primary Care Workforce within the emerging NHS organisations including new and established professional roles for General Practice workforce (Health Education England, 2015b). Since 2021, I have been a strategic advisor on primary care workforce to the South Yorkshire Integrated Care Board. These roles have involved regular meetings with commissioners and frontline providers of NHS services and Education and Training to facilitate effective communication and translation of the issues at each level of the systems (Jackson, Irvine and Walton, 2017).

National Elected member of RCGP council

General Practice Forward View ambassador
I was elected to the Royal College of General Practitioners national council between 2015 and 2018 as the policies to transform primary care teams gathered pace, after the publication of the NHS General Practice Forward View policy. I also held a college ambassadorial role within the emerging regional sustainability and transformation partnerships to influence the implementation of investment into primary care constructively. During this period I led the RCGP council response to the development of the wider practice team, which studied the issues with the developments at the time and responded with cautionary support (Royal College of General Practitioners, 2018).

7.2   'DESK-DRAWER' REVIEW OF GREY LITERATURE

In order to inform this retroduction more comprehensively, grey literature, in the form of organisational policy papers from national bodies, opinion papers from health-related policy think-tanks, editorials, reports and papers from individual case studies from 2000 to 2018 relevant to the NHS were re-appraised. This was carried out using a 'desk-drawer search strategy' where the author's own collection of papers, developed through the roles described above were collated (Kastner *et al.*, 2011; Coles, Cheyne and Daniel, 2015). To capture any important missing papers, the desk-drawer search was supplemented by an internet search for additional relevant documents available on-line from The Kings Fund, The Health Foundation, and the Nuffield Trust: the RCGP, BMA and National Association for Primary Care; and Health Education England & National Health Service (through gov.uk). This body of work was then used as a resource during the building of the initial theory. As the purpose of this stage was to consider policy and potential theories and assumptions to inform the retroduction, no formal search of peer reviewed papers or realist review was undertaken at this stage. A rapid realist review of published literature was subsequently used to 'sense-check' the developed programme theory with the literature and this is described in chapter 9.

7.2.1   Results

7.2.1.1 *Papers reviewed.*

There were 112 reports identified. The 'desk-drawer' search identified 106 reports that were already held in the author's electronic database or files, collected during the immersion in the field described in section 7.1; six additional papers were found through searching relevant health-related policy think-tanks (see above). The 112 reports were then read, and key ideas and theories extracted. A description of the main focus of each document, in relation to professional role, population served, service outcome and provider type was catalogued using a google form with brief free text notes made on the key theories (see table 7).

7.2.1.2   *Focus of reports*

Ninety-seven reports (89%) discussed the introduction of frontline clinicians that were not health General Practitioners into primary care teams in one form or other. Only three (3%) had any specific focus on particular underserved population groups such as urban deprived or rural & remote, one of these covered both areas. Though many covered more than one area, the focus on different aspects of the process of integration was illuminating. Discussions relating to improving access (27) and team dynamics (26) were most frequent followed by processes of care (20) and the background of the practitioner (17). A much smaller number of papers focused on population perspectives (9), or components of care recognised as markers of high-quality general practice services, such as continuity (9) or comprehensive clinical expertise (7). The area considered least often was clinical supervision (5). This distribution is illustrated in figure 14.

Table 5 Criteria used for classification of 'desk-drawer' papers n=112

Criterion	Categories	No	Definition
Professional role of interest **(some reports focus on more than one role)**	Physician Associate	14	Completed training and practicing as a Physician Associate
	Advanced Nurse Practitioner	11	Original professional background is Nursing
	Paramedic	3	Original professional background is Paramedic
	Other Allied Health Professionals	3	Varied background including optometrists, chiropodists, other therapists
	Pharmacist	11	Original / Current professional background is Pharmacist
	Physiotherapist	0	Original / Current professional background is Physiotherapist
	Mixed (3+ professions)	50	Combinations of at least three professional backgrounds
	Other roles (midwives, assistants, consultants)	4	Medical Assistants, Midwives, Doctors (not GPs)
	No specified profession	29	No focus on any particular profession or professional background
	General practitioner	15	Focus on General Practitioner
Focus is on integration into GP generalist team **(some reports focus on more than one area)**	Supervision	5	Competencies, Arrangements for supervision, Trust
	Organisation of Service	20	Appointments System, Team-structure, Regulations
	Population perspective	9	Particular needs, Acceptance, Healthcare Utilisation, Barriers to Access (e.g. Lang)
	Practitioner perspective	17	Training, Experience, Role Definition, Personality
	Primary Care Team	26	Understanding, Acceptance, Trust, Utilisation
	Continuity	9	Continuity of care, whether inter-personal, within team or organisation
	Comprehensiveness	7	Comprehensive breadth of services, availability of generalist expertise
	Access	27	Ease of access to see a health care professional through any method
	General (>3 areas)	42	More than three of the above leading to broad focus in paper
Population group of interest **(one paper focused on two population groups therefore n=113 for this section)**	General	109	No focus on any areas of deprivation / inequality of access
	Rural and Remote	1	Focus on rural and remote provision (Family Practice / Primary Care Centre)
	Urban Deprived	3	Focus on urban deprived communities / urban under-served
	Inclusion Health	0	Focus on specific groups (e.g. homeless, sex-workers, asylum seekers etc.)
Healthcare context of interest **(some reports focus on more than one context)**	General Practice	78	Setting is traditional UK General Practice
	Primary Care / Community	21	Setting is Primary Care Network /'Medical Home' / Wider Primary Care Team
	Residential / Care Home	3	Setting is care in residential or care home
	Other / no focus	25	No particular focus on any of the above settings
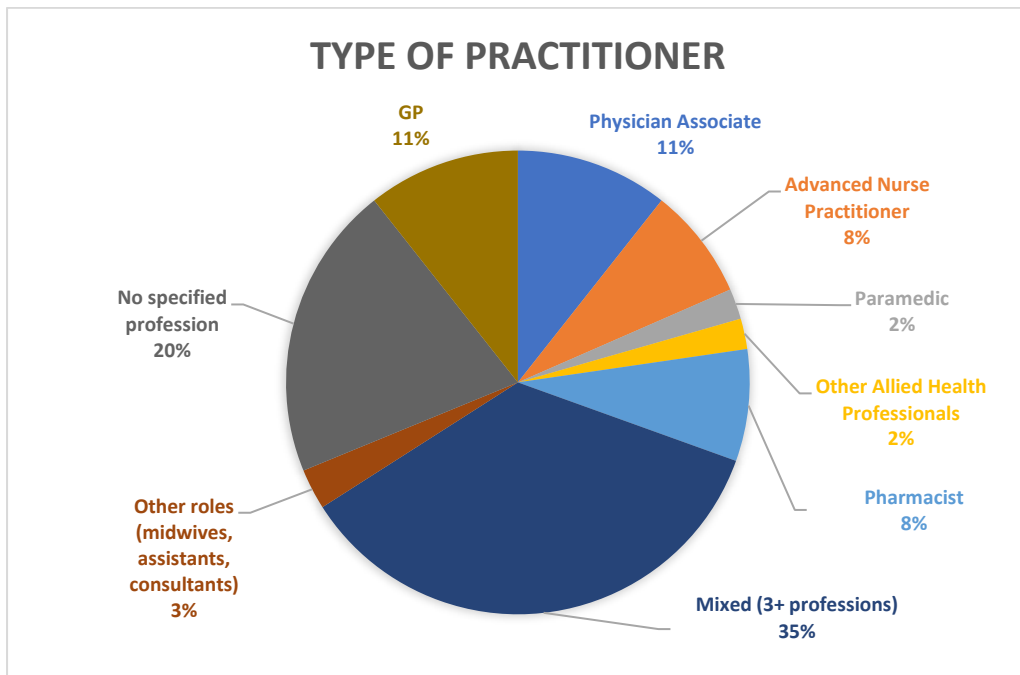
Figure 14 Types of practitioners discussed in the grey literature reviewed.
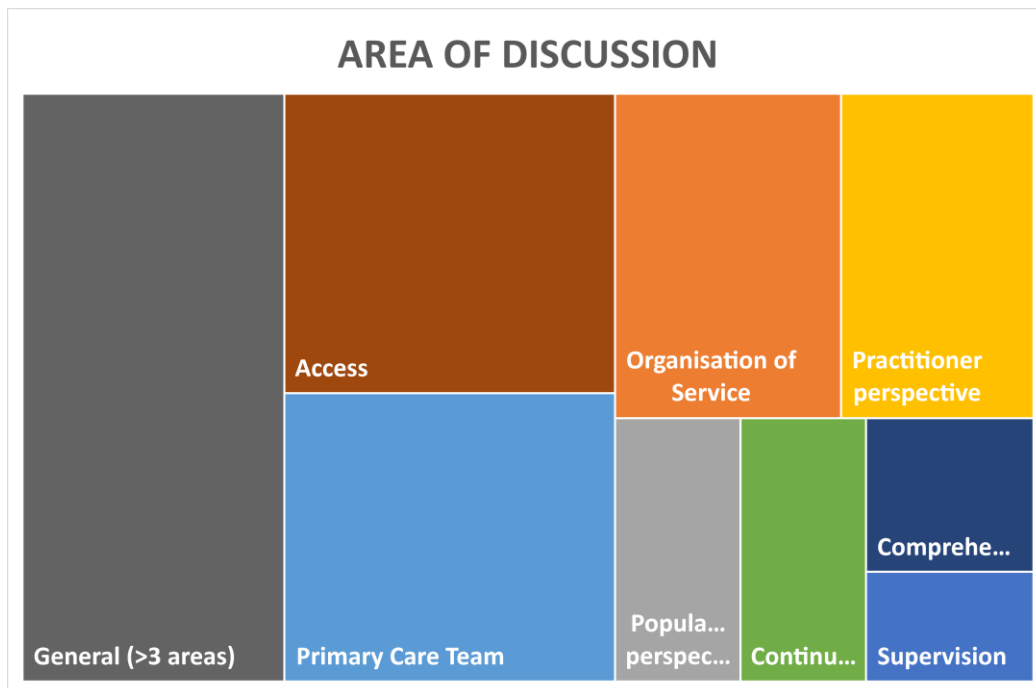
Figure 15 Topic areas discussed in the grey literature reviewed.

7.2.1.3 Policy narrative behind the intervention

This narrative has three parts, each related to governmental strategy or policy of the time with respect to public services and the NHS and the response of professional and academic leaders in general practice to that policy.

The first relates to a period of relative investment during the reforms of New Labour between 2000 and 2007, which also introduced the payment by results system and the quality and outcomes framework (QOF) for primary care. Second is the commissioning and choice agenda, promoted by the coalition government amid the austerity period for public services after the banking crisis (2008-2013). Lastly is the policy to devolve of services to regional bodies led by Simon Stevens during the Conservative governments, during an extended period of relative lower investment (2014-date). The period during which this doctoral research has been undertaken has also included even greater structural changes for primary care with significant increased funding to accelerate the establishment of these new roles within general practice teams. In order to capture the developing policy narrative more vividly, this section is described in the narrative present tense.

Marketization of health services - 2000-2007

The NHS plan, published in 2000 by the Labour Government arguably sets the stage for the transformation of primary care over the next 20 years (Department of Health, 2000). Though it does not describe deviations from more traditional professional roles, it does suggest that nurses and other health professionals should develop greater roles, in which they can utilise the full breadth of their expertise. It also establishes the vision of GPs working in modern premises alongside a multitude of other primary care staff outside the traditional GP team. The following year beacon sites are set up to pilot some of the '*new ways of working'* that challenge the uni-disciplinary ladders and introduce advanced consultant roles for nurses and therapists. (NHS Changing Workforce programme, 2001). Along with this expansion of roles, physician associates arrive in the UK for the first time during a pilot programme in the West Midlands specifically aimed at tackling shortages of GPs and Nurses in primary care. An evaluation of this pilot shows increased access and little change to prescribing or referral patterns, but also a number of barriers in terms of regulation and unfamiliarity with the role (Stewart and Catanzaro, 2005; Woodin *et al.*, 2005). A competency matrix for Physician Associates is published in 2006, which is generally focused on biomedical models and secondary care tasks (Department of Health, 2006). The role of advanced paramedic practitioners is also piloted. A report on several of these pilots suggests that the number of patients transferred to hospital can be halved and that new roles for caring for chronically ill in the community and managing minor illness and injuries should be explored (Woollard, 2006).

A new contract

In 2004, a new contract is established for General Practice services with a strong pay-for-performance component, the Quality and Outcomes Framework (QOF). Alongside clinical indicators of performance, a major part of the performance requirements relate to increasing access to appointments.

General Practice leaders are concerned that this is the beginning of a marketization of UK general practice. Heath and Sweeney (2005) suggest the need for generalist skills to integrate whole person care is becoming greater, and that the emphasis on radical transformation based on individual rights (i.e. access) is undermining the social contract between GPs and their communities and the core responsibility to relieve suffering from ill-health rather than deal with on-the-day demand (Heath and Sweeney, 2005). Starfield and Horder (2007) describe the threat to the core benefits of General Practice from the new contract. Reminding us of these core benefits are person-focused care, first-contact use, comprehensiveness, and care co-ordination, they cite the loss of continuity of personal relationships and the fragmentation of primary care into reimbursable commodities. This will incentivise a disease-focused model and lead to increased costs hospitalisation and adverse events (Starfield and Horder, 2007). The British Medical Association critique the wider NHS transformation as driven by the ideology of the market, putting patient choice above service co-ordination and integration, which increases tensions between primary and secondary care, but support the emphasis on challenging established roles and working differently in teams (British Medical Association, 2007).

Sibbald (2005) eloquently describes the depth of the challenge to establishing a more equitable GP workforce. She concludes this will only be met by a co-ordinated strategy that incorporates all of the following methods: normative (tailored education and training to develop a sense of purpose), utilitarian (one-off payments or flexible benefits) and coercive (e.g. obligated service in designated areas) (Sibbald, 2005).

The House of Commons select committee produce a report on healthcare workforce planning during these years. Amongst its conclusions are the following statements:

> *'In sum, there has been a disastrous failure of workforce planning. Little if any thought has been given to long term or strategic planning'*

> *'we cannot know precisely what future workforce will be needed. This means we will need a more flexible workforce'* (p100, (House of Commons Health Committee, 2007)

Commissioning and choice - 2008-2013

Following the election of the coalition government in 2008, a new report for the next stage of transformation in health care services is produced, with a strong drive to give patients more rights and control over their healthcare, greater choice of both primary and secondary care, and which introduce further commissioning and competition between providers. There is only a superficial description of the required workforce and forms of roles to deliver these changes, except to recognise '*they are emerging'* (p 72, (Darzi, 2008).

It is already recognised that clinicians other than GPs are delivering more and more primary care clinical contacts with patients, increasing from 24% in 1995/96 to 38% in 2008/9 (Hippisley-Cox and Vinogradova, 2009). Opinion continues to be voiced that Physician Associates could increasingly fill some of the service gaps in primary care, for instance to allow GPs to engage more with the governments commissioning agenda (Elegbe, 2010; Ross *et al.*, 2012). By 2012, new competency frameworks for advanced clinical practice and physician associates are developed (Skills for Health, 2010; Faculty of Physician Associates, 2012).

Imison et al (2009) respond to the workforce implications of these latest policies amid the financial climate and planned austerity. They suggest workforce-planning needs to include appropriate skills development for those already in post, as these will form the majority of the workforce in 10 years' time. However, they suggest where the responsibility for this skills development lies in the new structures remains unclear. They also highlight that, given the plans for tighter funding described, the NHS may not be able to afford the number of doctors and that a multidisciplinary approach will be required. (The King's Fund, 2009).

The concerns of the GP profession grow.

There is further concern about preserving relational continuity and calls to recognise this and maximise other forms of continuity as multi-professional teams emerge (Freeman and Hughes, 2010). In support of this, Reeve (2010) describes how the theory of generalism can support recommendations to preserve and support generalist practice (Reeve, 2010). The RCGP response to the consultation on 'liberating the workforce' expresses concern about the lack of evidence underpinning government policy (Royal College of General Practitioners, 2011), and in 2012 they publish *Medical Generalism: why expertise in whole person medicine matters* which recognises that teamwork is important but argues that the benefits of bringing other health professionals into teams are unclear. (Royal College of General Practitioners, 2012). Additionally, as the responsibility for much of the training and support required for new roles is being passed to employers, there are concerns about their being sufficient drivers for providers to prioritise education and training.

A year later, the RCGP produce a prescient vision for future general practice, '*The 2022 GP'* which describes GPs as expert generalists, leading and developing teams of physician associates and nurses (who have developed some core generalist skills) and a range of other professionals who bring role specific competences (Royal College of General Practitioners, 2013). Their arguments are two-fold; in order for this to provide the right care for the public, there needs to be effective training, support and CPD in generalist clinical method for all practitioners working in primary care and that those practitioners need enough time with work collaboratively with patients to manage patient increasingly long term and complex needs.

The Kings Fund vision of a 'house of care' supports this position (Coulter, Roberts and Dixon, 2013). Primary healthcare should be proactive, holistic, preventive, and patient-centred, delivered though a robust and co-ordinated 'house of care'. The house of care service model considers multi-morbidity and long-term health together and an active partnership to care planning with patients. Implementing the model requires health care professionals to abandon traditional ways of thinking and behaving and shift from primary decision-makers to a more generalist partnership model.

The Five Year Forward view – 2014 to present day

At the end of the coalition government's term in 2014, another five-year plan is produced for the NHS that proposes an increasing shift of care provisions from hospitals to primary care – The Five Year Forward View (NHS England, 2014). The House of Commons Select committee prioritise greater individual care planning for long-term conditions and an increase in multidisciplinary approach, expressing concern about the projected shortfall in primary care workforce (House of Commons Health Committee, 2014). They recommend that Health Education England set out a strategy to address this shortfall and adapt the workforce accordingly to deliver integrated multidisciplinary care. Health Education England responds with a workforce strategy. However, this provides limited proposals for primary care transformation suggesting the appropriate workforce response to service developments is not yet clear. Its main conclusion is that to make GP led primary health care a reality, there will be a need to grow the wider primary care workforce (Health Education England, 2014). The Centre for Workforce intelligence then produces a much more extensive report that explains the increase in headcount of GP specialty trainees needs to be between 20-40% to avoid a significant shortfall and that other measures to boost GP workforce supply are necessary. These include promoting alternative primary care services models with a skill mix less reliant on GPs (Plint, 2014). The Kings Fund conclude that the policy commitments to shift healthcare from hospitals to the community have not been backed by sufficient investment and that one possible solution may be skill-mix change (Addicott *et al.*, 2015).

The 'forward view' is to be delivered through a further restructure of the NHS with regional sustainability and transformation partnerships (later to become integrated care boards), and the focus for primary care is weighted heavily towards better access to 'enhanced' primary care services in the community (NHS England, 2015). The RCGP submission to a government consultation on growing the primary care workforce recommends incentives to recruit a wider variety of health care professionals in new roles, including physician associates and paramedics, and that inequalities in workforce supply need addressing (Royal College of General Practitioners, 2015). The subsequent report of the commission concludes that the NHS establishes the 'enhanced' primary care service will be founded on highly skilled multidisciplinary teams, including these roles in addition to other allied health professionals (e.g. physiotherapists), pharmacists and social workers (Primary Care Workforce Commission, 2015). HEE respond by committing to workforce initiatives to develop these roles to support primary care, in order to support GP workload and develop new ways of working (Health Education England, 2015a).

Investment in transformation

An increased amount of transformation investment and activity begins. Regional multi-disciplinary primary care training hubs are established (Health Education England, 2015b), an advanced clinical practice framework is published (Health Education Yorkshire and the Humber, 2015), 'primary care home' vanguards sites are developed (serving populations of between 30-50,000) (NHS England, 2016b). The following year the General Practice Forward View review adds additional investment in practice nurse development and 1000 new physician associates, describing new teams of advanced clinical practice (including nursing), pharmacists and paramedics (NHS England, 2016a) and a general practice resilience programme is established to help struggling practice transform their skill-mix (Primary Care Commissioning Unit, 2016)

The size of this transformation challenge is recognised to be huge. Public Satisfaction in primary care is falling, primarily due to access and staff shortages and experiences of continuity of care are deteriorating (Ipsos Mori, 2016). GP training programmes aren't filling (Health Education England, 2016b). A Health Foundation report explains that addressing technical and organisational aspects of re-designing the workforce without strategic funding in the labour market, including policies to address maldistribution of staff between primary and secondary care and between areas of greater need will not be sufficient. (Buchan, Seccombe and Charlesworth, 2016). Economic modelling shows that unless the maldistribution is addressed the economic costs on the total healthcare system may drain further funds away from where they are required and make the problem worse (Jackson, Irvine and Walton, 2017).

The challenge of supporting these new roles as they integrate into teams in a cost-effective manner is also identified, and a tension between standardised professional roles and local contextual adaptations described that have still not been addressed (The King's Fund, 2016). Evidence on the nuances of how new non-medical roles substitute, supplement or complement existing roles suggest that their introduction may reduce productivity and continuity of care and increase demand and costs unless the local contextual purpose of the transformation is determined beforehand (Nelson *et al.*, 2018).

During the period of this research, the transformation of general practice teams has accelerated further with the establishment of primary care networks that bring traditional practices together to employ and develop the new roles described amongst them (NHS England and British Medical Association, 2019). A significant amount of direct funding has been provided directly through a new 'network contract', which re-imbursement of salaries of a number of the new roles described. This has led to a further dramatic increase in the new roles within primary care teams, often with relatively little planning on how they would be best utilised or integrated into teams.

7.2.2   Section summary

This narrative described in the previous section captures a number of themes. As a close observer of the policy developments, a clinician working in a practice that had adopted some of the policy, as a GP who valued the principles of generalist care and the benefits that primary care brings to the NHS and communities, immersion in this narrative produced a number of questions in relations to assumptions being made.

- Can non-medical ACPs with less experience in primary care services stabilise the quality and availability of general practice?
- Can the integration of ACPs relieve pressure on services at a time when the workforce is under so much pressure to meet demand?
- Will health inequity in the provision of primary care be increased?
- In what ways can new ACPs be supported to develop competencies for generalist care?
- Is primary care able to transform to integrate these ACPs into new ways of working?

These questions are graphically represented in figure 16. Given the size of the workforce challenge and the effects on the wider NHS if general practice services do deteriorate, it seemed answers to some of these questions were necessary. These answers might help determine if it might be possible to maintain a viable primary care services that was available to all communities.

The questions and concepts in this sketch were the starting point for the initial draft programme theory at the start of the research. How this was done described in section 7.3.
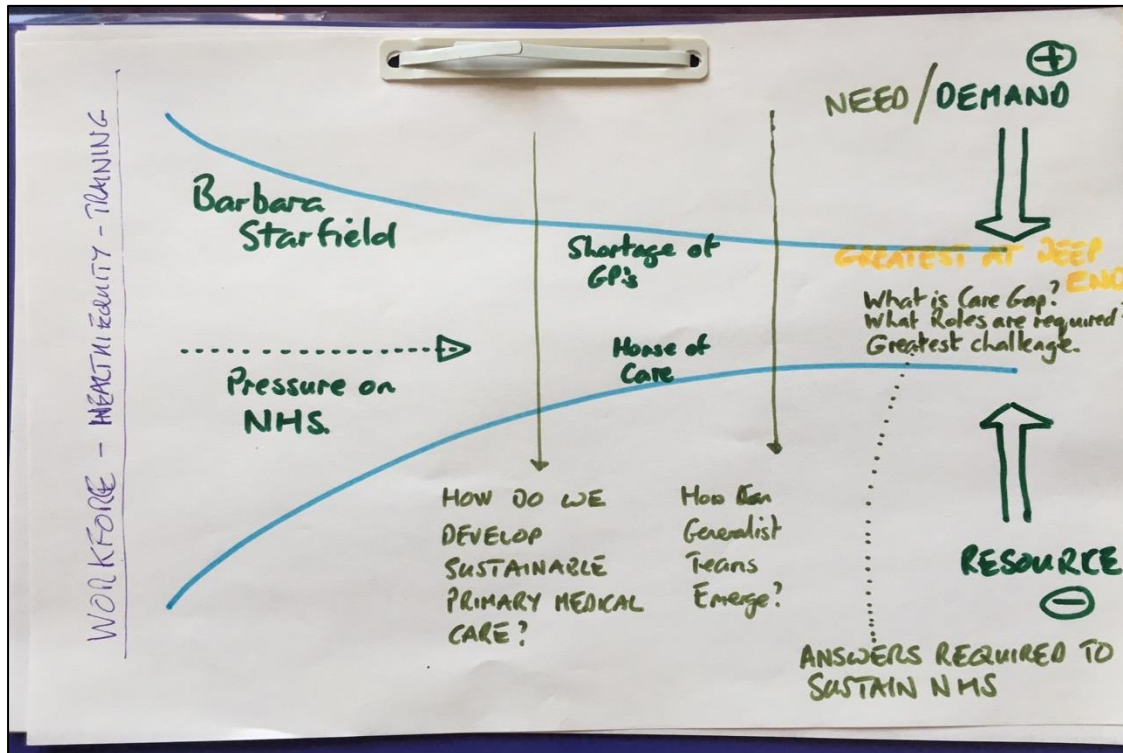
Figure 16 A graphical representation of the question derived from initial retroduction during spring 2018.

7.3 DEVELOPING THE INITIAL PROGRAMME THEORY

7.3.1 Assumptions and theories

In additions to the questions generated by any retroduction, a number of important theories and assumptions were also identified, either derived from policy statements or generated through reflection on experience. Examples of theory were generally found in multiple reports, such as the idea that the NHS should be less hospital focused with more care delivered in the community or that general practice services would be better delivered by larger multidisciplinary teams. Other theories were generated through reflections on experience. Examples of these theories assumptions are that ACPs will develop useful roles that support generalist services in the right circumstances (after mixed experiences in my practice), and that without effective clinical supervision is a critical component that supports and accelerates this outcome and retains new practitioners in their new roles.

More cautionary theories were drawn from previous research, and from academic and professional perspectives. Examples of these are the following: many of the new practitioners are poorly

Table 6 The key theories that led to the first linear programme theory (PTM1) at the beginning of the evaluation.

Area of uncertainty	Theories and assumptions	Primary Source
Non-Medical Advanced Care Practitioners (operating at top and beyond traditional boundaries of competence) will be able to support access to primary care in the future	NHS services should be less hospital focused with more people receiving health care in the community supported by General Practice services	NHS policy
	Expert generalist medical care provides a specific approach to providing medical care. These are continuity, community context, person-centred care and comprehensiveness (breadth across clinical spectrum). These key elements support the effectiveness of health services and support the efficiency of health services	Professional Training in General Practice. Roles in general practice education, training and NHS system
	Recruitment of doctors to General Practice training will be insufficient to support the desired expansion in community healthcare	Roles in general practice education, training and NHS system.
	General Practice medical care will be increasingly provided by multidisciplinary teams	NHS policy
	New forms of clinical roles can be incorporated into General Practice teams to support health care services	Clinical Experience
	Current advanced clinical practice training poorly prepares practitioners for the breadth and complexity of care in a general practice context	Masters research
	Effective clinical supervision of advanced clinical practitioners joining general practice teams will be a key factor in their adaptation to the general practice context	Clinical experience Masters research
General practice teams with greater multidisciplinary involvement develop will provide similar levels of quality of care	General Practice teams with greater multidisciplinary involvement will require expert generalist clinical supervision to maintain key elements underpinning quality	RCGP council working paper Masters research
	General Practice community is not ready to accept ACPs in large numbers	Masters research
	Current workload in general practice means that optimal levels of clinical supervision for ACPs is not always achievable	Masters research, Clinical experience
	Legislation and regulatory arrangements regarding prescribing do not allow all ACPs to be as effective as possible	Masters research
	Legislation and indemnity arrangements make employing ACPs less attractive to primary care organisations.	Masters research
General practice teams with greater multidisciplinary involvement will develop to provide similar levels of quality of care to deprived communities with more complex needs	An inverse care law operates in current arrangements for General Practice funding and workforce	Deep End Yorkshire and the Humber work
	Insufficient numbers of new General Practitioners to support expansion in community healthcare will be most acutely felt in disadvantaged areas	Deep End Yorkshire and the Humber work. Roles in general practice education, training and NHS system
	ACPs joining GP teams serving disadvantaged areas will face greater challenges in relation to adapting to complex healthcare needs	Clinical Experience Deep End Yorkshire and the Humber work
	Overall effect of policies to increase contribution of ACPs in General Practice teams on inverse-care law is unknown	RCGP council working paper
	Effective mechanisms of clinical supervision will be a key factor in supporting ACPs, the teams and the quality of generalist care for disadvantaged populations.	All

prepared for front-line general practice; general practice teams are poorly prepared to support the new practitioners, and that as workforce shortages are more acute in services caring for more deprived communities, the policy will increase health inequities across the service.

The main areas of uncertainty generated by this policy along with the assumptions and theories relating to each are summarised in table 8 above.

This theorising was used to develop the initial sketch in figure 16 into the more defined linear first programme theory model (IPT). This is illustrated below in in figure 17.
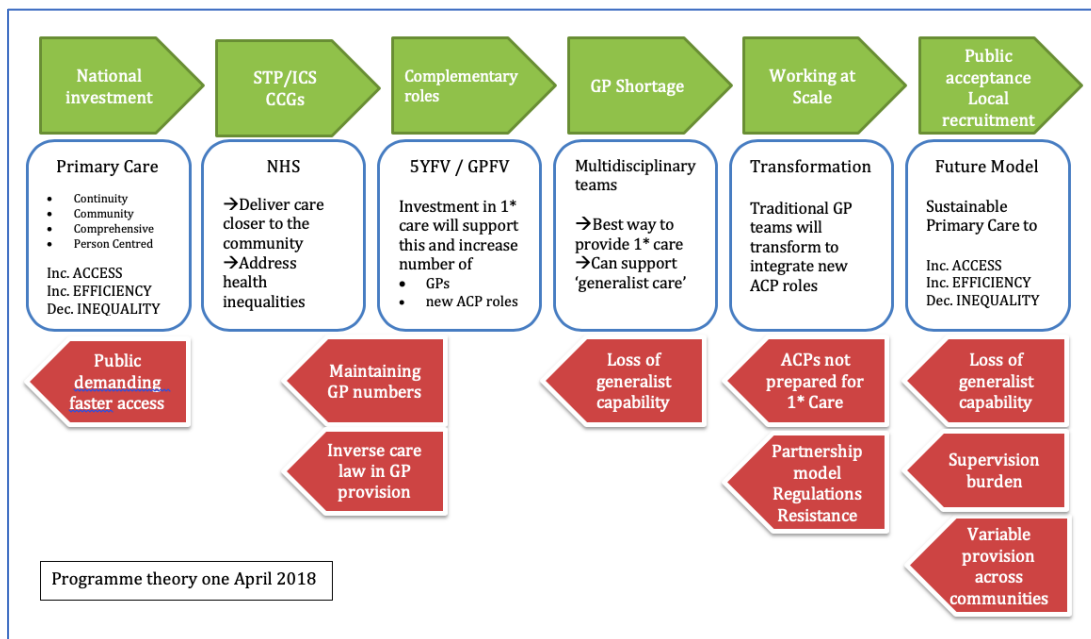
Figure 17 Initial Programme Theory (IPT1) from April 2018 for the integration of ACPs into primary care teams.

IPT1 shows a linear representation from left to right of the major theoretical assumptions considered in the central blue boxes. The green arrows represent the key policy issues, including workforce recruitment, investment and transformation initiatives and public acceptance.

The creation of new Sustainability and Transformation Partnerships (STPs) across the sector was proposed as a way of enabling regional collaboration to deliver more care out of hospitals and address inequities in services (Imison *et al.*, 2017). The GP forward view programme (GPFV) was supposed to provide a primary care investment to support this transformation (NHS England, 2016c). Multidisciplinary teams were considered the best way of supporting the delivery of primary care in the future and this would be enabled by the merging of practice organisations into larger federations of practices (Smith *et al.*, 2013; Primary Care Workforce Commission, 2015). This would result in a

new model of sustainable primary care that fulfilled the same important role within the overall health service.

The red arrows represent potential theories that might frustrate the desired outcomes being achieved. The pressure from the public's demand for access is already undermining the ability other key components of primary care that support the wider health service. The extent of the shortage of GPs and the increasing inequities in GP numbers will make it impossible to start to transform the way care is provided. The lack of understanding of how a change in skill-mix is managed mean and the lack of training in general practice setting of the new workforce mean that the generalist capabilities of teams are weakened. The pressure of clinical supervision in the context of the transformation and ill-prepared new roles lead to anxiety about clinical supervision requirements.

7.3.2 Reflexive statement

As previously described, it is important to recognise that the researcher undertaking any retroduction will be bringing his or her own assumptions that will affect theorising. As well as assumptions created through professional roles there will also be some personal assumptions (Carol H. Weiss, 1997; Pawson *et al.*, 2005).. This next paragraph provides some insight into the researcher's opinion and positionality to the intervention.

Having worked as a GP for twenty-five years, I have developed a personal sense of value in a person-centred approach and generalist care. As well as practicing as a GP, I have had over twenty years as a postgraduate trainer and educator supporting new doctors to gain entry to the general practice register. Over the last 10 years, I have led the delivery of undergraduate education in general practice at the medical school at the University of Sheffield, promoting a person-centred approach and highlighting other aspects of generalism to students.

Given that I am heavily invested in developing this approach to care, I have recognised how less experienced practitioners practice in ways that do not align as closely with a generalist approach. Examples would be potentially unnecessary prescriptions or referrals when a wait and see approach would be more appropriate or neglecting to consider a person's social circumstances when making decisions on clinical management. This can lead to ineffective care and unnecessary polypharmacy and anxiety for the patient.

I am therefore naturally concerned about untested interventions to the service that might undermine a generalist approach, and particularly one that involves a large number of practitioners who are relatively inexperienced in working in general practice settings. I am also aware of the power dynamic in general practice teams between the partners who run the practice and salaried clinical

staff who support the service. This can mean that the desire to meet certain aspects of care, such as access, can affect other aspects of the quality of care, for instance co-ordination and continuity.

I am also heavily invested in the values of the National Health Service and have personally campaigned for increased funding from the Government. I was dismayed by the austerity measures that led to a deterioration in services over the past 15 years, and in particular, the impact on the equitable access to primary care. I have little doubt that these extreme economic constraints have meant that Department of Health, NHS, and Health Education England workforce policy have been shaped by the desire to cut costs. As a founder member of a regional Deep End general practice network, which seeks to establish ways of mitigating health inequities, I have been concerned that the changes proposed to general practice services could lead to an increase in inequities and even a two-tier service. Many colleagues, both in my academic and clinical work have expressed similar concerns and patients have also sometimes asked me what is happening to their local GP services. As captured in the desk-drawer review, the introduction of ACPs into primary care is therefore controversial, with many stakeholders considering it a politically motivated change intended to reduce costs which may have significant negative unintended consequences for the service.

However, I am also pragmatic about the requirement for extra capacity in primary care and the potential capability of new non-traditional roles to support general practice. I have seen, in my own and other practices, non-medical practitioners develop into clinicians who provide excellent generalist care. I have also experienced how multidisciplinary care can enhance care rather than fragment it.

Revisiting the concepts of pursuit-worthiness and loveliness described earlier, I am open to the possibility that with time, energy and the right environment, this intervention can work in some practices. I am less sure of the loveliness of the intervention; with particular concern about its unifying value (can it work in practices that are more pressured due to increased workload). However, as an experienced educator I have some insight into how creating the right environment underlying mechanisms might be created that could unify the theory and allow a broader scope and application across a wider range of practices and for different professional roles.

My position to evaluating the intervention is therefore as an interested stakeholder, somewhat sceptical, but open to the possibility of success. Indeed, I am interested in identifying ways that could make the intervention work as well as is possible for all patients and particularly those who most need it to. This evaluation does not therefore set out to examine the politics of the intervention in great detail but instead focuses on how it might work in practice. That said, the power and politics of

healthcare, the hierarchy of small organisations and the hegemony of doctors within the service must be recognised when appraising the data and considering the CMOCs operating.

7.4   CHAPTER SUMMARY

This chapter has presented some evidence for the retroduction processes that developed the programme theory. As described in chapter 5, retroduction was first described as a psychological concept, which has been adopted by critical realists to describe a critical process of inferential reasoning, when designing programme theory. In the spirit of a critical realist approach, rather than purely constructivist approach (see section 5.1.2), evidence for the experience and information that available and the theories and interpretations taken from this experience and information is presented for critique. A reflexive statement describes my positionality both personally and professionally with respect to the research.

The second element described in the research programme that helps to build the programme theory is that of stakeholder consultation. This is described in the next chapter.

8 DEVELOPING THE PROGRAMME THEORY THROUGH STAKEHOLDER CONSULTATION

As described in chapter 4, NIHR guidance suggests that research into complex interventions should seek to involve as diverse a group of stakeholders as possible (National Institute for Health Research, 2021). This can be particular important when it is difficult to capture all the complexity within and intervention as it helps to focus an evaluation on those aspects that are most important (Rogers, 2008).

This important part of the research took place between spring 2018 and spring 2019 simultaneously with some extensive retroduction at the time. . A number of stakeholder meetings were planned and executed to help develop the programme theory and identify which parts of the intervention were most important. Further meetings were then held to help consider and develop potential CMOCs that may operate during the integration of the new roles into teams.

This process is presented in three stages.

Section 8.1 explains how, after listening to discussions with practitioners and patients, reflections within the research team meant IPT1 could adapted to more explicitly capture those areas considered most important by stakeholders: the practitioner, the practice team, the population, and the supervision process. This produced a second draft programme model, IPT2.

Section 8.2 describes how further stakeholder discussions were used to enrich IPT2 with additional ideas and theories within the four areas considered most important should be considered.

Section 8.3 describes IPT2 and the theorising informing it was presented to groups of academic GPs and other clinicians to consider more deeply what actual mechanisms might be involved in the integration process in the form of Context-Mechanism-Outcome configurations.

8.1 CLARIFYING IMPORTANT THEMES WITHIN THE PROGRAMME THEORY

After the first draft programme theory was created, two facilitated discussions were arranged over the following months, one with a group of academic GPs at various stages of their careers (from GP training to within a few years of retirement), and the other with a diverse group of patients convened by Health Watch Sheffield.

17th April 2018 – General Practitioners

Consultation with GPs at Academic Unit of Primary Medical Care, University of Sheffield

A workshop was held within the AUPMC to discuss their opinion on the key factors relevant to the training requirements, utility, and safe practice of Advanced Clinical Practice roles within general practice teams. The researcher co-facilitated the discussion at this meeting - and the themes of the meeting were summarised by co-facilitators following the meeting. (See appendix 1)

11th May 2018 – Patients

Consultation with patients on recruitment of ACPs into primary care teams –

A workshop was held with members of the public to discuss their attitudes to the recruitment of non-medical practitioners to general practice teams. This group was recruited by Sheffield Health Watch. The researcher co-facilitated this discussion, which considered the information attendees would want about the practitioner training and arrangements at their GP practice if it was to recruit ACPs. (See appendix 2)

After reflections on these discussions within the supervisory team, it was felt that the most important aspect of the intervention for both practitioners and patients related to how well the practitioners integrated into the teams and worked collaboratively to deliver generalist care.

Notes from both meetings suggested there were four main areas relevant to the effective integration of the ACPs into GP teams. These related to the practitioner, the population served, the primary care team and the organisation of clinical supervision.

These four areas were incorporated into a second, adapted initial programme theory two (IPT2), as illustrated in figure 18.
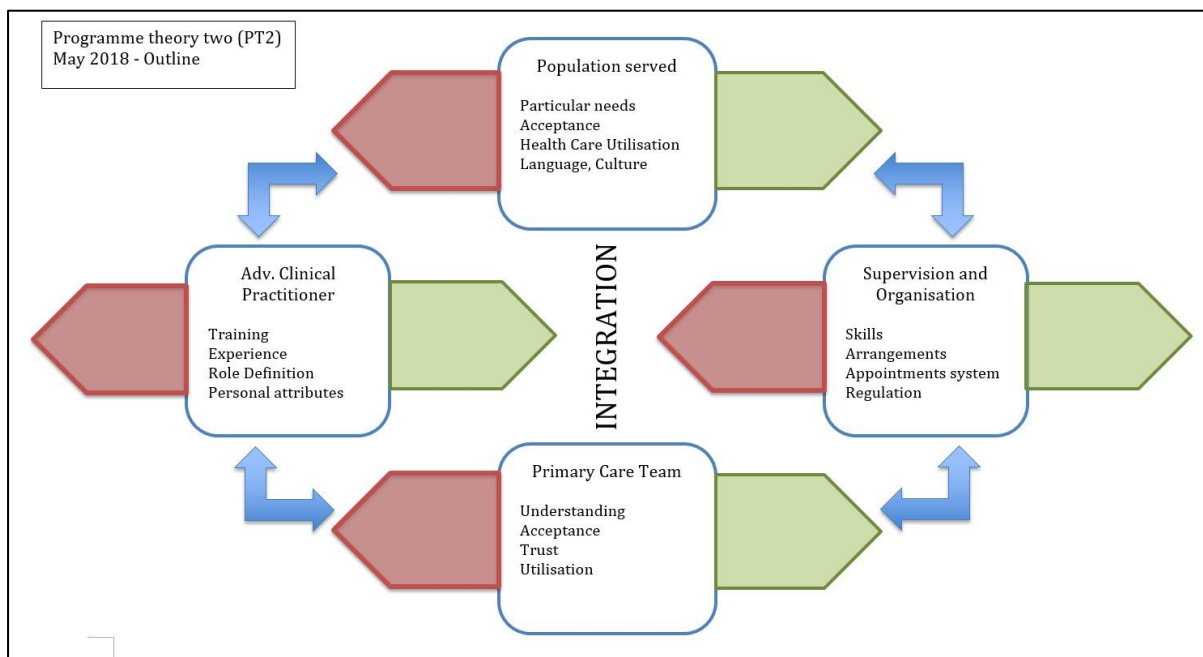
Figure 18 Initial Programme Theory Two (IPT2) – showing the four areas identified as important to the integration of ACPs into primary care teams.

IPT2 shows the four key areas in blue boxes surrounding the concept of integration. Within each area, a number of sub-themes were considered particularly important. For instance, in relation to clinical supervision, the skills of the relevant practitioner, the timetabling arrangements, the appointments system and external regulatory factors were identified. The green arrows are to capture additional factors in each area that might encourage integration, the red boxes indicate factors that might frustrate integration. An opportunity was then taken to explore IPT2 further to try to ensure that as many theories were captured.

8.2 ENRICHING THE PROGRAMME THEORY WITH STAKEHOLDERS

Programme theory two was presented to a multi-professional workshop on developing advanced clinical practice roles that included a small group of representatives from the public. This allowed further ideas related to each area to be captured.

19th June 2018 - ACP Workshop with patients, ACPs, GPs who employed ACPs.
IPT2 was presented at the end of a full day workshop on Advanced Clinical Practice. The participants also considered factors that might support or frustrate the integration of ACPs into General Practice

teams in each area to add to those already identified. These additional comments supported the concepts describe in IPT2 but also added additional insights.

This was an important process as additional insights into each of the four areas were captured that would otherwise not have been considered. Examples of these include issues to do with health literacy and patient involvement, trust and respect for the ACP and their new role, peer support and work allocation. This enriched IPT2 is illustrated in figure 19.
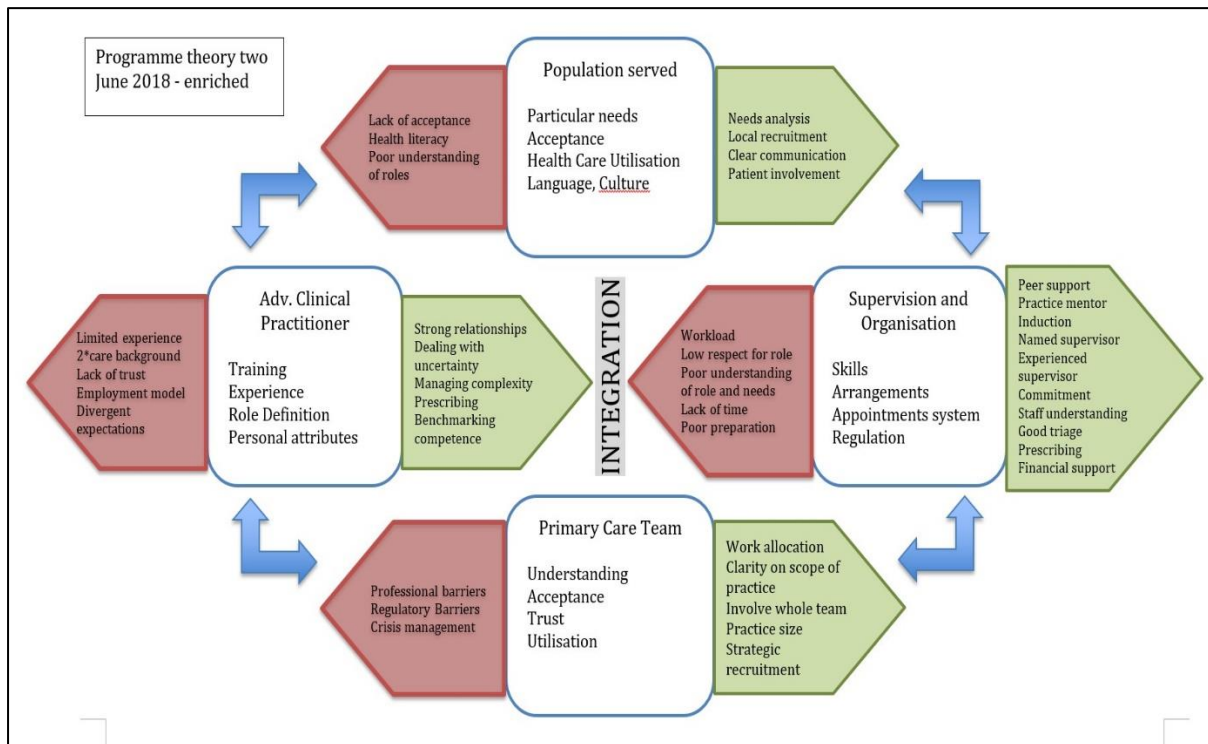
Figure 19 Enriched Programme Theory Model Two with additional theories from workshop of mixed stakeholders on 19th June 2018.

8.3 CONSIDERING CONTEXT-MECHANISM-OUTCOME CONFIGURATIONS

A fourth meeting was then convened which sought to build on the ideas in the enriched IPT2 to help identify possible CMOCs that might be relevant within each area and more broadly. After being presented with the thoughts captured in the enriched IPT2 the group were given blank copies of the resource and reasoning model of a CMOC as illustrated in chapter 4 and asked to work in pairs to theorise CMOCs that might be operating. This was possible as the group of academic GPs at the University of Sheffield were reasonably familiar with critical realist methods due to the fact there were more than one realist project taking place within the group.

19th Feb 2019 - Developing Context-Mechanism-Outcome configurations.

Second workshop with Academic GPs at University of Sheffield.

> *The research project was presented to a further group of academic GPs (who worked in clinical practice and had had experience working with ACPs) that had been previously introduced to critical realist methods and the concept of CMOCs. Comments from the previous workshops were presented and discussed before the group worked in small groups to write potential CMOCs mechanisms using a blank template adapted from Dalkin et al.* (Dalkin *et al.*, 2015)*.*

At the end of this workshop, the CMOCs generated were reviewed by the researcher to identify and remove any duplicates. This left 49 potential CMOCs across the four areas; practitioner (16), team (9), clinical supervision (11) and population served (13). Each of these CMOCs was coded according to their associated area of concern in order they could be tracked through the subsequent testing phase.

Table 7 Original coding of CMOCs identified in the programme theory.

Area of focus	CMOC codes
Practitioner	PR1-16
Team	T1-9
Clinical supervision	SP1-11
Population served	POP1-13

An example CMOC relating to clinical supervision (SP1) is shown in figure 20 and all CMOCs generated through this process are displayed in tables 11-14, along with several additional examples identified through the literature review described in chapter 9.
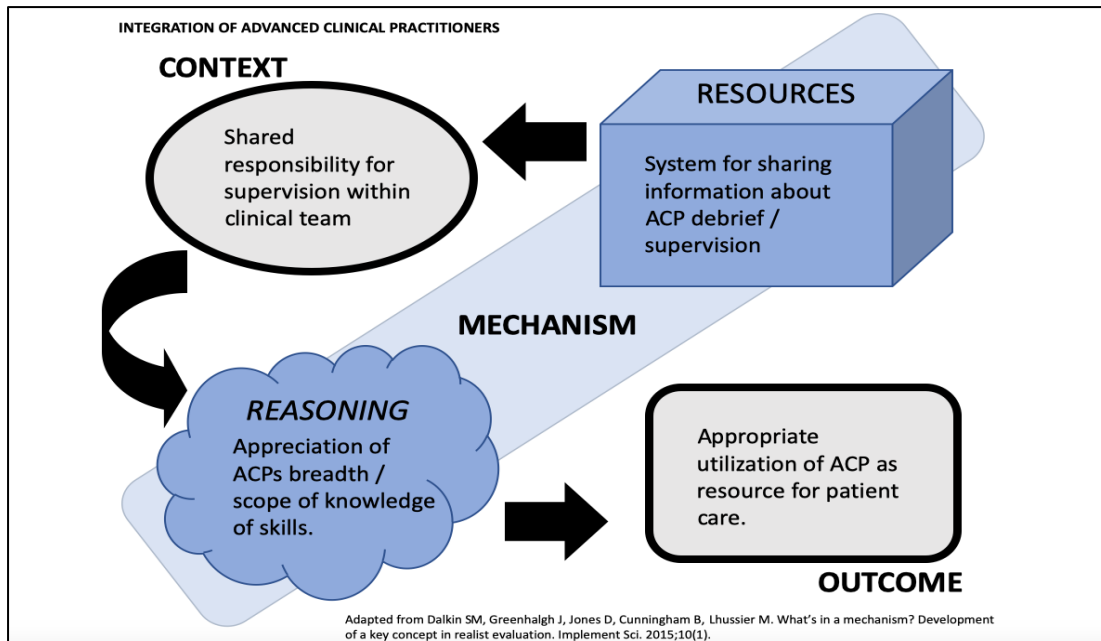
Figure 20 An example of a Context Mechanism Outcome Configuration for Clinical Supervision –
SP1 - If there is shared responsibility for supervision across team [C], a system for sharing a record of supervision and information about ACPs developing scope of practice [M] leads to more appropriate allocation to ACP caseload within the team [O]

SP1 can be summarised in the following way. In the context of an agreed shared responsibility for clinical supervision amongst a number of members of the team, a mechanism involving a system for sharing information between supervisors about important elements of clinical supervision increases the collective appreciation of the ACPs breadth and scope of knowledge and clinical skills. The outcome generated by this mechanism is a more appropriate utilization of the ACPs knowledge and skills for patient care.

This explanation can also be captured by an 'if, then, leads to' statement: *if there is shared responsibility for supervision across team [C], a system for sharing a record of supervision and information about ACPs developing scope of practice [M] leads to more appropriate allocation to ACP caseload within the team [O].* Each CMOC was given a corresponding 'if, then, leads to' statement to capture the relationship between contexts, mechanisms, and outcomes.

8.4   CHAPTER SUMMARY

Through a series of stakeholder engagement events the original linear programme theory (IPT1) was developed into a programme theory model the focused more closely on those areas that the stakeholders thought most important (IPT2). This was then explored in more breadth and depth to

develop an enriched programme model with a series of potential CMOCs within it. Though these CMOCs are grouped according to the four areas described, it is likely will operate both independently and interdependently with other CMOCs.

The third step in the programme theory building phase of the research programme involved a sense check of the theorising against a sample of published literature in the area through a rapid realist review. This is described in the next chapter.

9 A RAPID REALIST REVIEW OF THE LITERATURE

Though retroduction and stakeholder opinion are considered critical in a realist evaluation, any programme theory will be brought closer to something representing reality through being informed by the relevant literature, particularly in terms of any conceptual assumptions inherent within the programme theory (Pawson *et al.*, 2004). Additionally, the literature can help inform practical considerations in terms of the form and scope of any empirical data collection. The process of digging through the literature to understand what it can offer to this effect has been described as 'concept mining' (Pawson, 2004; Rycroft-Malone *et al.*, 2012). 'Concept mining' can be used to provide a more objective sense-check on the plausibility of conclusions drawn from retroduction and stakeholder involvement but how this is best achieved is open to interpretation. In his seminal description of a realist review, Pawson (2004) describes the methods in the review opaquely: *"a very long story is thus omitted. There is nothing in this paper about the search and retrieval of documents. Nor is there anything on the judgement involved in selecting the most promising conceptual system"* (Pawson, 2004).

9.1 APPROACHES TO SCOPING THE LITERATURE IN REALIST RESEARCH

Published realist review protocols have used a number of approaches to scoping the literature. Brennan et al (2014) describe a realist review of the effectiveness of medical appraisal that uses literature reviews in a two-phased strategy, one to define a programme theory and a second to search for empirical data. However, they do not provide the exact protocol used for either search, instead suggesting a series of steps that might be used in any combination (Brennan *et al.*, 2014). Kastner et al (2011) describe a similar two-phase strategy in their protocol for a realist review of the implementation of clinical guidelines. A 'desk-drawer' search strategy (literally going through the existing materials within the research team) is then supplemented by a further 'scoping review' through EMBASE and MEDLINE. Again, the exact protocol for the scoping review is also not clearly described (Kastner *et al.*, 2011).

The terms 'scoping review' and 'scoping study' have also been shown to describe a heterogeneous set of approaches ranging from a relatively rapid review (to familiarise oneself with background information) to a formal review that identifies gaps in the literature to inform decisions about whether and how to approach a more extensive systematic review (Arksey and O'Malley, 2005). A narrative review of scoping reviews found that only 51% of them reported following a described

search strategy and only 28% described a formal quality appraisal of the literature (Pham *et al.*, 2014).

Other realist reviews do provide some clearer direction. Jagosh et al. describe a protocol for an extensive realist review which uses middle-range theory to describe possible CMOCs that are then further refined through an '*adapted theory-driven method*'; though this does not involve collecting new empirical data from the field of interest (Jagosh *et al.*, 2012). A realist review on access to primary care for socioeconomically disadvantaged older people in rural areas begins with a theorising stage using an *'initial rough theory based on prior knowledge and an initial scoping search'*. A little more detail on this initial scoping search is helpfully provided: *'a narrow search in MEDLINE and a search for reports and policy documents using an internet search engine (Google) to identify key resources and understand the breadth of literature'* (Ford *et al.*, 2016).

More recently Booth et al. (2019) produced a helpful and practical guide in their chapter '*Scoping and searching to support realist approaches'* in *'Doing Realist Research',* which describes six different reasons for using literature in realist research. They also illustrate a fundamental difference between conventional systematic reviews and realist reviews, explaining how realist searches follow a particular 'logic' rather than a pre-defined technique or recipe. However, they are quick to point out that notwithstanding this difference, the methods for searches used should always be transparent and clear. Their key message is *'whether you are conducting an evaluation or a synthesis, harnessing complementary perspectives by juxtaposing primary data from stakeholders alongside published literature strengthens your realist approach'* (page 148 (Booth, Wright and Briscoe, 2019). These are listed in table 10.

Table 8 Reasons for using literature searches in realist enquiry – adapted from Booth et al (2019)

1. To formulate specific questions for lines of enquiry
2. To explore a proposed area of research to ascertain previously published research and if necessary refine the search question
3. To identify hypothetical explanatory accounts of how an intervention works in order to inform programme theories
4. To identify empirical evidence for C-M-O configurations to test and refine programme theories
5. To respond to new information needs as they emerge during testing and refining of the initial programme theory
6. To document the search process in an explicit and transparent manner

In the face of this ambiguity and the more recent guidance from Booth et al., it appears the best method for reviewing the literature to inform the programme theory is left open to interpretation

but needs to be approached in a similar way to decisions about the overall evaluation plan. This means keeping possible explanatory mechanisms as the focus of the search whilst being pragmatic with respect to the field in question, the position of the review in the overall evaluation plan and the context of the research itself. Booth et al.'s guidance (table 10) helps clarify the position of the literature review within this evaluation, which is closest to reason three; *to identify hypothetical explanatory accounts of how an intervention works in order to inform programme theories*.

This review seeks to provide a sense of whether the possible CMOCs described so far are reflected in the literature, as well as identifying any new ones; to give confidence the initial programme theory developed is describing something that is 'in the right ballpark'. In this way, the review increases the authenticity of the programme theory and CMOCs that are to be tested at later stages (ref).

9.2 METHOD

9.2.1 Search framework

Varieties of literature search frameworks have been used for reviews that have adapted the commonly used search model for reviews of quantitative data, which describes the *Population, Intervention, Comparators and Outcomes (PICO)*. Though not explored in more detail, systemised qualitative reviews and mixed methods reviews have used a number of adaptations (Briner and Denyer, 2012; Cooke, Smith and Booth, 2012; Joanna Briggs Institute, 2014).

For this search, a framework that derived from *Context, Intervention, Mechanism and Outcome* (CIMO) as it most intuitively related to the Context-Mechanism-Outcome configurations at the heart of realist enquiry and has been used for other realist reviews was chosen (Denyer, Tranfield and Van Aken, 2008; Mazzocato *et al.*, 2010; Maidment *et al.*, 2017). However, when using this framework, the individual elements are not necessarily equivalent to the contexts, mechanisms, and outcomes within a generative CMO configuration; for instance, the contexts in the review are considered as higher-level contextual settings related to the scope of the evaluation, within which lower level CMOCs may be found.

The review focused on the two relevant situational areas described in chapters 2 and 6: general practice teams (C^1) and urban deprived communities (C^2).

- **C** **Context (setting) 1** **- General Practice Teams**

  Context (setting) 2 **- Urban Deprived Communities**
  - **I** **Intervention** **- Advanced Clinical Practitioners**
  - **M** **Mechanisms** **- to be considered through the review**
  - **O** **Outcome** **- Integration**

Contextual setting one (C^1) - is **General Practice Teams**. Search terms for this context were adapted to recognise the variety of international terms used to describe contexts that are similar in setting and purpose to UK General Practice. Exclusion criteria were used to remove those papers that did not discuss first contact, community based, fully generalist medical services.

Contextual setting two (C^2) – is **Urban Deprived Communities.** Varieties of terms are also used to describe relative deprivation, whether social, economic, or related to access to services. It was recognised that it might be difficult to separate papers that focused on urban rather than rural & remote context deprivation (some may report on both) at the search stage but exclusion criteria were used abstract sifting and screening of full texts.

I – captures the introduction of **Advanced Clinical Practitioner** into general practice teams**.** A variety of search terms was also selected to capture as much of the available literature. Pharmacy and Physiotherapy roles were excluded.

M – relates to potential **mechanisms** identified in the literature sourced, and any theories described on how ACPs are supported (or not) to integrate into general practice teams to provide generalist care. These are discussed in relation to the previous programme theory development.

O – concerns the topic of **integration**. This is perhaps the most nebulous concept for the review. Some consideration regarding what successful integration means is required beyond measurements of the quality of care provided during each encounter with patients. It certainly means that the ACP becomes an efficient member of the team, providing safe and effective care. The aspiration is that the ACP would develop a generalist, person-centred focus to their care. It would also imply that attitudes of colleagues towards them are positive and that inter-professional relations are strong. Those papers with no discussion about integration or joint working (where ACPs are working alongside GP teams) were excluded.

9.2.2   Search method

MEDLINE and EMBASE databases (through the University of Sheffield) and CINAHL (through NHS Athens) were searched using Boolean search terms to encompass each of the concepts described above: 'General Practice' AND 'Urban deprived communities' AND 'Advanced Clinical Practitioners' AND 'Integration'. The keywords search terms and MESH terms used for each concept and database are shown in appendix 3. The following limits were applied to all searches: Abstract available, Full Text available, and English Language. No date limits were set.

Duplicate articles were then eliminated from the search and available abstracts reviewed against the inclusion and exclusion criteria shown in table 11. Papers that clearly met all the inclusion criteria or

which could not be excluded with certainty on any one or more criterion on review of the abstracts were included for full text review.

Table 9 Inclusion and exclusion criteria for the rapid realist review

	Criteria	Inclusion	Exclusion
1	Setting 1	General Practice / Family practice	Outpatients, Emergency department, Hospital, Dental services,
2	Setting 2	Urban, Deprived Population	Rural alone
3	ACP roles (intervention)	Physician Associates, Paramedics, Advanced Nurse Practitioners	Pharmacists, Physiotherapists alone (without other ACP roles)
4	Integration into generalist team	Role within a Generalist team, or additional service separate to GP team with description of interaction with the Generalist team	Additional out-reach service in primary care setting separate to Generalist team with no description of interaction with Generalist team

The available full texts of these papers were then screened against the inclusion and exclusion criteria and those that did not meet all the criteria were excluded from further analysis.

Remaining papers were classified, and quality checked against adapted literature appraisal tools from the Joanna Briggs Institute quality appraisal toolkit (Joanna Briggs Institute, 2014). Key theories on relevant potential mechanisms that might be operating were then considered from a review the remaining papers. No additional snowballing or concept mining was undertaken using the references of these final papers.

Qualitative data relating to relevant theory were extracted into and excel sheet before analysis. No structured thematic analysis of this data was undertaken. Rather, the data was reviewed against the previously identified programme theory and CMOCs for each of the four areas that had been identified to look for theory in the literature that supported or challenged them. Where new CMOCs seemed to be suggested by the data, these were exported into the same template used for other CMOCs and added to the list of potential CMOCs for analysis.

9.3 RESULTS

9.3.1 Search results

Twenty-nine papers were included in the final review. An adapted PRISMA diagram is provided in figure 21 and table 12 provides a summary of the included papers. At abstract screening, papers were most often excluded either because of the care setting (secondary rather than primary care) or because they focused on rural and remote rather than urban deprived settings; a lesser number did not describe any collaborative work within general/family practice teams. On full text review, a decision to include five papers was made that did not clearly relate to urban deprived communities were left in the analysis as it was felt they could help give some additional flavour of mechanisms that might be in play more generally across all population contexts. No papers were excluded on quality criteria.
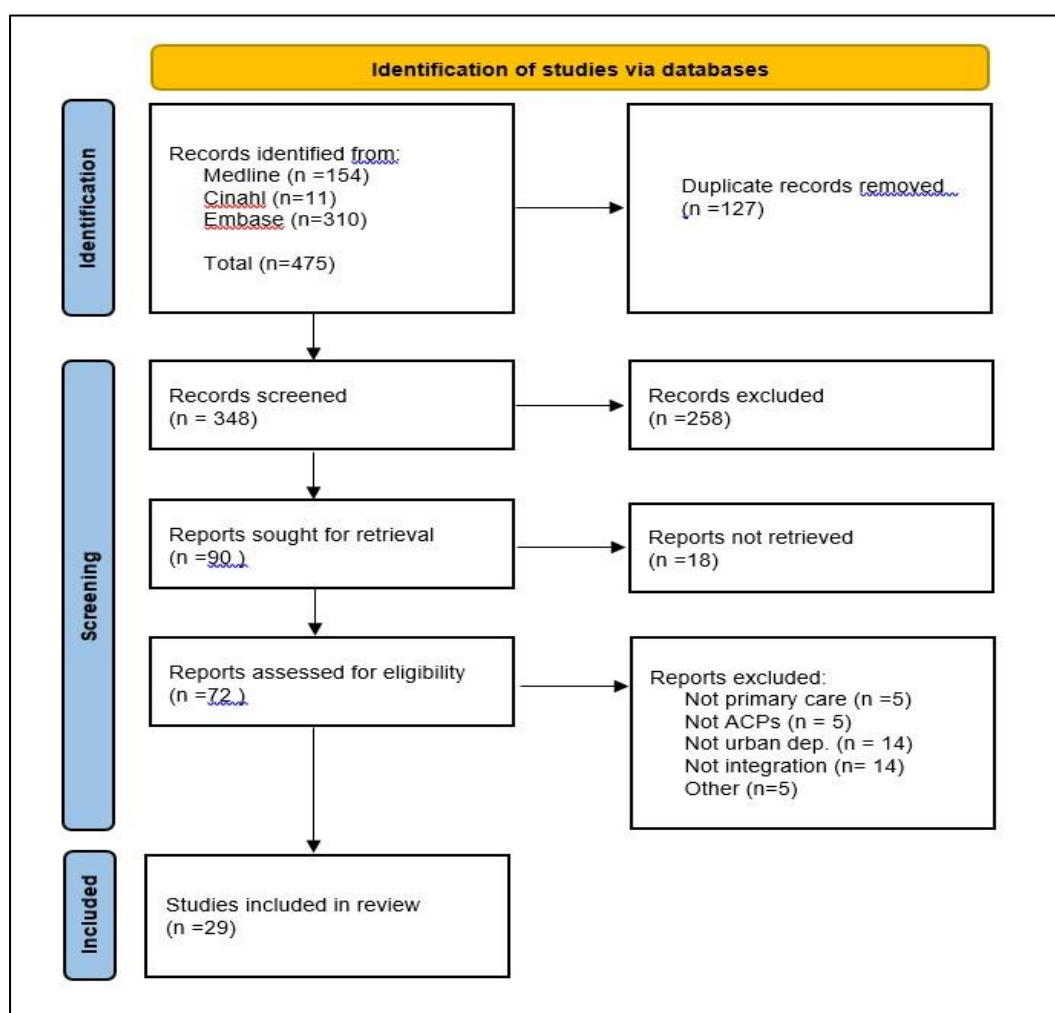
Figure 21 – An adapted PRISMA diagram showing the retrieval of papers for the rapid realist review of integration of advanced clinical practitioners in general practice see http://www.prisma-statement.org/.

Table 10 A summary of the final papers reviewed from the literature search.

TITLE	YEAR	COUNTRY	TYPE	NOTES
A nursing solution to primary care delivery shortfall.	2018	USA	TEXT	Lessons learnt from USA over 25 years introducing NP into primary care workforce
Associate degree nursing in a community-based health centre network: lessons in collaboration.	2004	USA	CASE	Preceptor programme with lessons for practitioners about caring for poor communities.
Caring for the disadvantaged: the role of physician assistants.	2014	USA	QUAL	Poor quality paper. Few quotes, no ethics, no reflexivity – describes quant data on participants and some summary of qual. Conclusions not easy to draw from qual data
Cultural competence and perceptions of community health workers' effectiveness for reducing health care disparities.	2015	USA	QUES	Study of cultural competence, cultural preparedness and thoughts on effectiveness of CHW to reduce health disparities of primary care staff
Does familiarity breed respect? Physician attitudes toward nurse practitioners in a medically underserved state.	2010	USA	QUES	Study of attitude of family physicians towards NP depending on working practice, including defensive ideas on practice boundaries and cost *not solely focused on urban deprivation
Examining the potential of nurse practitioners from a critical social justice perspective.	2008	USA	TEXT	Critical social exploration of potential of nurse practitioners to address health inequities through working roles and as part of skill mix
GPs' perceptions of the nurse practitioner role in primary care.	2002	UK	QUES	Postal questionnaire study on whether NP should be employed, and why. *not solely focused on urban deprivation
Increased autonomy for nurse practitioners as a solution to the physician shortage.	2011	USA	TEXT	More of a polemic. About need for NP to be allowed to extend role as far as possible
Insurer policies create barriers to health care access and consumer choice.	2006	USA	TEXT	Main thrust of article is about willingness of insurers to recognise independent practice and effect on NP scope
New health professional practice patterns.	1978	USA	QUES	Q survey cu NPs and PAs place of work, satisfaction and clinical supervision etc. after qualification *not solely focused on urban deprivation

Title	Year	Region	Type	Notes
Nurse management of 'same day' consultation for patients with minor illnesses: results of an extended programme in primary care in Catalonia.	2011	EUR	SERI	Report from Catalonia of NP across FP teams, minor illness triaged through protocol, no clearly deprived communities
Nurse practitioners: a comparison of rural-urban practice patterns and willingness to serve in underserved areas.	2000	USA	ANAL	Census of NPs analysing demographics including where working and willingness to work underserved areas
Perspectives of Nurse Practitioner-Physician Collaboration among Nurse Practitioners in Canadian Long-Term Care Homes: A National Survey.	2017	CANADA	QUES	Experience of NP on collaboration in a new LTC for residential/nursing homes *not solely focused on urban deprivation
Physician assistants and Title VII support.	2008	USA	TEXT	Regarding public subsidy for PAs in primary care being important to address HI to access –
Physician extenders, the law, and the future.	1980	USA	TEXT	About how PA/NPs may develop as independent practitioners working with GPs rather than competing with them
Providing primary care using an inter-professional collaborative practice model: What clinicians have learned?	2017	USA	CASE	Well reported case study on inter-professional collaborative practice service undeserved area
Rural and urban physicians' perceptions regarding the role and practice of the nurse practitioner, physician assistant, and certified nurse midwife.	2003	USA	QUES	Survey unpicked some relevant thoughts on different contexts in urban/rural contexts in USA. *not solely focused on urban deprivation
State practice environments and the supply of physician assistants, nurse practitioners, and certified nurse-midwives.	1994	USA	ANAL	Cross section of regulation in USA and practitioners, covers areas with less 1* care and addresses competition vs integration
Systematic review of recent innovations in service provision to improve access to primary care.	2004	UK	SYST	Well reported. Focuses on key measures to increase access. Need to pick out ACP and urban deprived as peripheral
The contributions of physician assistants in primary care systems.	2012	INT	SYST	Not well reported. Addresses PA work across Starfield's criteria for 1* care. Need to unpick urban deprived from the rest

The impact of non-physician clinicians: Do they improve the quality and cost-effectiveness of health care services?	2009	INT	SYST	Well reported. Large review, not just primary care, nor urban – needs teasing out
The implementation evaluation of primary care groups of practice: a focus on organizational identity.	2010	CANADA	QUAL	Well described study of intervention NP to address access to primary care in urban underserved environment. No description inequity
The nurse practitioner role: Solution or servant in improving primary health care service delivery.	2015	AUS	TEXT	Proposes that NPs can be the method of transforming primary care service approach to care
The Untapped Potential of the Nurse Practitioner Workforce in Reducing Health Disparities.	2017	USA	SYST	Well reported review. Describes NPs regulatory, roles and work-related factors that limit opportunities
The value of nurse practitioners in Dutch general practices.	2010	EUR	SERI	Seven paired NPs with supervisors, work schedule, collaboration, not clearly in deprived practices, need to tease out,
Trust, mistrust, racial identity and patient satisfaction in Urban African American primary care patients of nurse practitioners.	2009	USA	QUES	Comparison of cultural mistrust, medical mistrust, racial identity and satisfaction with NP
Utilization of nurse practitioners to increase patient access to primary healthcare in Canada--thinking outside the box.	2010	CANADA	CASE	Two case reports of NP integrated to teams for underserved communities – qualitative data
What are the key elements for implementing intensive primary care? A multisite Veterans Health Administration case study.	2018	USA	SERI	Small series of pro-active care multi-disciplinary models for vulnerable patients
Who is caring for the underserved? A comparison of primary care physicians and non-physician clinicians in California and Washington.	2003	USA	ANAL	Describes misdistribution of primary care and where ACPs work in urban deprived areas, discussion looks at why (briefly)

Key: **Type of study:** *ANAL - Analytical Cross-Sectional Study* **CASE** *– Case study* **SERI** *– Case series* **TEXT** *– Opinion, Editorial* **QUAL** *Qualitative study* **QUES** *– Questionnaire study* **SYST** *Systematic review selected* from Joanna Briggs Institute mixed methods classification 2014 (Joanna Briggs Institute, 2014) **Geography:** *CAN – Canada* **UK** *– United Kingdom* **USA** *– United States of America* **AUS** *– Australasia* ***** *- indicates studies that were still 'unclear' for one criterion*

9.3.2 Relevant theory identified.

The main findings relating to the potential mechanisms in play are considered according to the four areas developed during the programme theory modelling; practitioners, practice team, population served and clinical supervision arrangements. They are presented in this way to provide structure and clarity. As previously discussed, any explanatory mechanisms will be operating in a complex environment in combination with others.

9.3.2.1 Practitioners

A number of papers proposed that the nursing background of some ACPs could provide a better approach to providing for the needs of deprived communities than the traditional biomedical approach adopted in medicine (Browne and Tarlier, 2008; Dierick-van Daele *et al.*, 2010; Carryer and Yarwood, 2015; Carter, Moore and Sublette, 2018; Chang *et al.*, 2018). More specifically it was suggested that a nursing background better prepared ACPs for the support and health coaching roles required for people suffering from long term conditions (e.g. Diabetes or COPD) and in care planning for patients with multiple health problems (Browne and Tarlier, 2008; Chang *et al.*, 2018). Other authors proposed that developing better 'medical' diagnostic training in addition to a nursing background could provide a powerful resource for caring for deprived communities but that this would require ACPs with nursing backgrounds could successfully navigate the shift in practice to incorporate both perspectives (Browne and Tarlier, 2008; Dierick-van Daele *et al.*, 2010; Carryer and Yarwood, 2015)(Fabrellas *et al.*, 2011). There were no similar comments about ACPs from other professional backgrounds except in one USA study which reported patients considered PAs had a more holistic approach than GPs (Henry and Hooker, 2014). One paper described how ACPs from a nursing background had more opportunities for professional development within their professional structures relative to PAs and cautioned against studying ACPs from different backgrounds as one group (Celentano, 1978).

Three papers specifically compared the role of PAs to nurse ACPs within GP teams. From a service aspect, there was a view that PAs more often operated in a role much closer to that of a GP (as a physician extender) where nurse ACPs were providing more pro-active and chronic disease care (Celentano, 1978; Rodríguez and Pozzebon, 2010; Hooker and Everett, 2012; Henry and Hooker, 2014). Additional to clinical patient facing roles one paper described nurse ACPs as effectively leading changes to non-clinical aspects of the service or being involved in teaching, where another described how they were frozen out of additional practice development activities (Connolly *et al.*, 2004; Rodríguez and Pozzebon, 2010).

Three papers suggested that ACPs were more likely to come from communities that were less affluent than doctors and that this could potentially mean they would have a greater understanding

of the needs of less-affluent communities or would want to work amongst less well-off communities themselves (Grumbach *et al.*, 2003; Henry and Hooker, 2014; Mobula *et al.*, 2015). Two case studies from the USA described how ACPs were more aware of, and used community assets more effectively with their patients then doctors (Connolly *et al.*, 2004; Mobula *et al.*, 2015). In the current UK environment, these assets would best be considered as the resources provided by social prescribing initiatives.

Finally, there were a number of papers advocating for better training for ACPs in working in deprived communities in order to better prepare them for the complex health care required and in the importance of appreciating and addressing social determinants of health (Connolly *et al.*, 2004; Browne and Tarlier, 2008; Cawley, 2008; Mobula *et al.*, 2015; Carter, Moore and Sublette, 2018).

9.3.2.2 Practice Team
Themes relating to the structure of general practice team focused mainly on the role the ACP took in the team and whether the ACP role was primarily used as a 'physician extender' (to increase access to care) or in a way that utilised their own particular skill set to improve care. A number of papers described using roles to increase immediate access to appointments on the same day, particularly for minor illnesses (Browne and Tarlier, 2008; Dierick-van Daele *et al.*, 2010; Fabrellas *et al.*, 2011). Others described the unique value of nurse ACPs developing roles in pro-active care and support for vulnerable patients. A number of papers suggested that using ACPs as substitutes for GPs, limited the added value they could bring to services for deprived communities (Browne and Tarlier, 2008; Dierick-van Daele *et al.*, 2010; Hooker and Everett, 2012; Poghosyan and Carthon, 2017; Mcainey *et al.*, 2018).

The importance of collaborative practice between ACPs and GPs in discussing patient care plans was described and that one positive outcome of this was mutual respect between the two (Street and Cossman, 2010; Chang *et al.*, 2018; Mcainey *et al.*, 2018). Others cautioned that discussions between practitioners needed to be structured carefully and that professional hierarchy, misogynist attitudes, and lack of respect for ACPs professional backgrounds could restrict the input of the ACP role and lead to unhelpful team discussions (Rodríguez and Pozzebon, 2010; Street and Cossman, 2010; Carter, Moore and Sublette, 2018). With respect to difficult inter-professional relationships, one paper described how non-clinical members of the teams (e.g. reception) mitigated the damage of unhelpful attitude of GPs (Rodríguez and Pozzebon, 2010).

9.3.2.3 Population served.
A number of papers suggested there was often limited evidence of any preference to see a GP over an ACP with patients simply appreciating an increase in access to services (Chapman *et al.*, 2004;

Hooker and Everett, 2012; Henry and Hooker, 2014; Mcainey *et al.*, 2018). It was also reported that in addition to access, ACPs were supporting other elements considered to represent quality in primary care services such as continuity and comprehensive care (Hooker and Everett, 2012; Poghosyan and Carthon, 2017). ACPs also were reported to support a person-centred approach and co-ordinated care for those with long term conditions (Dicenso *et al.*, 2010; Carryer and Yarwood, 2015); and that if ACPs were only used in a substitutive role for access these benefits might be squandered (Browne and Tarlier, 2008; Dicenso *et al.*, 2010; Carryer and Yarwood, 2015). One paper described how unless all potential contributions and skills were utilised from members of the team, long-term management plans for those with long term conditions were more likely to fail (Selleck *et al.*, 2017).

Several papers suggested that ACPs (in particularly PAs) were more likely to work in services for deprived communities than GPs and this was particularly the case for those from black and minority ethnic groups (Grumbach *et al.*, 2003; Cawley, 2008). One interesting paper from the USA described evidence how the ethnic diversity of ACPs had the effect of mitigating against a general distrust of medical services within a predominantly African American community (Benkert *et al.*, 2009).

9.3.2.4 Clinical supervision
In contrast to some of the above descriptions of ACPs supporting generalist services, GPs who were involved with supervising ACPs as they integrate into GP teams had mixed opinion on the ability of ACPs to support generalist care. There were also concerns about vicarious liability, mistakes being made when supervising care for more complex cases and the time involved for clinical supervision activities (Carr *et al.*, 2002; Burgess *et al.*, 2003; Fabrellas *et al.*, 2011; Henry and Hooker, 2014; Mcainey *et al.*, 2018). Some authors suggested that a major cause of some of these problems was not the competency of the practitioners themselves but regulatory factors (Hansen-Turton *et al.*, 2006; Henry and Hooker, 2014; Carter, Moore and Sublette, 2018). In the USA, in states where regulations were less restrictive, it was suggested ACPs were able to make a greater contribution to general practice services for deprived communities relative to states with more restrictions (Burgess *et al.*, 2003; Pericak, 2011).

A description of ten community health centres hinted at concerns that PAs had less ability to recognise and handle the complexity of clinical work in deprived areas and that clinical supervision conversations had to manage this (Henry and Hooker, 2014). A questionnaire study of GP perceptions of nurse ACP roles echoed this, with some GPs suggesting they had concerns about the capability of nurse ACPs to make any diagnostic decisions (Carr *et al.*, 2002). Another case study described how the need for clinical supervision could be limited by creating strict protocols for a

series of specific presentations and only allowing ACPs to manage patients strictly within this confined scope of practice (Fabrellas *et al.*, 2011). Despite these potential lack of trust in the role, there was a recognition that increased trust could developed over time (Carr *et al.*, 2002; Burgess *et al.*, 2003)

Some theory was offered about what arrangements were best for clinical supervision. Proximity and immediacy of conversations between clinicians was considered important in one report of inter-professional practice (Selleck *et al.*, 2017). A recommendation that a comprehensive initial assessment of a practitioner's skills at the beginning of a supervisory relationship was important (Chang *et al.*, 2018). Perhaps less expected was the suggestion that this initial assessment should move beyond skills and competencies to a deeper discussion about philosophical approaches to providing healthcare with respect to the contribution the ACP might bring to the team (Poghosyan and Carthon, 2017).

A number of papers supported the suggestion that clinical supervision conversations needed to adapt for particular contexts or practitioners. Flexible of clinical supervision, with time for supportive conversations for developing holistic care mixed with diagnostic checks during new or acute presentations (Carryer and Yarwood, 2015; Mcainey *et al.*, 2018).

One paper highlighted how when supervising practitioners were questioning clinical judgement, it was important to have an interrogative discussion of the information gained and decisions made (Celentano, 1978). However, another paper found that overly hierarchical and biomedical clinical supervision of nurse ACPs resulted in restricting the value of their input to patients' overall care plans (Selleck *et al.*, 2017). Reports of inter-professional collaboration to provide and develop services for deprived communities suggested supervision that recognised the strengths of each professional role promoted autonomy, improved care, and job satisfaction (Celentano, 1978; Carryer and Yarwood, 2015; Mcainey *et al.*, 2018).

9.4 DISCUSSION

Many aspects of the potential CMOCs identified initial programme theory are echoed in the literature. New theory is also found, particularly relating to nurse ACPs. Lastly, there is caution about studying ACPs with different professional backgrounds collectively. These three areas are discussed in more detail.

9.4.1 Confirmatory theory

In relation to the ACP practitioners themselves, there is some support for theory suggesting that ACPs potentially more likely to come from demographic and cultural backgrounds that give them greater cultural awareness when providing health care in deprived communities. An outcome of this could be better use of social and community assets in the community when providing health care. There is also support for the idea that training placements in deprived communities prepare professionals for working in similar environments.

With respect to the structure and function of teams, there is support for theory around the building trust and respect between GPs and ACPs, and that without this trust and respect, clinical supervision discussions can be dysfunctional, harming practitioner confidence and limiting the quality of patientcare. There is also support that trust and respect within the reception and administration teams supports the integration of ACPs into clinical care through allocation of work. Indeed, the way that new roles are used within the team can affect their impact on patient care more broadly.

Population themes confirm that the public appreciate the increased in access to care, are generally satisfied whichever practitioner they see and develop the benefits continuity from ACPs as much as GPs. It is also suggested that key aspects of primary care (person-centred care, care co-ordination) can be supported by ACPs in the team.

Themes regarding the clinical supervision of ACPs in general practice teams are relate to those above. Theory that a lack of knowledge and familiarity with ACP roles can lead to outcomes that inhibit their integration into teams is supported and that professional defensiveness can act synergistically to produce this effect. There is also support that doubts about appropriate competence for generalist care make clinical supervision more challenging and that regulatory limitation to practice and time pressure exacerbate this.

9.4.2 New theory

There is also some new theory identified that has not been considered so far. Five new CMOCs were identified. Each of these is shown in the C-M-O diagrams in figure 22 and in tables 11-13.

Regarding practitioner background, there is a suggestion that the philosophy of the nursing profession provides ACPs from nursing backgrounds additional strengths to a standard over and medical approach that might lead to better healthcare for patients with chronic health problems and multiple conditions. Perhaps an as extension of this, it was also suggested that allowing ACPs the space to lead the development of services produces even greater benefit for patients through a less biomedical approach. Two new CMOCs were generated from this evidence PR17 and PR18.

There is also new theory the purpose of integrating of ACPs into teams might affect outcomes for patients. If the prime reason is to increase access to appointments for relatively simple presentations rather than to augment generalist care then the benefit of the ACPs to deprived populations may not fully realised. A new CMOC related to the team (T10) was generated from this.

Two potential new mechanisms were found regarding clinical supervision. One is that the ability of a GP to provide flexible clinical supervision conversations, simultaneously checking clinical judgement and supporting autonomous professional growth encourages the greatest contribution to ACPs within team. Related to this is the suggestion that a deeper induction conversation with ACPs that discusses philosophical thoughts about health, generalist care and previous professional background might lead to a greater contribution to patient care within the team. Supervision CMOCs SP12 and 13 were created.

9.4.3 Heterogeneity

The key cautionary note from the literature is whether it is appropriate to study ACP roles with different professional backgrounds as single group. This is because they may have different philosophical approaches to care and different expectations. My suggestion is that because this work looks at the *explanatory mechanisms* that support the integration of ACPs from different backgrounds to general practice teams, this is not as relevant to the mechanisms themselves as long as the different practitioner backgrounds are recognised in different *contexts* within individual CMOCs.
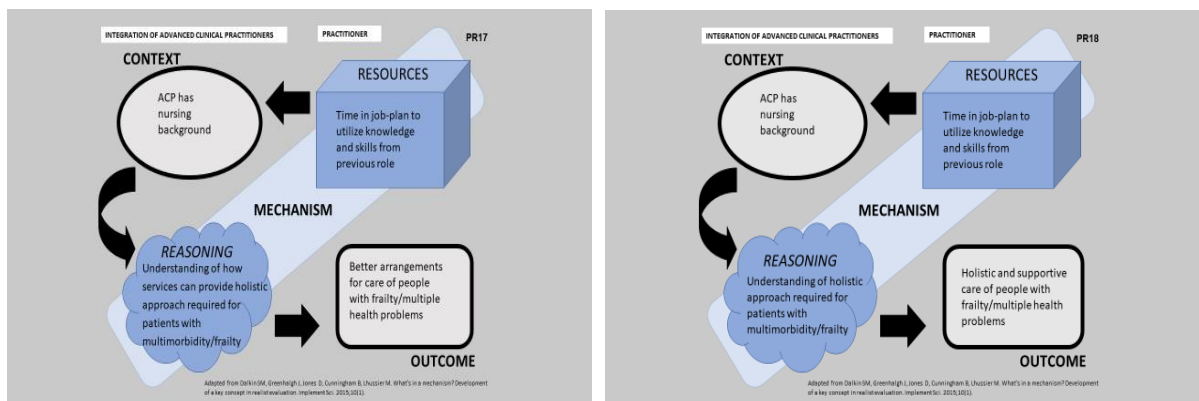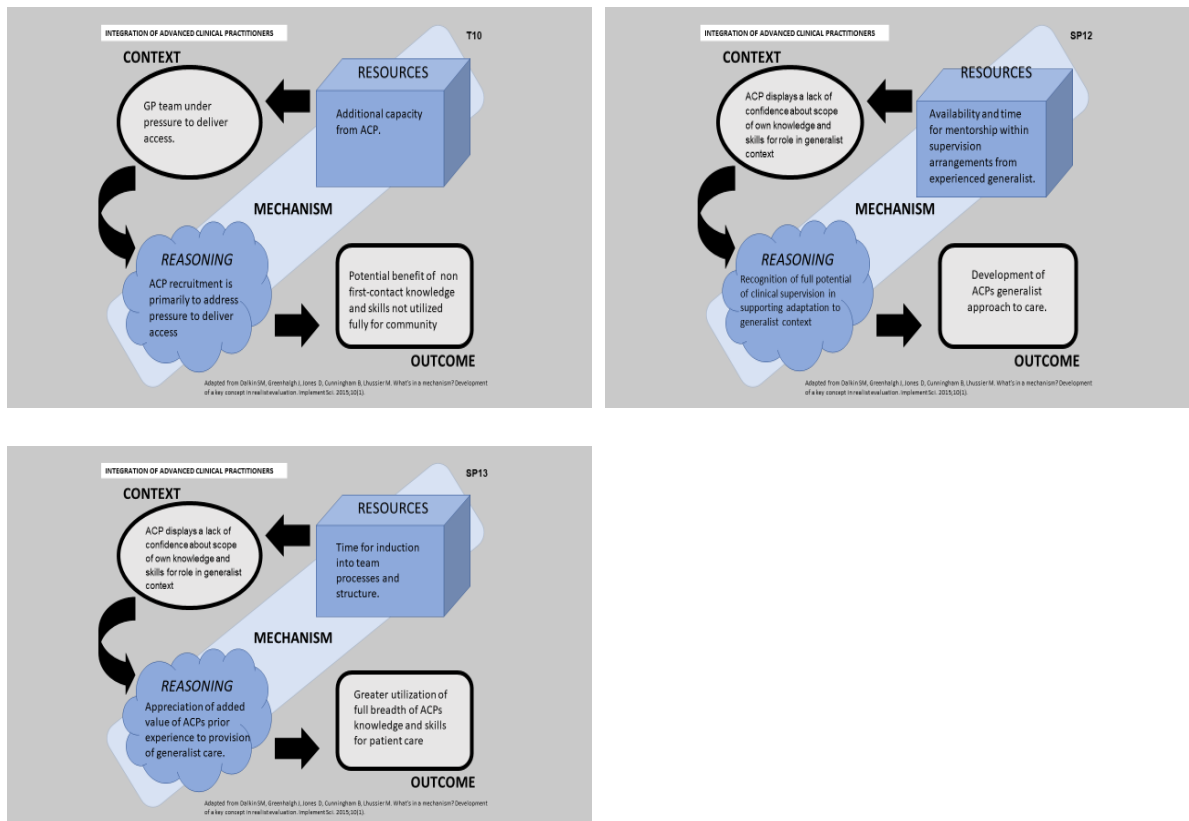
Figure 22 New potential context-mechanism-outcome configurations identified from the rapid realist review that had not been previously recognised.

9.5 CHAPTER SUMMARY

This rapid review provides a useful 'sense-check' on the theory developed through retroduction and through discussion with stakeholders. The literature seems to support both the background theory considered in relation to each of the four important areas identified and some of the individual CMOCs.

As previously described, the purpose of this part of the programme theory construction was not to search for and identify as much plausible theory as possible from the literature in the form of a full realist review. Instead it was to give some assurance to the programme that the theory generated through retroduction and discussion with stakeholders held some validity before testing.

The review did however introduce some interesting theory related to holistic care and professional background, suggesting that the holistic approach from nursing could complement a less holistic medical approach. Additionally there was suggestion that, if ACPs work-allocation was targeted solely at access and appointments, some of this benefit might be squandered. Finally, the role of a

more intensive period at the beginning of a relationship and flexible supervision approached could pay dividends in accelerating the integration and development of the ACPs.

This chapter ends part three of the thesis. The final 54 CMOCs generated during the process are shown in tables 11-14. As can be seen, this is a large and diffuse set of CMOCs, which we have established are operating in a complex intervention played out in many settings. Some additional consideration of scope is required to establish which area to focus the empirical testing of the theory generated. Part four begins with this further consideration of scope before the methods are established and the programme theory is tested empirically in the field. This work took place mostly during the COVID-19 pandemic.

Table 11 Potential Context-Mechanism-Outcome configurations in the initial programme theory centred on the practitioner joining the general practice team.

ID	CMO description: IF, THEN, LEADS TO STATEMENT
PR1	If the ACP originates from a similar community to the population served by the practice, this cultural 'capital' and a perception of providing much needed healthcare in that community leads to improved job satisfaction in new role (giving something back).
PR2	If the ACP originates from a similar community to the population served, this cultural 'capital' and patients sensing ACP recognises their situation and health care needs leads to them more readily accepting them as a trusted clinician.
PR3	If the ACP lacks confidence about scope of knowledge and skills for role in generalist context, time for supervision & reduced ACP anxiety about risk and safety of own practice leads to increased confidence in adapting to a more generalist approach.
PR4	If the ACP displays confidence about scope of knowledge and skills for role in generalist context, time released by reduced needs for supervision through supervisor's trust that ACP will seek help when required means ACP role is appreciated as having utility within team.
PR5	If the ACP is inappropriately confident about knowledge and skills for role in generalist context, gaps in knowledge and skills and supervisor's trust that ACP will seek help leads to near misses & inappropriate investigations and management.
PR6	If ACP has rights as a non-medical prescriber, a decreased number of interruptions of GPs time and a recognition of autonomy of ACP leads to acceptance of ACP as useful member of clinical team.
PR7	If ACP lacks rights as a non-medical prescriber, increased interruptions of GPs and an uncertainty about who holds clinical accountability for management leads to doubts that ACP as useful member of clinical team
PR8	If ACP role has statutory recognition in law, a mandatory professional register and employer confidence that ACP will have professional oversight leads to increased acceptance of ACP as member of clinical team.
PR9	If ACP has previous training in practical skills for primary care, these skills and employer confidence of ACP's utility leads to acceptance of ACP as member of clinical team
PR10	If ACP has previous training in practical skills for primary care, these skills and ACPs confidence about utility leads to increased ACP confidence and job satisfaction

PR11	If ACP has previous experience in a primary care, supervision from an experienced generalist clinician and an awareness of challenges of undifferentiated care leads to timely and appropriate requests for advice during clinical practice
PR12	If ACP has previous experience in primary care, supervision from an experienced generalist clinician and an awareness of challenges of undifferentiated care leads to appropriate referrals and investigations with respect to likelihood of significant findings.
PR13	If ACP has previous experience in primary care, time for reflection and mentoring and an awareness of importance of continuity and care co-ordination leads to development of a more person-centred approach.
PR14	If ACP has previous experience in primary care, time for reflection and mentoring and an awareness of importance of continuity and care co-ordination leads to ACP taking on greater advocacy role for patients during clinical practice.
PR15	If ACP has previous experience in primary care role, time for induction into team processes and structure and an understanding of how their own skills and competences can fit within team leads to improved confidence and job satisfaction
PR16	If ACP has previous experience in primary care role, time for induction into team processes and structure and an understanding of how their own skills and competences can fit within team leads to accelerated integration and utility of ACP within team
PR17	If ACP has previous experience in primary care role, time for induction into team processes and structure and an understanding of how their own skills and competences can fit within team leads to accelerated integration and utility of ACP within team
PR18	If ACP has nursing background, time in job plan to utilize knowledge and skills from previous role and an understanding of holistic approach required for people with multimorbidity/frailty leads to more holistic and supportive care of people with these problems.

Table 12 Potential Context-Mechanism-Outcome configurations in the initial programme theory centred on the supervisor and supervision process.

ID	CMO description: IF, THEN, LEADS TO STATEMENT
SP1	If there is shared responsibility for supervision within clinical team, a system for sharing information about ACP supervision and an appreciation of ACPs scope of knowledge, skills and role boundaries leads to appropriate utilization of ACP as resource for patient care.
SP2	If ACP displays confidence about scope of own knowledge and skills for role in generalist context, a lack of time for supervision from experienced generalist clinician and a trust that ACP will seek help when required leads to near misses / inappropriate investigation and management
SP3	If ACP displays confidence about scope of own knowledge and skills for role in generalist context, the availability and time for supervision from experienced generalist and trust that ACP will seek help when required leads to an accelerated integration and utility of new ACP to team
SP4	If supervisor lacks knowledge about scope of ACPs knowledge and skills for role in generalist context, time for supervision and a trust that ACP will seek help when required leads to near misses / inappropriate investigation and management.
SP5	If the clinical team is under extreme workload pressure to deliver access, a lack of time for supervision from experienced generalist clinician and a desire to meet demand for appointments leads to near misses / inappropriate investigation and management.
SP6	If the ACP needs to request advice during consultation with patient, information provided for population served regarding ACP role within team and a recognition of the availability of support as part of service quality leads to increased patient satisfaction in care provided
SP7	If the clinical team has transitioned to include large number of ACPs, peer-support from other ACPs and a perception of utility within team leads to Improved confidence and job satisfaction in new role.
SP8	If the ACP unsure about boundaries in new clinical role within primary care team Increased time required for supervision and a scepticism about ACPs utility within team leads to resistance to transition of clinical teams to use ACP roles
SP9	If the ACP is unsure about boundaries in new clinical role within primary care team, time for induction into team processes and structure and an appreciation of ACPs scope of knowledge, skills and role boundaries leads to supervisors' trust that ACP will seek help when required.
SP10	If the ACP is unsure about boundaries in new clinical role within primary care team, time for induction into team processes and structure and an appreciation of ACPs scope of knowledge, skills and role boundaries leads to improved ACP confidence and job satisfaction in role.

SP11	If the ACP displays a lack of confidence about scope of own knowledge and skills for role in generalist context, the availability and time for supervision from experienced generalist and an appreciation of ACPs scope of knowledge, skills and role boundaries leads to the greater integration and utility of ACP to team.
SP12	If the ACP displays a lack of confidence about scope of own knowledge and skills for role in generalist context, the availability and time for mentorship within supervision arrangements from experienced generalist and a Recognition of full potential of clinical supervision in supporting adaptation to generalist context leads to greater Development of ACPs generalist approach to care
SP13	If the ACP displays a lack of confidence about scope of own knowledge and skills for role in generalist context, the availability and time for mentorship within supervision arrangements from experienced generalist and a Recognition of full potential of clinical supervision in supporting adaptation to generalist context leads to greater development of ACPs generalist approach to care

Table 13 Potential Context-Mechanism-Outcome configurations in the initial programme theory centred on the practice team.

ID	CMO description: IF, THEN, LEADS TO STATEMENT
T1	If the clinical team already includes ACP roles, the addition of a new ACP and a perception additional peer-support between ACPs leads to a more coherent voice of ACPs within clinical team
T2	If non-clinical members of the team are unfamiliar with ACP clinical roles, time for team meetings to discuss ACP skill set and role boundaries and an appreciation of these leads to accelerated integration of new ACP to clinical team.
T3	If non-clinical members of the team are unfamiliar with ACP clinical roles, time for team meetings to discuss ACP skill set and role boundaries and a perception within non-clinical team that views are valued leads to increased acceptance of transition to include ACP roles.
T4	If non-clinical members of the team are unfamiliar with ACP clinical roles, time for team meetings to discuss ACP skill set and role boundaries and recognition of ACP skill set leads to increased acceptance of utility of ACP to clinical team
T5	If GP team is under pressure to deliver greater access to patients, additional capacity provided by ACP and the possibility of a reduction of workload leads to acceptance of ACP role as useful to clinical team
T6	If GP team is under pressure to deliver greater access to patients, additional capacity from ACP and an appreciation of the skill set and role boundaries within reception team leads to less stress on reception and other front-line non-clinical staff
T7	If GP team is under pressure to deliver greater access to patients, additional capacity from ACP and public appreciation of the skill set leads to greater patient satisfaction with service.
T8	If GP team is under pressure to deliver greater access to patients, the requirement to get patients seen overrides a consideration of the ACP skill set and role boundaries when utilising the additional capacity leads to ACP making inappropriate decision in investigation and management.
T9	If GP team is under pressure to deliver greater access to patients, additional capacity from ACP and the need for patients to be seen overrides the consideration about which clinician is most appropriate leads to increased stress and reduced job satisfaction for ACP
T10	If GP team is under pressure to deliver greater access to patients, additional capacity from recruited ACP is seen primarily as a way to address pressure for access meaning non-first contact knowledge and skills are not utilised fully for the community.

Table 14 Potential Context-Mechanism-Outcome configurations in the initial programme theory centred on the population service.

ID	CMO description: IF, THEN, LEADS TO STATEMENT
POP1	If population served is unsure of scope of knowledge and skills of ACP role, information for patients and meeting to discuss ACP and a desire for services to change to respond to workload and demand for access leads to acceptance of ACP role by population served.
POP2	If population has a high prevalence of multimorbidity and complex health problems, training for ACPs in managing medical complexity and an appreciation of ACPs ability to manage their complex health problems leads to acceptance of ACP role by population served.
POP3	If population has a high prevalence of multimorbidity and complex problems, lack of ACP knowledge and skills to manage medical complexity and patients trust in ACP's ability to manage their complex health problems leads to near misses and inappropriate investigation and management
POP4	If population has a high prevalence of multimorbidity and complex problems, lack of ACP knowledge and skills in managing medical complexity and a trust in ACP's ability to manage their complex health problems leads to excessive use of diagnostic investigation and referrals.
POP5	If population has a high prevalence of multimorbidity and complex problems, a lack of ACP knowledge and skills to manage medical complexity and a perception of this within population leads to repeated requests for appointments with other clinicians
POP6	If population has a high prevalence of multimorbidity and complex problems, a lack of ACP knowledge and skills to manage medical complexity and a perception of this within population leads to a lack of acceptance about ACP as a useful new member of clinical team
POP7	If population has a large unmet need for health care, ACP communication and consulting skills and a trust in ACPs ability to manage their health care problems leads to increased continuity of care for patients
POP8	If population has a large unmet need for health care, additional capacity from ACP and a relief in being able to access healthcare leads to acceptance of ACP and role by population served.
POP9	If Population has particular cultural component in its community, then any aligning cultural capital for the ACP and patients' perception ACP understands their situation and health care needs leads to acceptance of ACP and role by population served.

POP10	If population served has low levels of health agency and understanding of ACP role, tailored information for population regarding ACP role and trust in practice as provider of Primary Care services leads to high utilization of ACP appointments
POP11	If population served has low levels of health agency and understanding of ACP role, increased capacity from ACP and a perception that an appointment with ACP will deliver inferior care to that from a GP leads to requests for appointment with GP after ACP appointments.
POP12	If population served has low levels of health agency and understanding of ACP role, poorly tailored information for population regarding ACP role and a perception that an appointment with ACP will deliver inferior care to that from a GP leads to increased dissatisfaction with service provided by practice.
POP13	If population served has low levels of health agency and understanding of ACP role, knowledge within reception/triage team of ACP skill set and role boundaries and trust in practice as a provider of first-contact primary medical care leads to appropriate utilization of ACP as resource for patient care.

PART FOUR: SELECTING AND TESTING PROGRAMME THEORY

This part describes a further consideration on the scope of the research that concludes the focus of the empirical testing will be on clinical supervision. The methods are then described that will be used to test what mechanisms are likely to be operating within that particular area. It comprises three chapters.

Chapter 10 describes a mapping process used to decide what area of the programme theory was most practical and appropriate to 'concentrate the fire' of the research. It is concluded that will be on the clinical supervision conversations between the new practitioners and their general practice supervisors. To provide fuel for this concentration, the concept of clinical supervision in healthcare professions is introduced and explored more deeply.

Chapter 11 described the methods used for recruitment, data collection, data management and analysis. Ethics, patient participation, and any modifications to the protocol caused by the COVID-19 pandemic are described. Specific considerations about adaptations of standard methods for semi-structured interviewing and qualitative data analysis when undertaking realist research are discussed. The method of tracking the CMOCs identified in the initial programme theory is described.

Chapter 12 presents the results of the empirical phase of the research. A description of participants and practices is provided followed by themes relating to practitioner, population and team are provided to set the scene. The results of the analysis with respect to the CMOCs theorised with a focus on clinical supervision in the initial programme theory are described. Those CMOCs that were evidenced more strongly by the data are described, sometimes in an adapted form. New CMOCs are also described.

10 FURTHER CONSIDERATION OF SCOPE: CLINICAL SUPERVISION

In his essay, '*Nothing as practical as good theory*', Pawson (2003) describes how realist evaluators soon realise they cannot try to investigate '*the veracity of each and every programme theory*' and advise they should concentrate the '*evaluation fire*' of their empirical efforts on those areas vital to the programme theory in question (Pawson, 2003). In Realist Evaluation, Pawson and Tilley advise that practical considerations of the resources should also be considered (Pawson and Tilley, 2004). The RAMESES II realist reporting standards recognise these considerations are often part of a realist evaluation process (Wong *et al.*, 2017).

Chapter 6 considered the scope of the research with respect to professional backgrounds of the ACPs, geography and the potential impact on different communities. This chapter revisits considerations of scope from an additional two perspectives; policy gaps in the grey literature review and the practical availability and collection of data.

Section 10.1 reflects upon the potential theory gaps identified in part three and sets these against the main concerns of stakeholders. Clinical supervision is considered one area that may be most useful to explore.

Section 10.2 describes a process of mapping the potential CMOCs against the main areas in the programme theory. It concludes that clinical supervision is a pragmatic place to source rich qualitative data to evaluate the programme theory. This can be supported by interviews with practice managers to capture some idea of team context and some advisory patient participation.

Section 10.3 provides a brief introduction into clinical supervision in healthcare professions.

10.1 THEORY GAP

Revisiting the extent of the strategy and policy documents reviewed in chapter 7, it was noted that there appeared to be less discussion relating to two areas: the impact on maintaining the quality of generalist aspects of care (e.g. continuity, comprehensiveness) and clinical supervision.

Where there was discussion about quality of generalist care, these almost entirely consisted of cautionary representations from the general practice leaders and professional groups that the intervention may be detrimental to the wider experience of the public and to the functioning of the NHS. Where there was discussion about clinical supervision, there were concerns that there would

not be sufficient leverage within current standards and guidance to ensure NHS providers prioritised clinical supervision sufficiently for the new roles. There was also concern about the additional burden on GPs, that more information about the roles and that more supervision training was required.

This lack of discussion in designing the implementation contrasted with the areas considered most important to stakeholders, who saw clinical supervision as one of the most important areas that would help new ACPs support generalist care. The rapid realist review identified that skilful, flexible clinical supervision could be a key factor in supporting ACPs to maximise their contribution to teams.

This suggests there is a gap in developed theory on how to supervise new practitioners in a way that would help them integrate effectively into teams and support generalist care. It was therefore considered that the process of clinical supervision might be a useful area to focus on.

10.2 AVAILABILITY OF DATA

When considering scope in realist evaluation, Pawson and Tilley also suggest the final balance of methods often needs to consider the availability of data and the practicality of obtaining it (Pawson and Tilley, 2004).

10.2.1 Mapping

To better understand the range of CMOCs with respect to the complexity of practice teams, a conceptual Venn diagram was created that included all four of the main areas identified (population, practitioner, team, and supervision) to capture their relation to one another. The supervisor was added to the diagram, in recognition that they would be an integral part of a supervision process (shown in figure 23).
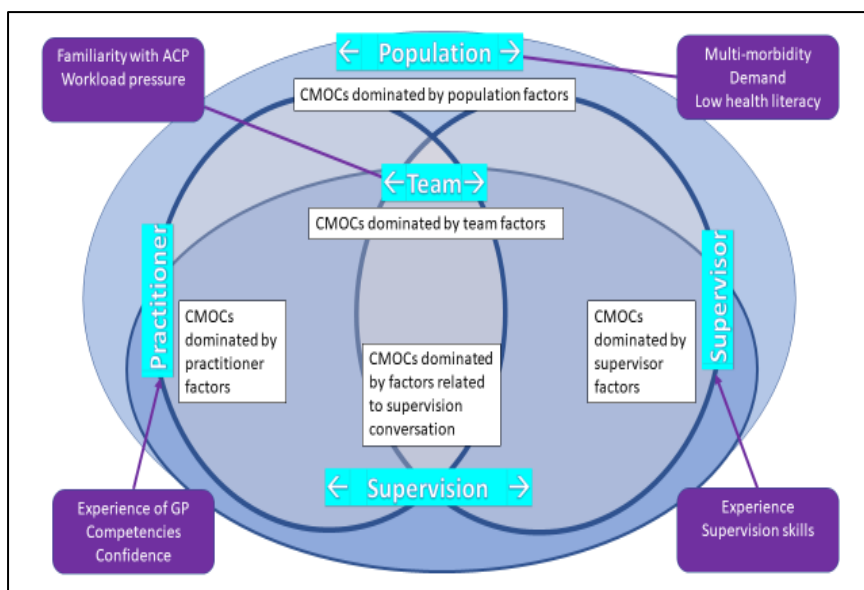
Figure 23 Conceptual Venn diagram for mapping the CMOCs identified in order to determine where to concentrate the fire.

The potential C-M-O configurations identified were then placed on this framework. This mapping was done by considering where relevant different contexts might best be appreciated and where data relating to the relevant outcomes might best be captured. This maximised the chances of observing demi-regularities between context and outcomes that could provide evidence for the mechanism in each CMOC. The process is described for two potential CMOCs, PR7 and POP1 and illustrated in figure 24.

PR7:   *if the ACP has previous training in practical skills for primary care (context), these skills and employer confidence of the ACP's potential utility (mechanism) leads to acceptance of ACP as member of clinical team (outcome).*

The likelihood of PR7 being present would best be assessed in a space where one could assess the contextual aspects of degree and scope of the practitioner's skills (by interviewing the practitioner) and establish the supervisor's acceptance of the ACP as part of their team and how much confidence in those skills contributed to this acceptance. This C-M-O configuration was placed according to the outcome in a space that included team and supervisor.

POP1:   *if the population served is unsure of scope of knowledge and skills of ACP role (context), information for patients and meetings to discuss these and desire for service configuration to change to respond to demand and access requirements (context) leads to acceptance of ACP role by population served (outcome).*

This would require some appreciation of the knowledge of the population served by the practice about ACPs and a discussion with them about how any information provided helped them accommodate the practitioner (through interviewing patients registered at the practice). An understanding of context and outcome would involve a discussion with patients. This CMOC therefore placed in the space that included population, but outside other areas.
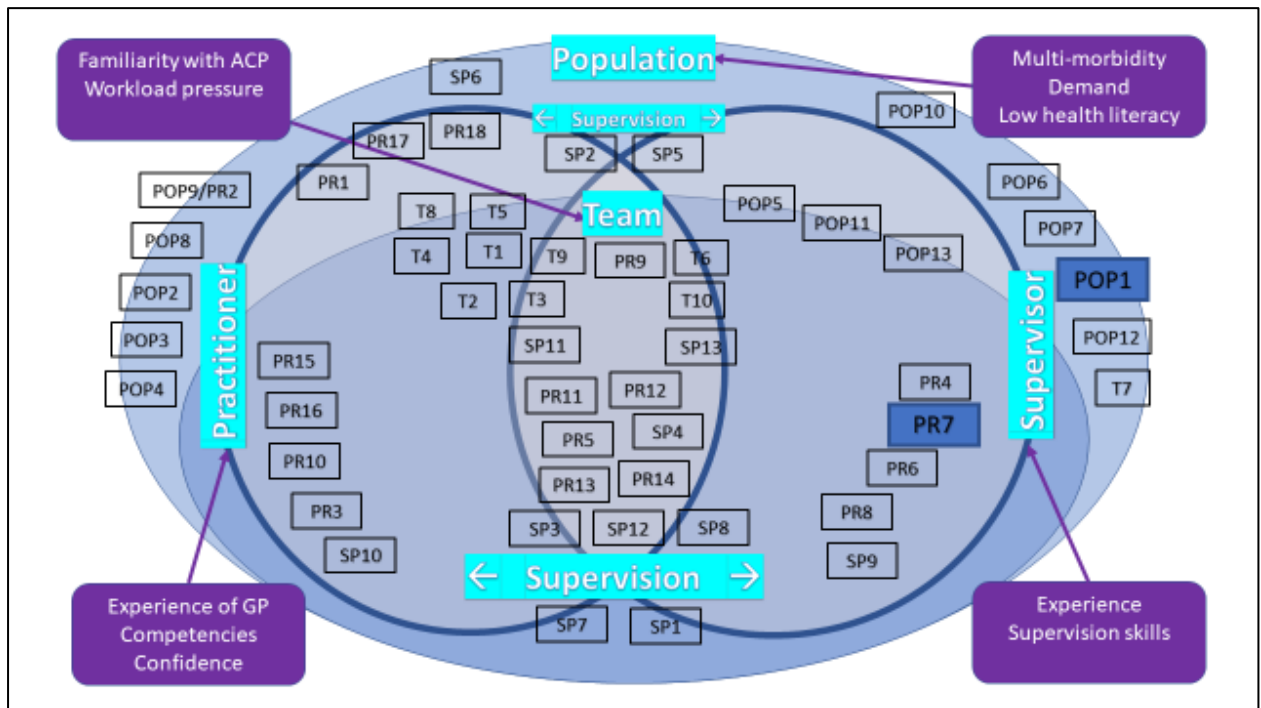
Figure 24 The mapping of the CMOCs on a conceptual of the programme theory with PR7 and POP1 highlighted in dark blue.

10.2.2 Practicality

After this exercise, thoughts turned to the practicality of obtaining data related to each area. Reflecting on the busy nature of general practice, the theoretical, ethical, and practical considerations of capturing sufficiently rich data from different members of primary care teams and from patient groups were set against the resources available within the context of this research: a PhD thesis led by a sole researcher. It was felt that one area that would have accessible data would be clinical supervision, and that through interviewing both the supervisor and supervisee (or clinical learner), relatively rich data would be available that might establish possible some regularity between context and outcomes.

The CMOCs to 'concentrate the fire' of the evaluation on are therefore those centred on supervision and circled in green in figure 25 below. These relate to supervision and directly to aspects of the practitioner's adaptation to a generalist role with the possibility of a deeper exploration.

An example:

SP3:   If ACP displays confidence about scope of own knowledge and skills for role in generalist context (context), the availability and time for supervision from experienced generalist and trust that ACP will seek help when required (mechanism) leads to an accelerated integration and utility of new ACP to team (outcome)

CMOCs considered possible to examine but with less intensity are identified in amber. These CMOCs related primarily to teams but also to other areas where even though mechanisms might be triggered, outcomes might be more difficult to assess, or be reported second hand.

An example:

POP4 - If population has a high prevalence of multimorbidity and complex problems (context), lack of ACP knowledge and skills in managing medical complexity and a trust in ACP's ability to manage their complex health problems (mechanism) leads to excessive use of diagnostic investigation and referrals (outcome).
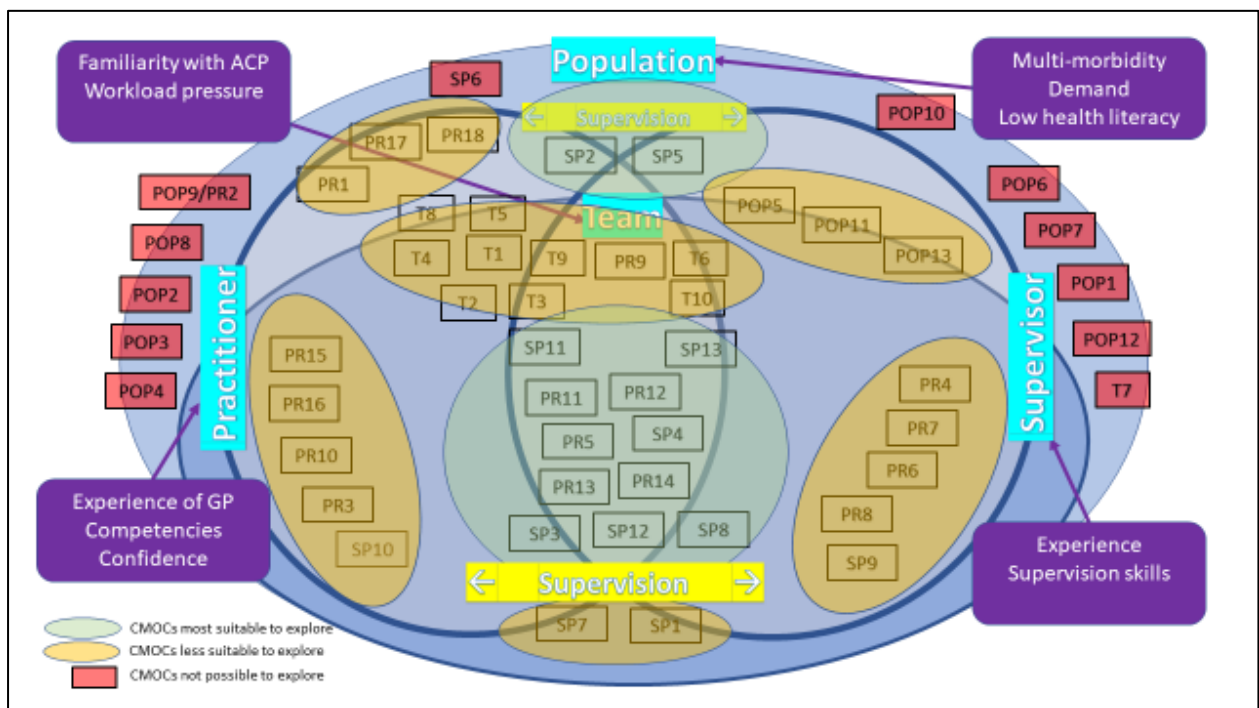
Figure 25 – Illustration of mapping process in relation to decisions about 'concentrating the fire' of the evaluation on clinical supervision.

Those CMOCs within the red boxes were considered to be probably outside the scope of the evaluation. These mostly relate to population aspects; perhaps less relevant to understanding the integration process and more difficult to access.

10.2.3   Section summary

Through this mapping process, it became clear that a potentially rich area to 'concentrate the fire' was on those CMOCs that relate to the process and structure of clinical supervision. The clinical supervision conversations were recognized as likely to be rich in both context (what the practitioner and supervisor brought to the conversation) and outcomes (reflections from both practitioner and supervisor on the development of the practitioners and their contribution to the care delivered). It was also considered an area where there was likely to be practical access in terms of capturing relevant qualitative data.

The research question was therefore adapted to take account of this decision.

What key mechanisms <u>within clinical supervision</u> support advanced clinical practitioners to integrate into general practice teams to provide generalist care?

To reflect this adaptation to focus on clinical supervision, the programme theory structure described in chapter 8 was reshaped to bring supervision to the centre, whilst maintaining the other areas identified by stakeholders. The population and primary care teams are seen as part of the broader situational backdrop that frames the supervision process. This allows the focus of the empirical data collection to remain on one manageable area whilst still considering the wider potential theory if it is evidenced. A simplified programme theory shows this re-structuring in figure 26.
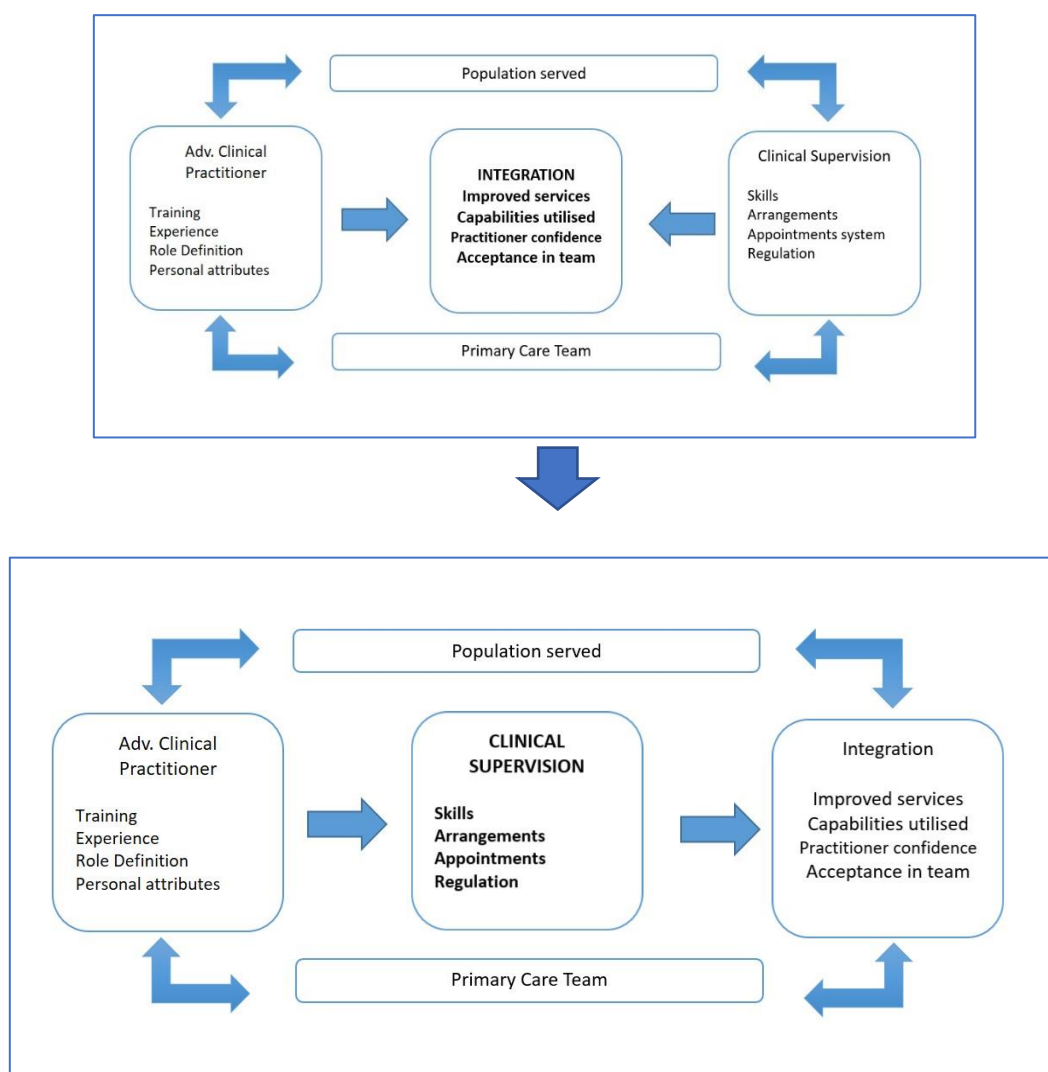
Figure 26 A simplified diagram of initial programme two (IPT2) to showing how the four areas relating to integration were re-shaped following a further consideration of scope prior to empirical data collection.

Having decided to 'concentrate the fire' of the evaluation on clinical supervision mechanisms, a little more understanding of the development of clinical supervision in the healthcare professions is required before data collection. The next section explores clinical supervision in more detail.

10.3 CLINICAL SUPERVISION IN THE HEALTH PROFESSIONS

10.3.1 Definitions of clinical supervision

Clinical supervision is a term used to describe a related set of processes whose exact nature is dependent on their individual context. It has different but connected roots stretching back to the beginning of the 20th century from midwifery & psychology and over the last thirty years, has gradually been introduced into other healthcare professions (Bryant, 2010).

Early definitions described clinical supervision as a collegiate process. In counselling & psychiatry Wright (1989) described supervision as 'a meeting between two or more people who have declared an interest in examining a piece of work' (Department of Health, 2000). In nursing, Butterworth described it as 'an exchange between practicing professionals to enable the development of professional skills' (Butterworth and Faugier, 1992). However, other educationalists recognised more hierarchical aspects of clinical supervision within professional groups more explicitly. For instance, as Bernard and Goodyear (2004) that clinical supervision could often also be one method of gatekeeping entrance to, or advancement in, a particular profession group (Bernard and Goodyear, 2004).

> *'an intervention provided by a more senior member of a profession to a more junior member or members of that same profession. This relationship … has the simultaneous purposes of enhancing the professional functioning of the more junior person(s), monitoring the quality of professional services offered to the clients, she, he, or they see, and serving as a gatekeeper for those who are to enter the particular profession* (Bernard and Goodyear, 2004)

As the medical profession adopted more formal processes of clinical supervision, an influential literature review used a definition of clinical supervision that specifically introduces feedback as part of the process and has now been widely adopted since;

> *'provision of monitoring, guidance and feedback on matters of personal, professional and educational development in the context of a doctor's care of patients. This would include the ability to anticipate a doctors strengths and weaknesses in particular clinical situations in order to maximise patient safety.'* (Kilminster and Jolly, 2000)

As this last example has become a commonly accepted understanding in the field of healthcare, this definition, adapted slightly to reflect the inter-professional relationship (practitioner replacing doctor) is used for this thesis.

Amongst these definitions, there is agreement that the essential functions of supervision are to support quality assurance, professional development, and personal wellbeing (Kilminster and Jolly, 2000). These three interdependent functions were first delineated following empirical studies of clinical supervision in social work by Kadushin (1976).

10.3.2 Models of clinical supervision

A widely accepted model of clinical supervision that builds on Kadushin's work is Proctors Functional Interactive Model (Proctor, 2008). Proctor drew upon Kadushin's work in describing supervision in

nursing but described each function slightly differently. Highlighting the interactive nature of the three, they are categorised as Normative (to promote and comply with policies and procedures, development of standards), Formative (to develop knowledge and clinical skills) and Restorative (to enable practitioners to better understand and manage the emotional burden).
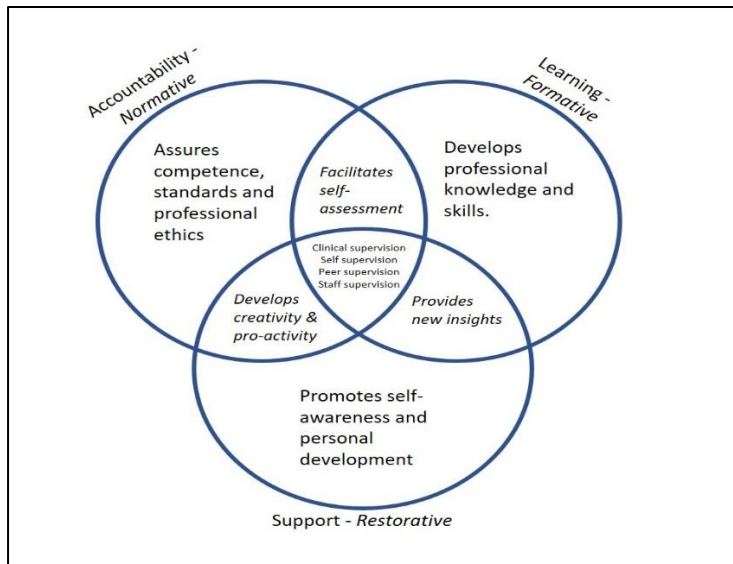
Figure 27 An adapted version of Proctor's model of supervision (Proctor, 2008)

To illustrate the interactivity; in the context of healthcare, the assurance of patient safety and standards of care for patient safety would be covered through both normative and formative functions. In addition to this interactivity, it is also important to establish that different forms of supervision lead to learning and development. Outside scheduled meetings for clinical supervision from a more senior practitioner, informal conversations with a range of more experienced practitioners also play a part, as well as important moments of peer supervision with other learners at similar stages.

Milne also describes three main functions but with a greater emphasis on supporting contribution to the delivery of services (Milne, 2007). The first is *quality control*, which includes an assessment of safe, ethical practice. The second, *maintaining and facilitating the supervisees' competence and capability* aligns more closely with Proctors formative domain. The third, *helping supervisees to work effectively* adds a function that is more relevant for the team and members of the public rather than the clinical learner.

Milne's categorisation represents more closely the initial programme theory that considers how clinical supervision supports ACPs to contribute successfully to service provision. It captures important and desirable outcomes for patients (such as improving access), of colleagues in primary

care teams (relieving the burden of workload). This suggests considering how clinical supervision maximises the effective contribution of the ACP to the delivery of care is required.

10.3.3   Clinical supervision for ACPs

The Advanced Clinical Practitioner (ACP) is a novel, inter-disciplinary role for the NHS developed with the aim of developing increased capacity. Each ACP trainee is required to have a designated clinical supervisor within their workplace in similar arrangements to those in postgraduate medicine, but these supervisors can come from different disciplines to the clinical learners. (Health Education Yorkshire and the Humber, 2015). The multi-professional ACP framework describes regular constructive supervision as critical for successful implementation of the role and accountability for standards (Health Education England, 2016a).

In 2021, minimum standards for what this supervision should look like were published (Health Education England, 2021a, 2021b). These standards mirror the requirements in postgraduate medical training. Described requirements are for a named, allocated educational supervisor to oversee learning more generally, and ongoing workplace supervision from supervisors on the ground, at least weekly, but daily in high-risk contexts. However, in contrast to almost all other supervision settings, clinical supervisors do not need to be from the same professional group. Rather, they must have expert knowledge for the area or practice in which they are supervising, experience of verifying competence and capabilities in that area (Health Education England, 2021a).

Guidance for the implementation of supervision for ACPs recognises the additional challenges of adopting an inter-professional approach; that supervisor roles may not map neatly to learners' roles and therefore a shared understanding of the learning journeys of clinical learners may vary (Health Education England, 2021b). For instance, it can make it more difficult to establish what clinical competencies a particular ACP should be competent in for the supervisor, especially as there are no nationally agreed competency frameworks for each profession role. Organisational factors relating to clarity of roles in terms of the support available are also critical in successful implementation of new ACP roles within teams. Adopting approaches for intra-professional supervision cannot be assumed the best approach for inter-professional supervision (Health Education England, 2021b).

10.3.4   Clinical supervision of ACPs in General Practice

An additional complexity in English primary care is the development of Primary Care Networks (PCNs). The new contract for primary care requires groups of practices serving between 30-50,000 patients to work together to deliver services (NHS England and British Medical Association, 2019). These PCNs receive funds to employ various ACP roles through the Additional Role Re-imbursements Scheme (ARRS). For an ACP taking on this role, the lack of clarity about accountability, responsibility

and arrangements for clinical supervision can be even greater. The level of clinical supervision required for these roles was lacking in any guidance relating to the ARRS roles and the responsibility for organisations to provide it remains a matter of clinical governance rather than a contractual requirement.

This suggests in the context of widening multidisciplinary teams, with non-medical ACPs taking on new roles and with different contractual arrangements, ensuring effective clinical supervision is available will remain a complex challenge. Concerns about vicarious liability, accountability and the time required will remain, with time most pressured in practices serving populations with higher demand. Studies of implementing skill-mix in primary care identify these challenges of providing adequate clinical supervision as an important barrier to implementation and practitioner development (Nelson *et al.*, 2019; Evans *et al.*, 2020). The 2018 position statement on the development of multi-professional teams from the Royal College of General Practitioners also recognises these concerns. It highlights the need for effective supervision to support new practitioners to adapt to primary care contexts, for GPs to be adequately trained to lead and supervise a wider practice team, and for additional resources to help make effective supervision standard practice (Royal College of General Practitioners, 2018)

10.4 CHAPTER SUMMARY

Further considerations of theory gaps and the practicalities of the evaluation identified that clinical supervision would be an appropriate place to 'concentrate the fire' of this evaluation. The initial programme theory for integrating ACPs has a significant component that relates to clinical supervision. A mapping process has provided an understanding of which of the potential CMOCs in the initial programme theory most closely map to clinical supervision.

Clinical supervision has a long history across the health and social care professions. It has always been introduced with the laudable aims of promoting safety and quality of care and supporting and developing individual practitioners, personally and professionally.

Until recently, supervision has almost exclusively been limited to single professional groups and the recent introduction of supervision for ACPs into clinical teams incorporates a new inter-professional element that alters the process significantly and suggests established methods from supervision within professions will not directly transfer. As the ACP role is introduced to support access and relive service pressure, understanding how supervision can supports the integration and contribution delivered from these new roles has added urgency. Theory related to the initial

research question posed in chapter 1 has been developed, explored with stakeholders, and checked against the literature. This 'concentration of fire' has set the scene for testing the programme theory in a way that will be useful and manageable.

11 METHODS

A chapter presents the methods developed for empirical data collection and a more detailed description of particular methods used that ensure that a critical realist approach is maintained to ensure CMOCs remain at the heart of the programme. Minor modifications that were put in place following the COVID-19 pandemic are also described.

Section 11.1 summarises the methods for the empirical phase of the programme. This is based on the protocol was used for ethics approval and a successful grant application from the Royal College of General Practitioner Scientific Board Grant. This protocol was written just prior to the start of the COVID-19 pandemic. Alterations to the sampling and data capture made due to the effects of the pandemic are described.

Section 11.2 explains particular approaches adopted to ensure that the methods adhered as closely as possible to realist methodological principles and ensure that the mechanisms and CMOCs identified in the initial programme theory were tested and tracked through the empirical work.

11.1 OUTLINE OF METHODS

This research method is outlined here. The full protocol used for ethics and grant applications is presented in appendix 4.

11.1.1 Research Objectives
A modified research question was described at the end of chapter 10.

> **What key mechanisms <u>within clinical supervision</u> support advanced clinical practitioners to integrate into general practice teams to provide generalist care?**

Given the methodology chosen, the research objectives were to explore context-mechanism-outcome configurations in the supervision arrangements for ACPs in General Practice teams via interviews with ACPs, their supervisors and practice staff. Key CMOCs related to clinical supervision and integration of new practitioners, particularly in GP teams working with deprived communities were to be identified.

11.1.2 Setting and Participants

The research took place across multiple NHS general practices, mostly from the Yorkshire and the Humber region, which have multidisciplinary clinical teams that include Advanced Care Practitioners from nursing, paramedic, or physician associate backgrounds.

General Practitioners actively involved in supervising a recently appointed Physician Associates, Paramedic or Advanced Nurse Practitioner and Physician Associates, Paramedics or Advanced Nurse Practitioners with less than three years' experience in general practice were included.

Though practice teams from practices who have recently appointed Physician Associates, Paramedics or Advanced Nurse Practitioners were also to be included, due to the pandemic, only practice managers were interviewed.

Practice identification

A list of general practices from major urban towns and cities across Yorkshire and the Humber region (Doncaster, Huddersfield, Hull, Kirklees, Leeds, Rotherham, Sheffield, and Wakefield) was compiled through publicly available data on NHS Clinical Commissioning websites.

Index of multiple deprivation scores were then obtained for the postcodes of each practice according to the 2019 IMD deprivation score on the Office for Health Improvement and disparities National General Practice profile webpage (*National General Practice Profiles - Data - OHID*, 2019). The list of practices was then organised to identify those practices in the highest quintile of deprivation scores nationally. Publicly available websites of all practices were then viewed to identify if they had advanced practice nurses, paramedics, or physician associates as part of their clinical teams and note any e-mail contact details available for practice managers.

11.1.2.1 Recruitment

A target of 15 paired interviews from GPs and ACPs (total 30 interviews) and six practice manager interviews were set as it was anticipated that this would achieve saturation on key themes and sufficient data for demi-regularities to be recognised, whilst allowing for maximum diversity.

Practitioners

Practice managers of practices in the highest IMD quintile were e-mailed over January and February 2021 with an invitation e-mail and a request that they pass this onto their clinical staff. A follow up e-mail was sent in May 2021. Information about the research was also circulated to practitioners involved in regional Deep End General Practice Networks, who all work in deprived communities, with contact details. Practices outside those in the highest quintile of deprivation were sent in e-mails in late May 2021 (where contact details were available). Information about the research was

also shared amongst ACP preceptorship schemes, and regional NHS primary care workforce networks with contact details.

Paired practitioner samples of a) the supervised ACP from an included professional background within three years of experience in the ACP role and b) the main GP providing supervision for that ACP were required. Where individual ACPs or GPs from particular practices volunteered without a designated leaner/supervisor pair, an additional targeted e-mail to attempt to pair these practitioners with a supervisor or leaner was sent directly to individual practices.

Recruitment was monitored, with the aim of purposefully sampling practices so at least two-thirds (10/15) of paired practitioners would be from those serving urban populations that are in the most deprived quintile nationally and that there was a balanced representation from each of the targeted professional groups.

Practice managers

Although the protocol had initially described six focus group interviews with practice management / practice team, due to the pandemic this had to be scaled back to interviews with practice managers alone. A separate invitation e-mail with information about the study was circulated to practice managers via regional NHS primary care workforce networks in May 2022 with a follow up e-mail in July 2022. There was no requirement for linkage between team sample and paired practitioner sampling.

Patient and Public Involvement

Members of the Sheffield Deep End PPIE group were invited to join advisory group meetings as part of the ongoing research process. These meetings were not recorded but notes were taken during and after each meeting to inform the analysis of the data. These were handwritten in a specific notebook used solely for that purpose. This Patient and public involvement PPIE followed the National Institute of Health Research INVOLVE Public Involvement guidance at https://www.invo.org.uk/posttypepublication/involve-briefing-notes-for-researchers/.

11.1.2.2 Consent and reimbursement

All interested practitioners and practice managers received an information sheet and consent form via e-mail, and were offered a telephone call from the researcher, before being invited for interview. Consent was obtained either in writing prior to, or verbally at the start of each interview, after checking the participant had read the information sheet and had had the opportunity to ask questions. The consent from is provided in appendix 5.

Participants were offered reimbursement for their time in line with NIHR national guidance (National Institute for Health and Care Research, n.d.). Clinical participants (both GPs and non-GP participants) were offered an on-line shopping voucher to the value of £80; practice managers and patient volunteers received a voucher worth £40.

11.1.3 Data capture and analysis

In-depth semi-structured interviews and focus group interviews using critical realist interview techniques (see section 11.2.1) were carried out with all participants to obtain as rich qualitative data as possible. All interviews were conducted remotely by the author via Google Meet. Interviews with paired ACPs and supervising GPs were conducted during 2021. Interviews with practice managers were conducted during 2022. Interviews with participant pairings were not carried out in any particular order. Interview data from a supervisor or supervisee was kept confidential from the other practitioner in each pairing.

Practitioners taking part in the interviews were also asked to fill in a brief google questionnaire to provide demographic details about themselves and some contextual information regarding their practice.

Data management

The virtual interviews were recorded on Google Meet, with participants being informed when recording commenced and stopped. Audio files were then downloaded onto a secure university server before the meeting recordings were deleted from the google platform. Each participant interview was then allocated a unique study identifier to anonymise the data.

Audio recordings were transcribed verbatim by one of two transcription services, either the School of Health & Related Research transcription services or Clayton Research Support. Where names or potentially identifying information was spoken by the interviewee, these were redacted from the transcripts.

Each transcription was checked for accuracy by the study author through listening through the whole recording and then uploaded to the NVivo software platform. This process also allowed familiarisation with the data and notes to be made on any key areas to interrogate the data with during analysis.

Data analysis

The qualitative data was analysed using NVivo using analysis techniques adapted for critical realist inquiry from the standard framework method (Spencer L *et al.*, 2003). This technique utilised inductive and deductive methods to identify the presence of demi-regularities that supported

CMOCs already identified in the prior programme theory, whilst also allowing the identification of new CMOCs (see section 11.2.2). Due to the duration of the study, different NVivo software releases were used. The majority of the analysis took place on NVivo 14 and NVivo 1.0.

11.1.4 Ethics and grant applications

Before the start of any empirical data collection, ethics agreement was obtained from the University of Sheffield Ethics Committee [Reference 036087 – 19.12.2020] and the Health Research Authority (HRA) approval [IRAS ID: 281424 - 20.12.2020]. A successful grant application to the Royal College of General Practitioners Scientific Foundation Board was made in 2012, primarily to support re-imbursement and transcription [SFB 2020-10 – 12.12.2020].

11.1.5 Adaptations to methods caused by COVID-19 pandemic.

Adaptations to the original protocol were required during the COVID-19 pandemic related to the method of capturing data and the way that the team dynamics were sampled. All interviews became virtual rather than face-to-face. Though the initial protocol described six focus groups with members of practice management and reception teams, given the national rules for NHS workers and impact of the pandemic on services, these were replaced with virtual in-depth semi-structured interviews with practice managers. The protocol was updated accordingly and where necessary ethical bodies were informed.

11.2 CRITICAL REALIST APPROACHES TO QUALITATIVE DATA

Though critical realist evaluation is method neutral, it often relies heavily on qualitative data to understand the thoughts and behaviour of individuals and groups during implementation of interventions and in particular contexts. There is debate about how qualitative research methods, designed for constructivist methodologies can provide support for critical realist research, which is established on the premise of and reality outside individual and subjective experience.

This section describes how different qualitative methods were adapted, drawing upon realist methods described in the literature, to maintain a theory driven approach according to critical realist principles.

11.2.1 Realist interview technique

Guidance and examples of realist interview technique are available (Pawson, 1996, 2013; Smith and Elger, 2012; Manzano, 2016; Trish Greenhalgh *et al.*, 2017; Mukumbang *et al.*, 2020; Verkooijen *et al.*, 2020). The common theme in this guidance is to keep the theory in question at the heart of the interview.

The interviews undertaken followed a topic guide designed according to realist interviewing principles. This involved a process of promoting reflection on the initial programme theory prior to, and during the interview, encouraging clarification of thoughts in those reflections, and channelling the interview to test and identify potential identify potential mechanisms (Pawson, 1996; Manzano, 2016; Trish Greenhalgh *et al.*, 2017).

The interview guide was developed using the mapping process described in chapter 10, which identified those CMOCs to focus on when exploring clinical supervision. Participants were sent the interview guide before the interviews, with an adapted illustration of the programme theory to encourage reflection and maximise the richness of the interviews. At the beginning of the interview, the programme theory was briefly described, and any clarifications dealt before particular areas were discussed. At this point, participants were asked to consider some of the identified mechanisms suggested in the programme theory, to reflect on whether they thought different elements were more or less valid or important.

At the end of the interview, space was provided for participants to comment on any of the other broader areas described in the programme theory as a backdrop to the clinical supervision (practitioner, practice team and population served). Copies of the consent form, the information provided, an example of the interview guide shared with participants and the interviewer guide provided in appendices 6-8

11.2.2   Qualitative data analysis

11.2.2.1   A methodological dilemma

In 'a realist approach to qualitative research', Maxwell (2012) explores the methodological dilemma of using methods designed for constructivist methodology for critical realist in some depth (Maxwell, 2012). However, as previously discussed in chapter 5, critical realists consider mental states, attitudes, meaning, and intentions are an essential part of reality that needs researching alongside natural phenomena to understand how the world works. A number of described methods have shown that, if analysed appropriately, qualitative data will usually be a rich source for critical realist enquiry (Jackson and Kolla, 2012; Maxwell, 2012; Pearson *et al.*, 2015; Dalkin *et al.*, 2021; Wiltshire and Ronkainen, 2021)

How can we identify causal mechanisms in qualitative data? As described earlier, patterns, recognised between contexts and outcomes suggest that particular contexts are triggering causal mechanisms. The identification of the relationship between the contexts that effect these causal mechanisms, and any resulting outcomes requires recognition of patterns within the data. These

patterns are described as 'demi-regularities', where certain contextual aspects cluster around subsequent outcomes, suggesting a causal mechanism exist

11.2.2.2 Identifying demi-regularities in qualitative data

There are no agreed methods in critical realist evaluation for how to identify demi-regularities in qualitative data (Gilmore *et al.*, 2019; Bergeron and Gaboury, 2020; Dalkin *et al.*, 2021). Different approaches are reported, with researchers making different pragmatic decisions in relation to the data available and how best to remain true to the critical realist paradigm (Byng, Norman and Redfern, 2005; Gilmore *et al.*, 2019; Wiltshire and Ronkainen, 2021). In realist evaluations, data is most often in the form of qualitative transcripts or case studies and realist reviews utilise qualitative data from the literature. A number of authors have recently described the use of NVivo software to support their analysis for both types of study (Jackson and Kolla, 2012; Abhyankar *et al.*, 2013; Gilmore, 2017; Papoutsi *et al.*, 2018; Gilmore *et al.*, 2019; Bergeron and Gaboury, 2020; Dossou *et al.*, 2020; Cooper *et al.*, 2021; Dalkin *et al.*, 2021; Rybczynska-Bunt *et al.*, 2021).

Most studies adopt an approach to analysis that combines deductive and inductive approaches, drawing upon established qualitative methods such as the framework approach (Richie and Spencer, 1994). Using such an approach allows the initial programme theory to help form the initial framework to the analysis, including potential CMOCs, whilst also supporting the recognition of demi-regularities within the data that suggest CMOCs previously unidentified.

However, significant differences arise in how the data is coded and how these demi-regularities are identified. A number of realist evaluations code the data separately, and individually, to contexts, mechanisms, and outcomes before manipulating these (Byng, Norman and Redfern, 2005; Jackson and Kolla, 2012; Bergeron and Gaboury, 2020). Demi-regularities that suggest CMOCs are then identified from this coding, usually working backwards (from outcomes to mechanisms and then to contexts). For instance, Byng et al (2005) describe how, after coding was completed, mechanisms and outcomes were compared to identify crossover MO dyads and from new MO codes. Working backwards again, these MO codes were compared with data coded to contexts to identified CMO configurations (Byng, Norman and Redfern, 2005). Bergeron (2020) also describes in detail how NVivo matrix queries can be utilised to create such dyads, but works the other way, initially creating CM dyads before using the same technique to create CMO configurations (Bergeron and Gaboury, 2020). Other studies have described a 'working backwards' approach without explicitly describing the process in as much detail (Jackson and Kolla, 2012; Pearson *et al.*, 2015).

Jackson and Kolla (2012) identified problems with this approach. These were related to concerns on the overreliance of subject naive analysts identifying connections and associations, but also in

handling the number of 'unique' CMO configurations that were generated. They describe how they abandoned the approach and recoding the data to look directly for CMO connections within the narrative data from interviewees. It was subsequently found that respondents could usually be seen to be naturally connecting contexts, mechanisms, and outcomes themselves. Taking this approach of identifying CMOCs directly from empirical data has a number of advantages. It captures CMOCs made by the participants themselves through their experience of an intervention, it allows outcomes to be specifically connected to contexts, which in turn allows the functioning mechanisms to be identified (Jackson and Kolla, 2012).

Other realist evaluators have since reported coding data directly when CMOCs are observed directly in the data (Gilmore *et al.*, 2019; Cooper *et al.*, 2021; Dalkin *et al.*, 2021).

However, there is still a balance required between a 'top-down' and 'bottom-up' approach. Some authors describe coding these CMOCs to pre-existing nodes, derived for instance, on the initial programme theory or on different 'actors' with the intervention (Abhyankar *et al.*, 2013; Gilmore *et al.*, 2019). Other authors have only grouped identified CMOCs to such themes after initial coding (Jackson and Kolla, 2012; Cooper *et al.*, 2021).

Having considered the above, an adapted framework method was considered most appropriate for this thesis, coding potential CMOCs directly from the data rather than separately. A significant amount of work had gone into generating the plausible CMOCs within the IPT followed by a further analysis to decide which area of the IPT to focus on. This had created a well-developed programme theory with potential CMOCs that clustered around a potential framework (practitioner background, supervisor, supervision etc). It also meant that the theoretical work done (collaboratively with stakeholders) in generating the IPT could be recognised more clearly in the analysis.

11.2.3   Adapted framework method for realist analysis.
The approach taken in this evaluation adopts a coding method that identifies CMOCs directly from the data in the form of 'if, then' statements in an adapted framework approach. Key elements of this approach particularly suit realist evaluation; its generative approach allows the development of new theory; constant comparative methods allow reconciliation and adjudication between different data from different settings and its systematic approach allows the rigour of the methods and validity of results to be judged by others. The CMOCs identified can then be grouped into important themes supporting the supervision process as they are identified.

The framework approach usually involves a process that moves dynamically and iteratively through the following stages: familiarisation, identification of a thematic framework, indexing, charting, and mapping & interpretation (Richie and Spencer, 1994). Each of these stages was covered during the

analysis, which was undertaken as interview data became available, so that ongoing analysis and data collections could iteratively inform each other.

11.2.3.1 Familiarisation

The first stage of familiarisation with both the transcribed data and the initial programme theory (IPT). Familiarisation of the qualitative data was achieved through listening to each interview whilst checking the accuracy of the transcription and making notes for later reference. As this was done contemporaneously as data became available and was analysed, this ensured the data remained familiar during the coding stages.

A second process of re-familiarisation of the CMOCs described in in the initial programme theory was important prior to starting analysis as described, each potential CMOC within the initial programme theory was labelled and described using and 'if, then, leads to' Dalkin's resource and reason approach to mechanisms (Dalkin *et al.*, 2015).

During this familiarisation process, where elements of these statements were closely resembling or others, the two were examined together to see if they had similar enough contexts, mechanisms, or outcomes to be considered interdependent or require modification. This was done via a systematic process of clarification and distillation using Pawson's Justification, Adjudication, Reconciliation, Consolidation method, a recognised tool in critical realist research (Pawson, 2012).

Juxtaposition, Reconciliation, Adjudication, Consolidation

Pawson broke down the idea of synthesising theory from realist research into four components: juxtaposition, reconciliation, adjudication, and consolidating (JRAC) (Pawson, 2012).

Juxtaposing separate explanatory accounts (e.g. in the form of 'if, then, leads to' statements) allows a comparison of similarities and differences. Reconciliation and adjudication can then take place between similarities or contradictions in the contexts, mechanisms and/or outcomes can then take place before appropriate changes are made. Whether that is a consolidation of the two, a refinement of one or the other, or whether they remain entirely distinct. A number of studies have described the use of JRAC process to consolidate explanatory accounts identified within their programme theory (Pearson *et al.*, 2015; Papoutsi *et al.*, 2018; Cooper *et al.*, 2021). In this instance, using the JRAC process helped familiarise and clarify the micro-theory in the researcher's mind, which in turn helped the process of indexing.

11.2.3.2 Identifying a thematic framework

As well as familiarising the researcher with the breadth of CMOCs that had mapped closely to the clinical supervision process, reviewing the mapping process also contributed to clarifying the framework in the form of the four initial areas identified and related potential CMOCs within them.

This framework was used to create nodes in NVivo at the start of the analysis. This initial coding framework then reflected the main structure of the initial programme theory but also incorporated the consolidated set of individual 'CMOC' statements. As the coding and analysis progressed, a new thematic framework developed for the clinical supervision process itself.

11.2.3.3 Indexing and charting

The next stage of analysis took place iteratively over several months as the data from the interviews became available. Data was coded (or indexed) against one of the CMOC codes or into broader themes within the initial programme theory. Much like that described by Jackson (2012), participants were often naturally linking context, mechanisms, and outcomes within the empirical data (Jackson and Kolla, 2012; Cooper *et al.*, 2021; Dalkin *et al.*, 2021). Where data collated around possible important contexts or outcomes these were charted accordingly. In some instances, they suggested new demi-regularities that indicated there were possible new CMOCs present. As this analysis took place as data was collected, though the interview guides were not edited, as further insight developed, this could be further explored through interviews.

11.2.3.4 Interpretation

As the analysis proceeded, the initial structure of the coding framework, a new thematic structure for the supervision process was developed, as CMOCs were seen to cluster around particular theory or as additional nuance within the original programme theory was identified. This new thematic structure and how the CMOCs were grouping together was discussed at supervisory meetings at least monthly at supervision and presented at several academic seminars for reflection with GP academics, ACP fora and workforce leads. The process was continued until the new coding structure was deemed to describe the themes and sub-themes of a refined programme theory for clinical supervision sufficiently and had identified and placed the most influential CMOCs within this new theory. All the CMOCs within this modified coding framework were then distilled and clarified, either by repeating a modified JRAC process, or in some instances, reviewing the CMOC carefully with what was in the data, if it suggested that modifying particular aspects would capture the CMOC more accurately. The coding framework is shown in appendix 8.

11.2.3.5 Tracking CMOCs through the analysis

As described in part three, each of the initial CMOCs identified in the initial programme theory was given an identifier (ID) code, depending on which of the four main areas it most closely related. A method of tracking the CMOC through the testing phase of the programme theory was created, to add transparency to the process but also to show which of the hypothesised mechanisms had been more or less validated through the testing process, and whether they had been modified at any stage.

The IDs of those CMOCs that were unaltered through the process remained the same. The IDs or CMOCs that were refined or modified, either through the JRAC or subsequently during the in-depth analysis of the empirical data were altered to reflect this with either a decimal point (altered through a JRAC process) or hyphen (altered through comparison with the data). CMOCs that were identified from demi-regularities the in the empirical data that has not been described at all in the initial programme theory are given three-digit ID codes.

An explanation of the structure of the identifier codes is summarised in table 15.

Table 15 Identifier coding for CMOCs in refined programme theory

ID structure	Explanation	Example
A5 (letter, number)	CMOC from IPT present supported by data	PR3 - If ACP doubts has capabilities for generalist context [C], sharing of clinical information gathered during supervision [M] reduces ACP anxiety [O]
A12.1 (letter, decimal number)	CMOC from IPT refined during JRAC and supported by data	PR9.1 – If independence in practice increases [C] ACPs contribution to care is recognised by supervisor [M] acceptance of ACP as useful member of clinical team [O]
A11-1 (letter, hyphened number)	CMOC from IPT supported by data in modified from	SP10-1 - If ACP is unsure about capabilities for generalist care [C], ease of availability of supervisor support [M] leads to ACP trusting supervision environment [O].
A101 (letter, three-digit number)	new CMOC supported by data - not described in IPT	SP106 - If ACP has experiences in general practice setting [C] reflection on own practice and patient narrative [M] adaptation of approach with respect to medical complexity & continuity [O]

11.3 CHAPTER SUMMARY

This chapter outlines the methods for the empirical testing of the initial programme theory through qualitative data from supervisors, ACPs and practice managers. With such a pluralistic approach to qualitative methods in critical realist research, there is no 'one-size-fits-all' guidance approach to how to maintain rigour throughout this part of the research. Researchers have made pragmatic

choices, balancing the perceived benefits and sacrifices in maintaining an approach that is theory driven and seeks to develop explanatory theory related to the interventions.

The RAMESES II guidance for reporting realist evaluation recommends that, whatever decisions are made in this regard, these should be explicitly documented and justified in reporting the research in order for them to be held up to critique in terms of how they support the findings and their generalisability (Wong *et al.*, 2017). Section 11.2 provides an explanation for how standard methods of qualitative data capture and analysis were adapted to maintain a realist approach and maintain a theory led approach. It explains how the interpretation of the data allowed a more focused programme theory for clinical supervision to be understood within the broader themes described in the initial programme.

12 RESULTS

This chapter presents the results of the programme theory testing phase of the research.

Section 12.1 presents details of the participation practitioners and practices. Demographic data on the ACPs and GPs is provided along with comparative demographics across supervision pairs. As described in chapter 2 and chapter 10, the research purposively adopted a focus on teams that provided care for urban deprived populations. Data on the deprivation of practices involved is provided.

Section 12.2 presents the main results of the qualitative analysis focused on the clinical supervision process. The evidence identified for the existence of any generative mechanisms described in the IPT is described, along with new mechanisms identified directly from the data itself. The mechanisms discovered cluster into six main themes, which are presented in turn. Consideration of the strength of the evidence for particular mechanisms is described, where important. These themes inform the refined programme theory for clinical supervision described in chapter 13.

Section 12.3 describes themes and mechanisms identified relating to the other three areas (population, practice team and practitioner). This serves as a reminder that the clinical supervision process will be taking place amongst a complex environment within each practice.

12.1 PARTICIPANTS

12.1.1 Advanced clinical practitioners' characteristics

Thirteen advanced clinical practitioners were recruited to the study representing the professional groups targeted in broadly equal proportions; five (38%) were Physician Associates (PAs), four (31%) Paramedics and four (31%) Nurse Practitioners (NP). Eight (62%) identified as female and five (32%) as male. The average age in years of PA ACPs (median=28; range 25-49) was less than ACPs from other backgrounds: Para ACPs (median=43; range 36-53); Nurse ACPs (median=43; range 38-47).

All professional groups had both male and female participants. Ten of the thirteen identified as White British (77%). The three participants identifying differently were all PAs, with one each identifying as British Asian, British Indian, and African. ACP practitioner's ages varied between 25 and 53 years.

Time in their advanced clinical practice role varied between 0.5 to 3 years. Participants' years since their first qualified health care roles varied considerably (0.5-27 years). The years of experience since first qualification in professional role differed between PA ACPs and the other professional groups:

PA ACPs (median=2; range 0.5-2), Para ACPs (median=12.5 range 7-27), Nurse ACPs (median=19; range 14-25). Two of the five PAs had gone straight into these current posts in General Practice without any previous experience in other settings after qualification.

Participants reported variable supervision arrangements within their practice settings. Two ACPs identified as having a continuous supervisory relationship with a single GP (one NP and one PA). The majority (10/13; 77%)) described an identified lead GP but had multiple supervisory relationships as daily debriefs were carried out by three or more GPs. One PA was not able to recognise a lead supervisor and described their supervision coming from the on-call GP on each day. Only the PAs reported that they had been supported through some form of external preceptorship support. Other practitioners had had no such external support but one paramedic from a very large practice described some monthly internal support meetings e.g. for nursing and advanced clinical practice roles.

The number of advanced practice roles in the participant's clinical teams varied considerably. Two practitioners, who were both PAs, reported they were the only ACP practitioner within their particular practice (though one explained there was NP training as an ACP at a different practice in the network). Two practitioners had one other ACP role in the practice but nine out of 13 (70%) had several ACPs within their clinical teams from different professional backgrounds; some of these included pharmacists, physiotherapists, and specialist mental health roles. Table 16 shows relevant data regarding the ACPs recruited.

12.1.2 General Practitioner characteristics.

Twelve out of the thirteen identified paired supervising GPs were recruited. After expressing and interest, the GP originally identified to pair with ACP7 did not respond to e-mails and took no part in the study. The age range of supervising GPs was between 33 and 56 years and the number of years since qualification as a GP also varied considerably (2.5–25 years). Eight of the twelve identified as White British (67%) with the other four identifying as Singhalese, Indian, British Romanian and Mixed. The reported length, and form of the supervisory relationships within the practice corresponded with that reported by the paired ACPs.

Six of the 12 (50%) were registered GP clinical supervisors with the General Medical Council and therefore would have had training in postgraduate clinical supervision (i.e. giving feedback, debriefing). All GPs reported that, in addition to the paired ACP, they had at least one other supervisory relationship. Three reported these were with GP specialty trainees only, but nine out of 12 (70%) had supervisory relationships with multiple clinical learners from different professional groups, including medical students, foundation doctors, GP specialty trainees, and advanced practice

roles from various professional backgrounds, including pharmacists and physiotherapists. Table 17 shows relevant data regarding the GPs recruited.

12.1.3   Practice characteristics

Practice size varied considerably. The smallest practice had 4300 registered patients, six practices (46%) had between 6000 and 8000 registered patients and four (31%) between 1400 and 1800 patients. The remaining two practices were considerably larger with list sizes of over 20000 registered patients. One of these was a university health service, with a particular demographic of patients, the other a large network with multiple sites. The unpaired ACP worked at this large network.

Five of the 13 (38%) practiced had Index of Multiple Deprivation (IMD) scores in the highest quintile on the 2019 data (*National General Practice Profiles - Data - OHID*, 2019). The IMD score defined in detail in chapter 6. The remaining eight practices were distributed equally amongst the other four quintiles (two per quintile).

12.1.4   Practice manager interviews – practice characteristics

Four practice managers (PMs) were recruited for the 'contextual' interviews. Two of these were from practices not represented in the previous supervisory interviews. All PMs managed practices with at least two advanced practitioners from across the professional spectrum but none employed paramedics in these roles. Practice IMD scores for the PM interviews indicated one practice fell into each of quintiles 1-4 (with one being the most deprived quintile). No practice was in the most affluent quintile.

12.1.5   Paired sample characteristics

The relative demographics of ACPs and GP pairings also varied considerable across the group. There was no particular pattern in terms of gender balance or ethnicity between clinical leaner and supervisor. However, with respect to age, in six out of 12 (50%), the ACPs were supervised by GPs older than they were, though this was sometimes only by a few years. In terms of years of clinical experience since first qualification, six of the 12 paired ACPS (50%) had more years' experience as a frontline practitioner than their supervisor had as a qualified GP. These two groups were different. However, data was not collected on the number of years since qualification as a doctor and so direct comparisons of years experienced as a registered practitioner cannot be made. Given the small number of participants, median and mean valued are not provided but general demographics related to the paired samples are given in table 18. This age/experience relationship is illustrated in figure 28 below.
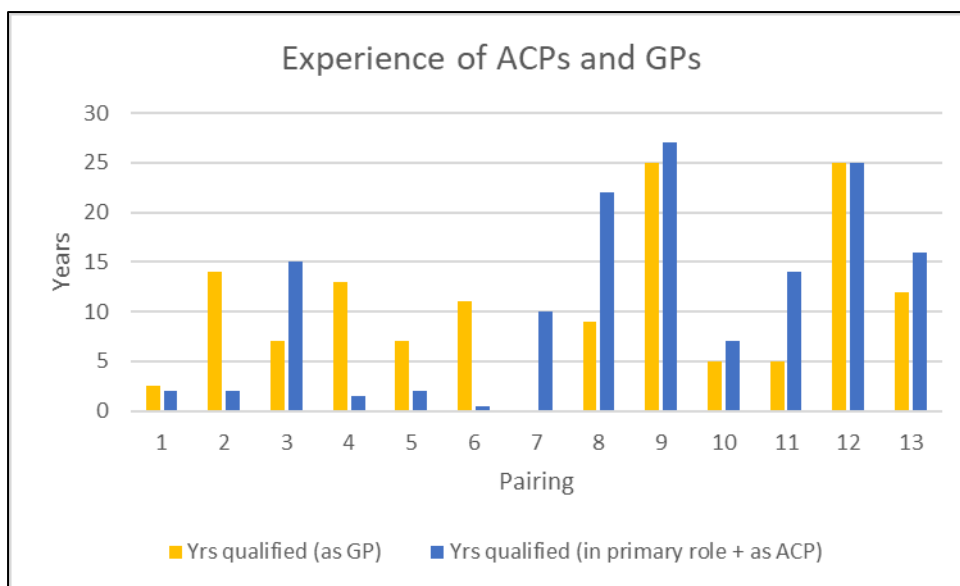
Figure 28 Bar chart illustrating the relative experience of the supervisors since qualification as a GP and the ACPs since primary qualification.

12.1.6 Section summary

Amongst the ACPs recruited, ACPs from a PA background were generally younger and had been qualified for a much shorter period. PA ACPs were also the only professional group that described their ethnicity other than White British. The GPs recruited also had wide range in years since qualification as a GP, some were within their first few years. The majority identified as white British. Seven of the thirteen practices involved were serving urban populations in the highest two deprivation quintiles. In terms of supervision and support arrangements, only the PA ACPs described any form of external organised preceptorship and all but two of the practitioners describe receiving supervision from one or other GP in their practice. There was no particular pattern in the number of other available ACPs within practices nor in the types of ACP with relation to deprivation quintile. The characteristic of the pairings only reflected the different years in age and experience between the PAs and the other professional roles, with some GPs supervising ACPs from other roles who had many more years of clinical experience and who were often older. .

Table 16 Advanced care practitioners recruited
Key: PA – physician associate; Para – paramedic; ANP – advanced nurse practitioner, MSK – physiotherapist; Pharm – pharmacist; MHN – mental health nurse.

ID	Role	Age (yrs.)	Gender	Ethnicity	Years qualified.	Time in post (yrs.)	Preceptorship	Supervision arrangements	Other ACP roles in practice	IMD Quintile	Size
ACP 1	PA	21-30	Male	White British	<5	2	Yes	On call GP supervises each day	1	2nd	<=6000
ACP 2	PA	31-40	Female	White British	<5	1	1st year only	One main supervisor	2	1st*	<=6000
ACP 3	Para	41-50	Female	White British	6-15	2	None	Multiple debriefing GPs with two lead supervisors	None	2nd	7000-10000
ACP 4	PA	31-40	Male	British Asian	<5	1	Yes	Multiple debriefing GPs with one lead supervisor	2	1st	7000-10000
ACP 5	PA	21-30	Male	British Indian	<5	0.5	Yes	Three debriefing GPs with one lead supervisor	1	3rd	>10000
ACP 6	PA	21-30	Female	African	<5	0.5	Yes	On-call GP each day with one lead supervisor	1	1st	>10000
ACP 7	Para	31-40	Female	White British	10	3	No	Whoever is around with one lead supervisor	3	3rd	>10000
ACP 8	Nurse	41-50	Female	White British	>15	1	No	Five debriefing GP with one lead supervisor	5	1st	7000-10000
ACP 9	Para	> 50	Female	White British	>15	3	In practice (mthly)	Multiple debriefing GPs with one lead supervisor	7	5th	>10000
ACP 10	Para	31-40	Male	White British	6-15	3	No	Multiple debriefing GPs with one lead supervisor	6	5th	>10000
ACP 11	Nurse	41-50	Female	White British	6-15	2	No	Multiple debriefing GPs with one lead supervisor	1	1st	7000-10000
ACP 12	Nurse	41-50	Male	White British	>15	1.5	No	Up to 20 GPs across network with one lead supervisor	3	4th	7000-10000
ACP 13	Nurse	31-40	Female	White British	>15	2	No	Lead GP supervisor plus experience ANP	7	4th	>10000

(estimated from practice postcode on WIMD maps https://datamap.gov.wales/maps/new?layer=inspirewg:WelshIndexOfMultipleDeprivationWIMD2019#/)
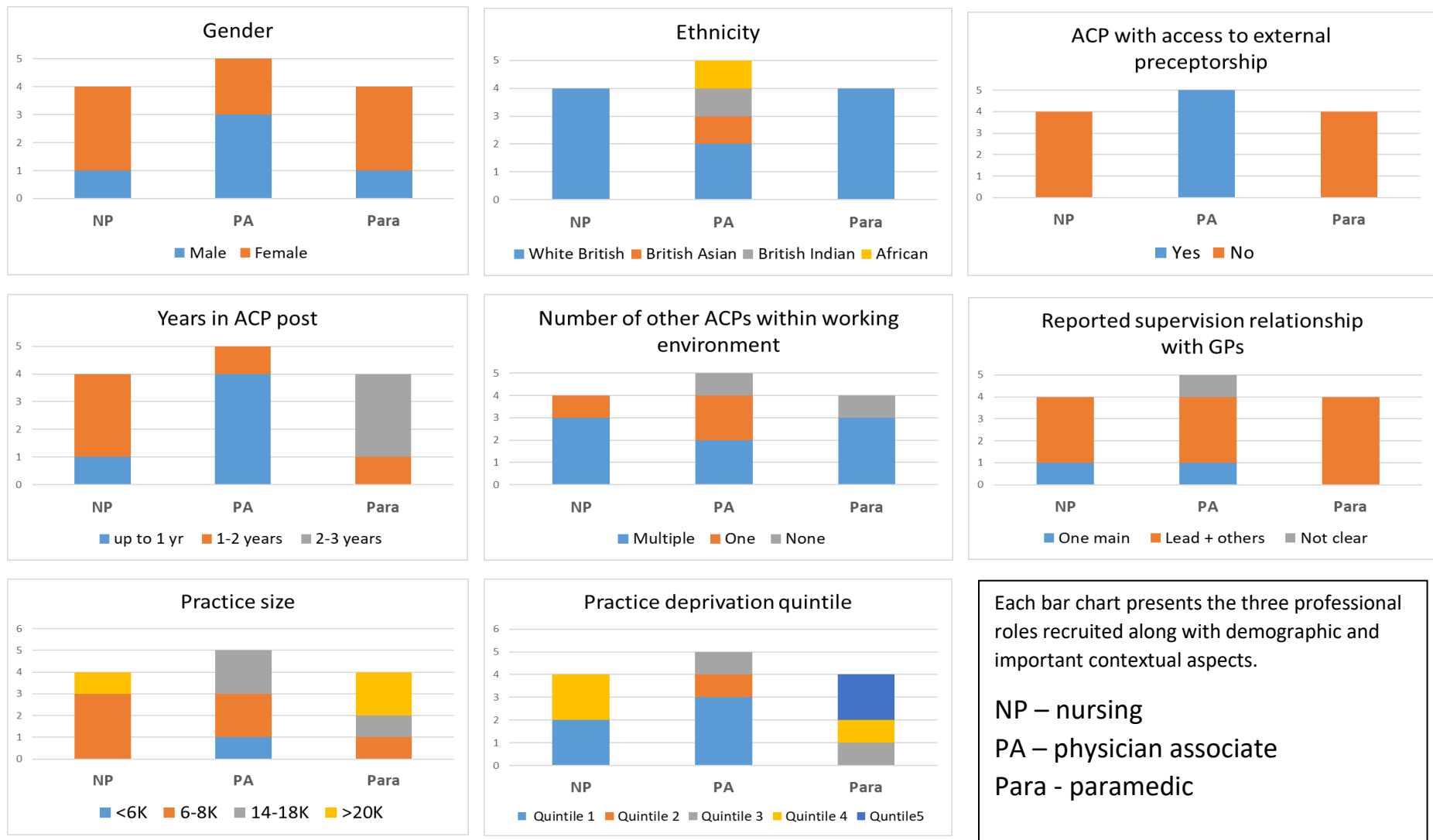
Figure 29 Illustrating the different demographics, supervision arrangements and practice characteristics for the ACPs recruited from each professional role.

Table 17 General Practitioners supervisors recruited with demographics, professional experience, and supervisory relationships.

ID	Age (yrs.)	Gender	Ethnicity	Trainer	Years qualified as GP	Period of supervision (yrs.)	Supervision relationship with ACP	Other supervisory relationships	Other ACP roles in practice (n)	IMD Quintile	Reported List Size
GP1	31-40	Male	Singhalese	No	< 10	2.5	Shared with others equally	Med stud, FY2	1	2nd	<=6000
GP2	41-50	Female	Indian	No	11-20	1	Sole supervisor	Med stud, ANP	2	1st*	<=6000
GP3	31-40	Male	White British	No	< 10	2	Lead supervisor with others	Med stud, PA stud, GP trainees	None	2nd	7000-10000
GP4	41-50	Female	White British	Yes	11-20	1	Lead supervisor with others	GP trainees	2	1st	7000-10000
GP5	31-40	Female	British Romanian	Yes	< 10	0.5	Lead supervisor with others	GP trainees	1	3rd	>10000
GP6	41-50	Female	White British	Yes	11-20	0.5	Lead supervisor with others	GP trainees	1	1st	>10000
GP8	41-50	Male	White British	Yes	< 10	1	Lead supervisor with others	Med Stud, GP trainees,	5	1st	7000-10000
GP9	> 50	Male	White British	No	> 20	1	Shared with others equally	Med stud, FY2, GP trainees, ACP (all)	7	5th	>10000
GP10	31-40	Female	White British	Yes	< 10	3	Lead supervisor with others	GP trainees, 3 ANPs, Para's,	6	5th	>10000
GP11	31-40	Male	Mixed	No	< 10	2	Shared with others equally	Med stud, GP trainees, FY2, ANP	1	1st	7000-10000
GP12	> 50	Female	White British	Yes	>20	1.5	Sole supervisor	Med stud, 2 GP trainees, ACP, Pharm	3	4th	7000-10000
GP13	31-40	Female	White British	No	11-20	2	Lead supervisor with others	2 Pharm	7	4th	>10000

(estimated from practice postcode on WIMD maps https://datamap.gov.wales/maps/new?layer=inspirewg:WelshIndexOfMultipleDeprivationWIMD2019#/)

Table 18 Showing demographic characteristics of ACP and GP supervision paired after recruitment
Key: PA – physician associate; Para – paramedic; ANP – advanced nurse practitioner.

Pairing	ACP Role	Age	Gender	Identified ethnicity	Years qualified in primary role	Paired GP	Age	Gender	Identified ethnicity	Years qualified	Trainer
ACP 1	PA	21-30	Male	White British	<5	GP1	31-40	Male	Singhalese	< 10	No
ACP 2	PA	31-40	Female	White British	<5	GP2	41-50	Female	South Indian	11-20	No
ACP 3	Para	41-50	Female	White British	6-15	GP3	31-40	Male	White British	< 10	No
ACP 4	PA	31-40	Male	British Asian	<5	GP4	41-50	Female	English	11-20	Yes
ACP 5	PA	21-30	Male	British Indian	<5	GP5	31-40	Female	British Romanian	< 10	Yes
ACP 6	PA	21-30	Female	African	<5	GP6	41-50	Female	White British	11-20	Yes
ACP 7	Para	31-40	Female	White British	10	No paired GP					
ACP 8	Nurse	41-50	Female	White British	>15	GP8	41-50	Male	White British	< 10	Yes
ACP 9	Para	> 50	Female	White British	>15	GP9	> 50	Male	White British	> 20	No
ACP 10	Para	31-40	Male	White British	6-15	GP10	31-40	Female	White British	< 10	Yes
ACP 11	Nurse	41-50	Female	White British	6-15	GP11	31-40	Male	Mixed Other	< 10	No
ACP 12	Nurse	41-50	Male	White British	>15	GP12	> 50	Female	White British	>20	Yes
ACP 13	Nurse	31-40	Female	White British	>15	GP13	31-40	Female	White British	11-20	No

12.2 MECHANISMS WITHIN THE CLINICAL SUPERVISION PROCESS

This section presents the main findings of the focused empirical work on clinical supervision within this realist evaluation. Mechanisms (in the form of CMOCs) identified through demi-regularities that relate to the clinical supervision process itself are presented. This includes those experienced within the direct supervision of an ACP by a supervising GP but also some relating to aspects of supervision the ACP derives from discussions within the team and with peers. Where the identification of demi-regularities fitting mechanism is less strong this is discussed.

As described in the methods section 11.2.3, as the analysis took place, the CMOCs were clustered into new themes relating to the supervision process as they were identified. These were:

- Establishing a sense of safety.
- Developing mutual trust.
- Sharing clinical reasoning and thinking.
- Promoting reflection through feedback.
- Allowing opportunities for self-direction
- Promoting collaboration.

The mechanisms identified in the clinical supervision process are therefore presented according to these six supervision themes. At the end of the evidence relating to each theme, a table shows all the CMOCs from that theme along with a figure illustrating any suggested interdependences between them. Where there are suggested interdependencies between mechanisms in one supervision theme and another, these are described in the main text. Chapter 13 shows how these six themes form the structure of the revised programme theory for clinical supervision.

12.2.1 Establishing a sense of safety

This set of CMOCs relates to the levels of anxiety experienced by participants. A fundamental condition that seemed to promote clinical learning throughout was when those involved had confidence the clinical supervision processes were safe in terms of patient care. It was recognised that there are always risks in health care and the likelihood of any one individual being held responsible for significant patient harm or unsatisfactory care needed to be at an acceptable level.

The ACP needed to feel that they were not going to be asked to make clinical decisions for which they were not qualified. The supervisor needed to be sure that the ACP had a minimum degree of clinical skills, particularly in gathering, describing, and recording clinical information. They also wanted to see that the ACP had an idea of the different context of primary care if they had not worked in the environment before. Particularly in the importance of the need to 'safety-net' (safety-netting is the process described in clinical care where patients are provided with information on when to contact healthcare services again if the progress of the illness deviates from that expected or particular new symptoms are experienced).

The wider team needed to have confidence that the arrangements for supervision were safe and secure, partly to help re-assure and explain to the public when appointments were made. Patients seemed to appreciate that clinical supervision was appropriate and promoted safe management of their problems.

CMOCs relating to establishing safety are presented according to each of these stakeholders: clinical learner, supervisor, team-member, and patient.

12.2.1.1 Learner sense of safety

Two CMOCs mechanisms were identified that relate to creating a sense of safety and reducing learner anxiety, particularly early in their supervision relationship and transition to their new role. These were the opportunity to 'hand-over' the responsibility for difficult cases to supervisors through debrief and supervision and a re-assurance that they were protected from seeing complex cases that meant that they continually felt out of their depth.

Handing over information and responsibility

When ACPs were anxious about their abilities to make the appropriate management plan for patients, 'handing-over' the information and 'off-loading' the responsibility for decision-making reduced their anxiety.

If ACP doubts has capabilities for generalist context [C], sharing of clinical information gathered during supervision [M] reduces ACP anxiety [O] (PR3)

there has been occasions where it was kind of a relief that I've described this, I've found this and I've now given it to the GP and it's their problem not my problem. (ACP12)

when I get cases that I've never seen before, or just, you know, the textbooks so I'm not too sure but I, then in that case for like handing over to them. (ACP3)

Though this CMOC appeared to operate more strongly when ACPs are less experienced, a sense of additional complexity or uncertainty meant it was present even for more experienced ACPs.

if I've seen like a young baby I might always want to discuss that, even though I maybe think well I'm happy with what I've done, I guess for me there's a bit about demonstrating and documenting that I've actually discussed that as well. (ACP8)

The practice will expect too much from me.

As already described, ACPs knew that there was a challenge ahead of them and that they would need support and supervision to finalise management plans in many cases. A new demi-regularity was found where, if a practice team did not understand their scope of practice, they were fearful they would repeatedly be asked to see cases that were outside this scope and beyond or ability.

If there is a lack of clarity of ACP scope of practice (C) concern about challenge of caseload (M) increases ACP anxiety (O) (SP101)

This CMOC was most active for the PA ACPs, who all had less experience that the other practitioners.

So I think their expectations of me was a bit high to start with...we didn't really have any discussion. Erm, you know, we have the matrix of clinical conditions for the PAs, but nobody ever asked me about that, and I never said anything about it, so I don't really know. (ACP6)

I wouldn't feel confident to pick up the phone, have the whole conversation with them and then wait to debrief to see whether I've done the right thing to bring them in or leave them at home, I just think oh...I keep thinking oh I won't pick that one up. (ACP11)

Additional evidence to support this CMOC was that where there was a mutual appreciation of scope and expectations, it seemed reassuring.

we'd had a discussion about what my capabilities were, what my expectations were and what they were hopeful the role would be. And we kind of agreed fairly quickly that it was a similar sort of expectation on both sides. (ACP12)

the practice has already got a physician associate. She'd been working there kind of a year, six months before I had, so there was always that awareness of what we do, what- what they know we can do, what's best for us to do. (ACP1)

12.2.1.2 Supervisor sense of safety

Supervisors needed to develop a sense that the practitioner was safe to see patients independently as part of the clinical team. Two mechanisms from the IPT, relating to the practitioner's previous experience, were present in a modified form. These were related to whether the ACPs professional role had an established regulatory body and what experience the ACP had that would help them understand the differences in practicing in a general practice setting. Two new CMOCs were identified relating to basic competence and an underlying reluctance to be involved in supervision.

They must be able to practice safely.

If ACP role has statutory recognition in law [C], the professional register and confidence of ACPs professional oversight [M] reduces supervisor anxiety about supervision arrangements [O]. (PR8-1)

This CMOC was particularly evident for supervisors of paramedic ACPs.

160

because of having a paramedic background I think ACP2 was very good at saying, I don't know what it is but it's nothing serious. (GP2)

So it's like when you employ another GP, you think well actually we know we've got this level of competence or should have this level of competence to do this. So I think we did that with him. (GP12) – speaking about a paramedic

When statutory regulation wasn't present, as is the case for PA ACPs from a PA background, it was seen to be a marker of potential problems.

obviously when she was placed in our practice, I was reminded very on at the outset that she's not an independent practitioner-[GP2] – speaking about the opinion of partners

Non-medical prescribing rights seemed to be less important. In fact, the lack of prescribing rights could re-assure supervisors that the risks of supervision were lessened.

because she's not prescriber so every script needs to be signed by me, so because I'm signing every script we are discussing almost every patient. (GP2)

until quite recently was still not an independent prescriber which obviously includes a (yeah) supervision process as well, um, (yeah). (GP3)

This learner has relevant experience.

If ACP has previous experience in healthcare environments [C] supervisor recognising competence relevant to primary care [M] reduces supervisor anxiety about supervision arrangements [O] (PR9-1)

This CMOC seemed to operate in two forms. One form related to externally validated competence and the other to 'on-the-job' experience. With respect to the external validated training, there were mixed opinions as to its usefulness. Some supervisors accepted that the certain qualifications provided validation of competence.

> *I can't remember the timeframe, ACP3 had done the APACS course so her history and examination skills were fine, and, you know, were up to date. (GP3)*

> *I'm confident with those because I think they all do the ACP course anyway now so that takes them through all the kind of OSCE bits. (GP8)*

Others were less confident that previous qualifications provided useful preparation for primary care. Once again, this particularly related to the training that PAs had received, but not exclusively.

> *I had to kind of get my head round the, the kind of frameworks and matrices that they worked to, which are interesting because they're quite concrete, erm, and obviously nothing's (mmm) concrete in general practice. (GP4)*

Supervisors appeared to be more convinced by 'on-the-job' experience, to the extent that they seemed to be ready to let them have more independence.

> *she's been an A&E nurse previously so I knew that she'd done a reasonable amount of acute, I was very confident if someone was very sick that she'd know, so that's always reassuring. (GP11)*

> *although, you know, we were happy to appoint her, it wasn't that we didn't want to appoint her, but I think we, we were hoping for somebody that was a bit more experienced at the beginning. Cos I think knew that we weren't that experienced at the training part. (GP6)*

Confirming learner has basic clinical skills.

As described, whatever the qualifications or experience of the new ACP, there was a strong emphasis on establishing that basic skills in data gathering and recording clinical information was of a minimum standard and therefore patients would not come to harm. This was primarily through first hand observation of clinical practice and/or examination and interrogation of medical record keeping.

If supervision relationship is not yet established [C] supervisor confirming ACP has specific skills in data gathering (history, examination, note keeping) [M] reduces supervisor anxiety about supervision arrangements [O] (SP103)

we did it as a supernumerary, um, post for the first month, which allowed her to be, um, observed or observing directly for four weeks. And only once we were confident with that, did she sort of get, get more independence (GP3)

The supervisor's anxiety with the supervision arrangements seemed also to relate to medico-legal risks. When checking ACPs medical records, for instance, it was for the recording of any negative red flags and documentation of safety-netting discussions as much as clarity.

I was happy and confident with what he was writing down, you know, and his consultations, the kind of safety net he appeared to be doing and checking for red flags. (GP10)

part of the supervision was a bit like the debrief of opening up consultations, what I'd written was what I was saying I'd done, was my documentation correct, was all my safety netting there for somebody else to see. (ACP9)

This supervision arrangement is too risky.

When CMOCs relating to how supervisors reassured themselves about the safety of supervision were not operating sufficiently, the persisting sense of anxiety about the risks involved (whatever professional background they were from) triggered a CMOC generating ongoing concern amongst GPs whether it was wise to be involved in their clinical supervision at all.

If there is lack of clarity about ACP scope and role [C] supervisor uncertainty about competence relevant to primary care [M] leads to concern about supervision arrangements [O] (PR101)

there was a lot of uncertainty around the other members of the team, people were a bit like, ooh, we don't want to get involved in this kind of thing, we don't know what we're doing, sort of thing. (GP6).

I had to help everybody else in the team get round, to get their heads round that new role (yeah). And there was a (so-) fair bit of scepticism before we (mmm) appointed, to be honest. (GP4)

12.2.1.3 Team sense of safety

Planning skill-mix during recruitment.

As described as been shown in the section on background themes, a mechanism was identified (T101) which meant when practice teams had experience of supervision, team members felt confident that effective processes and structures were in place for them to provide supervision safely.

Another CMOC relating to in increased sense of safety amongst the whole team was present when the introduction of the new ACP role was planned in advance, with information sought on the role itself and an agreed job plan and role within the practice agreed. It involved talking to other practices, going on courses, or simply searching the internet for useful information.

If practice gathers information on ACP role (C) creating an agreed job plan (M) creates sense of safety within team (O) (SP102)

she'd been working in primary care for a short period, um, I think several months…. we were able to get some advice from the practice that she'd worked at previously about her role. (GP3)

I went on a few training days with practices that had already established training ACPs in practice and I developed a list that I thought that I'd kind of talk to the partnership what I felt we should be starting with (GP10)

When this information was used to create specific job plans to align with the supervision arrangements, it helped the supervisor, ACP and the rest of the team perceived a safe and supportive environment was being established.

there was a job plan created when she developed that role and it was quite specific about what she would be doing to start with and the time for each appointment and breaks and debrief time. (GP13)

when the role was actually starting, before I was even in place, we'd had a discussion about what my capabilities were, what my expectations were and what they were hopeful the role would be. (ACP12)

Further evidence for this mechanism was identified. When this sort of planning was not happening, before either a role was created or during any significant changes with the practice, it appeared to have a significantly detrimental effect on confidence with the supervision arrangements.

maybe I could have discussed that with her in advance, that these are, in the same way that you sit the registrars down and tell them that they will be doing the visits and (yeah) that sort of thing [laughs], you know, (yeah) so that they don't, you know, that (yeah), you make these things clear at the outset. (GP6)

when things were changing a couple of years ago we did, I had quite a long chat with Dr [Name] about how things were changing and it wasn't a settled environment at that point. It has improved, things have changed and, yeah, we've got a much better working relationship throughout our team (ACP7)

12.2.1.4 Patient sense of safety

Patients appreciating that supervision is available.

Patients could be unsure about the role of the ACP. There was evidence for a mechanism from the IPT by which they were satisfactorily re-assured when information about the presence of support and supervision was provided, either within the consultation itself or soon afterwards.

If the ACP needs to request advice when consulting with patients [C], information regarding ACP scope of practice and supervision process [M] leads to increased patient confidence in care provided [O] (SP6)

I prepare the patient and say, you know, maybe like 'I've looked at a lot of...I'm still training, I've looked at a lot of ears but I just really wouldn't want to miss something so I'm going to get a doctor in for a second opinion' and they're absolutely fine, (ACP11)

So I think as long as the patient knows that there's an escalation process where it's needed, where there's a clinical indication for that, in my experience and from what the receptionists feedback to me, they're perfectly accepting of it. (PM4)

Patients recognising that clinical learning needs supporting.

A related mechanism, in the IPT but adapted through the data suggested patients were sensitive to the fact that the practitioners were less experienced, needed to learn and were happy if management was checked and/or altered by a GP later.

If ACP has to contact patient to alter management after supervision [C] patients' confidence that ACP is supervised to manage their problems [M] acceptance of ACP role by population served [O] (POP2-1)

and normally, I can explain myself away, and they're generally happy with that and often, they quite like the fact that I'll say, well, I will discuss you with my GP supervisor at the end of my session. (ACP2)

I think the majority were kind of erm hap- not happy, but they were kind of accepting, oh thanks for just checking kind of type thing. (ACP1)

Table 19 Summary of Context-Mechanism-Outcomes configurations relevant to establishing a sense of safety within clinical learning environments.

Name	Context	Mechanism	Outcome	Data ID
	CLINICAL LEARNER			
SAFE1	If ACP doubts has capabilities for generalist context	sharing of clinical information gathered during supervision	reduces ACP anxiety	PR3
SAFE2	If there is a lack of clarity of ACP scope of practice	concern about challenge of caseload	increases ACP anxiety	SP101
	SUPERVISOR			
SAFE3	If ACP role has statutory recognition in law	the professional register and confidence of ACPs professional oversight	reduces supervisor anxiety about supervision arrangements	PR8-1
SAFE4	If ACP has previous experience in healthcare environments	supervisor recognising competence relevant to primary care	reduces supervisor anxiety about supervision arrangements	PR9-1
SAFE5	If supervision relationship is not yet established	supervisor confirming ACP has specific skills in data gathering (history, examination, note keeping)	reduces supervisor anxiety about supervision arrangements	SP103
SAFE6	If there is a lack of clarity of ACP scope of practice	supervisor uncertainty about competence relevant to primary care	concern about supervision arrangements	PR101
	PRACTICE TEAM			
SAFE7	If practice gathers information on ACP role and scope of practice	creating an agreed job plan as supervision starts	sense of safety within clinical team	SP102
	PATIENTS			
SAFE8	If the ACP needs to request advice when consulting with patients	information regarding ACP scope of practice and supervision process	increased patient confidence in care provided	SP6
SAFE9	If ACP has to contact patient to alter management after supervision	patients' confidence that ACP is supervised to manage their problems	acceptance of ACP role by population served	POP2-1
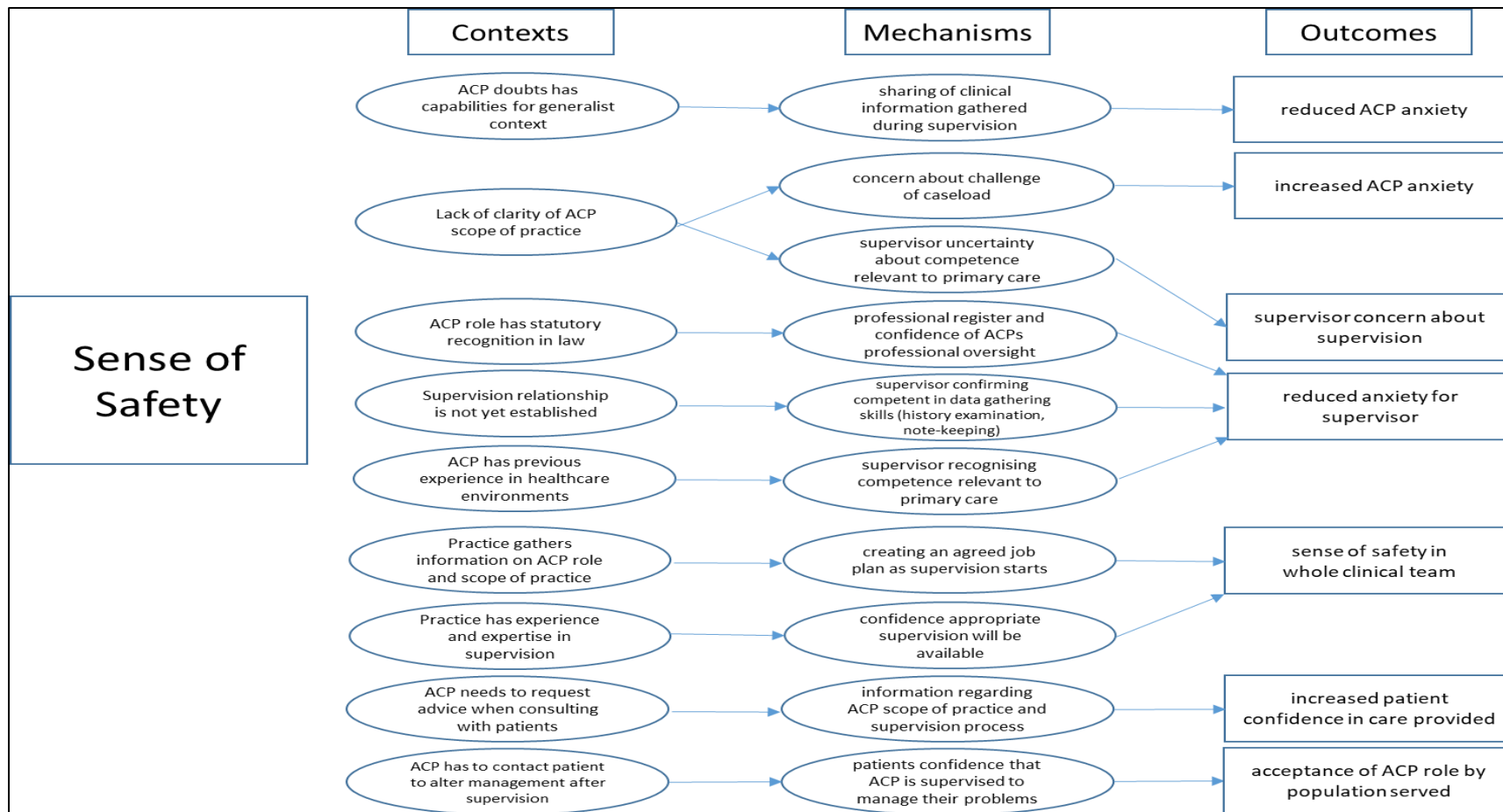
Figure 30 An illustration of the context-mechanism-outcome configurations associated with establishing a sense of safety in clinical supervision environments

12.2.2 Developing mutual trust

A collection of mechanisms that collated themselves around the concept of mutual trust between the supervisor and clinical learner. Mechanisms were identified that supported trust through the supervision relationship itself, and others that supported the ACP developing trust in the supervisor and the supervisor in the new ACP outside from the relationship itself. Though closely linked to the perception of safety in the clinical learning space, these mechanisms related to individuals rather than the general environment.

12.2.2.1 The supervision relationship

Developing a supervision relationship

Time for the supervisor and ACP to develop an understanding of the other's approach to work, or practice, was important in establishing a trust. In this CMOC, the term 'practice' extends beyond clinical management to broader professional attributes at work, such as how they treat others. There was some evidence that simply developing a greater understanding of each other's position was important per se.

If time for supervision is protected [C] mutual appreciation of others practice [M] leads to stronger supervision relationship [O] (SP 9-1)

> I would say, you know over the year as you get to know each other, as practitioners, she, you know, me and me her, it has probably gotten maybe I can kind of understand a little bit more about her thinking (GP2)

> I think that's, that's a process that develops over time. I don't think that's something you can have in the get go. (ACP3)

> trust builds very quickly and ACP3's very competent, and it soon became very clear we wouldn't need to worry about serious things being missed. (GP3)

> because of the experience we've built up over the last couple of years of working quite closely with her and the process we've gone through of verifying that information, so yeah, absolutely, we trust in her. (GP9)

In order for this CMOC to operate, there needed to be a positive appreciation of the other's attributes. Where relationships were not developing as positively, it seemed

possible for a context to be created which triggered CMOC (SP8-1) to operate where a lack of appreciation results in scepticism towards the usefulness of the new roles in general (see below)

12.2.2.2 Clinical learner trusting supervisors.

There was a collection of CMOCs relating to the ACP trusting that supervisors were and would continue to provide sufficient supervision support available to them. As previously described, this notion of the ACP trusting their supervisor's links closely to their perception of safety in the first section but here it related to but relates to individuals' behaviour rather than the environment as a whole.

Trusting in the availability of supervision when required.

If ACP is unsure about capabilities for generalist care [C], ease of availability of supervisor support [M] leads to ACP trusting supervision environment [O] (SP10-1)

The availability of support, not just in terms of time but also the manner in which it was delivered could lead to the ACP trusting the supervisor. As can be seen later in in CMOC SP3.1, this trust became a context that altered the supervision conversations in a way that promoted learning.

> *it has always been regularly available. My erm- more specific supervisor's only in on Monday and Friday, but kind of all the- there's always a GP in and they're always willing and accepting to open the door if I need to ask questions (ACP1)*
>
> *I talked to him straightaway because he came across, saying 'don't worry', you know, almost I've got your back, we decided that together. And I remember saying 'oh don't worry, …, if it comes back as a complaint we made that decision jointly'. (ACP8)*
>
> *I was never, ever lead to believe that I was asking something quite simple, but that was OK, you know, it was taken that – and still is – it's an open forum if you want to ask a question no question is a silly question really. And I think that for me developed trust. (ACP9)*

Variable commitment across supervisor team

If support isn't standard across supervisor team [C] ACP concern about appropriate supervision [M] leads to less trust in the practice as a learning environment. [O] (SP104)

ACPs identified that the ease of access to safe supervision spaces could vary significantly between GPs and monitored their individual responses to their requirements for help and support. This led to varying levels of trust in the GP supervisors. Some ACPS described how they had had to navigate these different levels of commitment to make sure they were able to get what they needed to maximise their learning.

> *I think the quality of the debrief can be very, very different and how approachable some of the GPs often are or aren't, (ACP8)*

> *it is varying between one doctor to another and they've all got very different opinions of what I can do, what my colleagues can do, some of them almost kind of feel like it is that eyes and ears thing, you're the eyes and ears and that's all you do – and others have far too much confidence in me! But in most cases we can usually come up with some kind of compromise. (ACP7)*

When supervision was not easily available and they were unable to negotiate the required level of supervision to their satisfaction, trust in the supervision environment could break down.

> *GPs thought that I was able to perhaps act within the same sort of level of competency as one of the trainee GPs, that I didn't need as much support as perhaps I did. And there has been the odd occasion where the trust broke down a little bit or needing pulling back because of either mistakes from a GP side or from my side. (ACP12)*

> *I remember I spoke to one of the GPs and his response was 'well I haven't seen the child', almost like instead of saying 'well let's just think what's going on, what's happening, what do you think, what did you see', it was like 'well I haven't seen the child', so almost like get on with it…I remember thinking, well that's not good, do you know what I mean, … I remember feeling quite deflated by that reaction, (ACP8)*

Managed exposure to clinical challenge

In the section on background contextual themes, a mechanism is identified whereby, given the pressure of workload, ACPs could be allocated clinical work beyond their scope of practice (see T9 in the next section). This outcome created the context for the mechanism (SP101) where ACPS were anxious, as they did not feel safe.

When the ACPs trusted that practices or supervisors were helping to prevent them being allocated beyond their scope, it significantly reduced their anxiety and stress. There was sometimes a balance struck between the ACP being allowed to avoid certain cases and the supervisor acting to prevent exposure to cases potentially outside the scope of the ACP.

If ACP is unsure about capabilities for generalist care [C], managed exposure to challenge in caseload [M] leads to reduced stress and anxiety [O] (SP10-2)

> *I think I was quite lucky because the practice has already got a physician associate. She'd been working there kind of a year, six months before I had, so there was always that awareness of what we do, what- what they know we can do, what's best for us to do. (ACP1)*

> *they realised I was, I was, I wasn't at the same level as the other PA who had already three years of experience. Erm, but, yeah, I think they started me really slow (ACP6)*

> *and it started with UTIs and sore throats and rashes and, yeah, then <u>we</u> sort of grew it organically from the start. (ACP11) <u>Note the joint decision</u>*

12.2.2.3 Supervisor trusting ACPs.

A collection of mechanisms that relate to the amount of trust a supervisor develops trust in individual ACPs and the subsequent outcomes are collated here. They all related to the level of complexity of patients the ACPs are seeing. One is trust that the ACP will recognise the complexity; another is that they have information to understand what level of complexity the ACP can manage. A third, when either or both of the former two are not operating can lead to support for the supervision process itself breaking down.

Trusting Clinical learner will seek help appropriately.

This CMOC relates to the supervisor trusting that the ACP will ask if they are unsure about clinical management and that they are aware of the limits of their own practice. It relates closely to SP11.1 (below) in that it has similar outcomes. When operating, this mechanism supports an outcome where the ACP is able to stretch themselves and take on increasingly complex cases, which then accelerates their development.

If the ACP is clear about their scope of practice [C], supervisors' trust that ACP will ask for advice [M] allows ACPs to take on more complex cases [O] (PR4-1)

This CMOC requires a judgement from the supervisor that the ACP will recognise complexity and links therefore to mechanisms related to maintaining a perception of safety. The ACP needs to identify that they are out of their depth for this CMOC to be triggered.

> *if I identified that I didn't think was suitable for me [sic], I would say straightaway that this isn't appropriate (okay) rather than- so that demonstrated when I knew something was out of my depth and I shouldn't be seeing it. (ACP4)*

> *I suppose it's being open, being honest, being honest about your limitations, you know, maybe not pretending things you don't know, so maybe just not winging it, being able to go and ask advice when you know something, you're not sure on something – I think that must build trust. (ACP8)*

The supervisor then recognises that the ACP is aware of the limits of their scope of practice.

> *But actually, I, I think he was also extremely good at knowing the levels of his competence (right) and balance that very well. Um, (right) and he would come to me if he felt like, err, you know, he was being asked to do a little bit too much (GP4)*

> *I know she'll come to me, or somebody, it may not be me personally, to ask for help, because we think we're quite confident in her recognising the limits of her capabilities now. (GP9)*

This trust could then lead to arrangements where the ACP could explore their competence with more complex cases.

it also enabled him to cherry-pick, err, the cases that he was comfortable with. Erm, and then if we were not busy, he could choose something where he wasn't quite so comfortable. (GP4)

we sort of agreed that maybe the time had come, and I think she was very keen as well to say 'right I want my own list, I want reception triage to sort of put down patients that they think'. (GP2)

This outcome, a greater self-direction of clinical practice is seen later as a context in CMOC PR9.1.

Lack of clarity about learners' scope of practice.

There was evidence that this CMOC was probably operating within practices. Though it potentially fits as a background theme relating to the wider team, it is presented here because the outcome is inappropriate allocation of cases-load to the ACPs. As has been described, this outcome can then lead to mechanisms that affect the trust that ACPs (SP10.2) and supervisors (SP8-1) have in the supervision process.

If there is shared responsibility for supervision [C], ineffective systems for sharing the ACPs developing scope of practice [O] leads to inappropriate allocation of caseload to ACP within the team [O]. (SP1-1)

When supervisors were asked whether, in situations, where there was shared responsibility, systems for sharing information responses existed, generally they were not.

Hmmm, no, I [LAUGHS] don't think so. No, no, I don't think- (GP1)

so it can be a doctor … who has never actually met ACP6, doesn't know any- you know, has very little idea of what ACP6 can and can't do, erm, is making those decisions. (GP6)

Without effective communication, both supervisors and ACPs recognised the outcome was that inappropriate allocations of cases to the ACP lists were more likely to occur at any given time.

174

people were sending her stuff that she was clearly not, not ready for. Erm, and then that was then having to be dealt with by whoever was supervising her which was usually the duty doctor. (GP6)

there's a real difference in the partners of what they think I can do I think, so I have to remind, I feel like I have to remind some people more than others that actually I want to see this or sometimes. (ACP11)

Skeptism about the introduction of new clinical roles.

If supervisor becomes unsure about ACPs relevant scope of practice [C], scepticism about utility of role (M) leads to reduced commitment to supervision (O) [SP8-1]

This CMOC relates to others that have negative outcomes on attitudes and support for supervision process or the clinical development of ACPs, although arguably the data fitted less well here. Despite continuing to provide supervision, when GP supervisors were unable to develop clarity about the ACPs scope of practice, they could become less sure about the developmental potential of supervision process and the contribution ACPs would ever provide to general practice.

I have had some grumbles I guess from some of the GPs who said 'I didn't go into general practice to spend a third of the day supervising other roles, I just want to be a GP. (PM4)

they send her easy stuff, and, then she doesn't progress, and, you know, it's a vicious circle, really (mmm). But then, on, on the flip side, if you give her something too complex, her experience is that just leads to other problems for the, for the person who's supervising her. (GP6)

Table 20 Summary of Context-Mechanism-Outcomes configurations relevant to establishing mutual trust within clinical supervision environments.

Name	Context	Mechanism	Outcome	Data ID
	RELATIONSHIP			
TRUST1	If time for supervision is protected	mutual appreciation of others practice	stronger supervision relationships	SP9-1
	NEW PRACTITIONER			
TRUST2	If ACP is unsure about capabilities for generalist care	ease of availability of supervisor support	ACP trusting supervision environment	SP10-1
TRUST3	If support isn't standard across supervisor team	ACPs experiencing different commitment to supervision	reduced trust in practice as a learning environment	SP104
TRUST4	If ACP is unsure about capabilities for generalist care	managed exposure to challenge in case load	reduced stress and anxiety	SP10-2
	SUPERVISOR			
TRUST5	If the ACP is clear about their scope of practice	supervisors trust that ACP will ask for advice	allows ACPs to take on more complex cases	PR4-1
TRUST6	If there is shared responsibility for supervision across team	ineffective systems for sharing a record of supervision and ACPs developing scope of practice	inappropriate allocation of caseload to ACP within the team	SP1-1
TRUST7	If supervisor becomes unsure about relevant scope of practice	scepticism about utility of role	reduced commitment to supervision	SP8-1
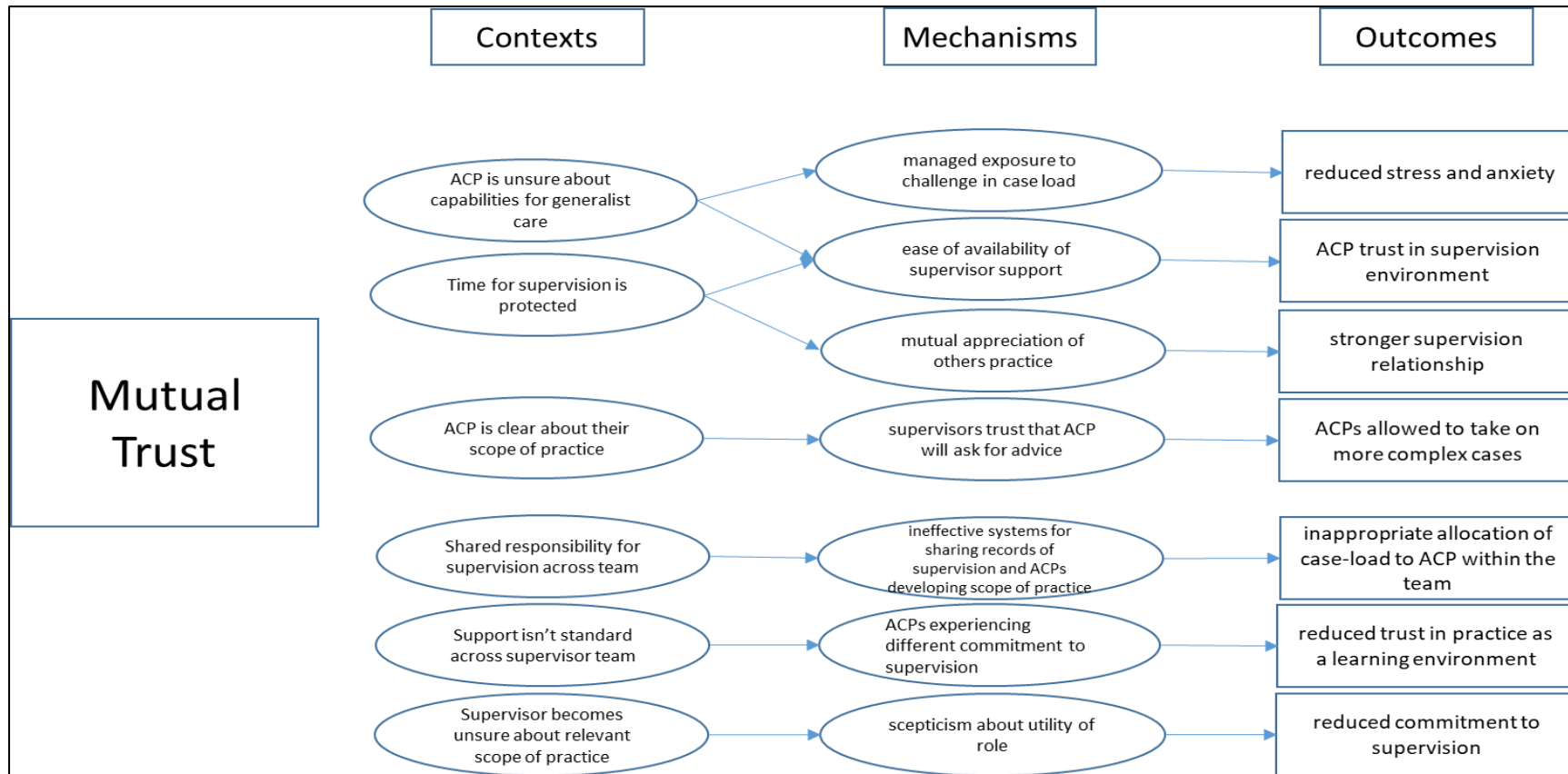
Figure 31 Context-mechanism-outcome configurations associated with the development of mutual trust in clinical supervision environments.

12.2.3   Sharing clinical thinking

Two sets of mechanisms identified relate to the importance of allowing enough time and space for deeper discursive supervision conversations to take place.

The first set relate to standards of care and promoting professional development more generally through deeper conversations. The second are mechanisms that happen as the supervision conversations take place that accelerate the clinical development of the practitioner. This second set is important, as the depth of discussion relating to person-centred and generalist approaches to care seems to affect how much mechanisms that support learners to reflect on and adapt their own approach to care are triggered. These CMOCs are therefore closely linked to those that promote reflective practice; some of them have outcomes that become contexts in the next section.

12.2.3.1   The supervision conversation

Two mechanisms relate to developmental aspects of the conversation itself with respect to care from a generalist perspective. The first is how supervisors provide their expertise in generalist care through supervision when ACPs are not able to manage clinical problems appropriately. The second is how this process helps to benchmark the performance of the ACP. A third new mechanism captures an effect of external benchmarking processes through formal assessments on the supervision mechanism.

Improved standards of care

This CMOC relates to the well-recognised core function of clinical supervision (after ensuring patient safety is preserved), which is to improve the standard of care delivered from less experienced practitioners. The increasing recognition of inappropriate management in more complex cases is established when the supervisor suggests subtle changes to management that are underpinned by expert generalist principles (see promoting reflection below).

If caseload includes greater clinical complexity [C] recognition of inappropriate management [M] leads to alteration of management plan to more generalist* approach [O] (POP3.2)

there's definitely been times when they've been like oh, maybe going- rushing into bloods right now is a bit too soon, or actually, maybe you should've left it a little bit longer before you did like the stool test or whatever. (ACP1)

so she'll do, rather than doing things in a stepwise way, she'll order the ultrasound and the chest x-ray and the bloods all at once rather than kind of maybe picking one more pert- one of the things that's most pertinent (mmm). (GP6)

Learner recognising complexity in primary care.

This CMOC suggests a more subtle mechanism can operate whereby the process of debriefing allows the ACP (and their supervisor) to benchmark their learning needs with particular respect to the generalist approach and how ready they are to take on more complex cases.

If ACP is unsure about capabilities for generalist* care [C] intensive debrief of clinical management decisions [M] leads to increased awareness of learning needs [O] (SP 11-1)

you don't know where to go with it. And very often in the in the debrief, I'd say I'm so frustrated because I want to complete this. I want to conclude what's going on, but I can't because I don't know where to take it. (ACP3)

I began to feel more confident about her abilities, but other more complex presentations still need more support, more thinking and more probing about her thinking management. (GP9)

Effect of external qualifications

This new CMOC relates to how the requirement of external assessments affected the way practices provided time for more effective supervision conversations, as well as shaping the content of the supervision itself.

If ACP is undertaking an external course for clinical development [C] requirement for assessments [M] protected time for supervision conversations [O] (SP108)

I don't feel like I've been supervised since I've finished APACS at all. (ACP11) – [reflecting on the Advanced Physical Assessment and Consultation Skills (APACS) course]

Prescribing you have to sit down and you have to discuss cases and things and what worked well and what didn't work well. (ACP13) - [reflecting on non-medical prescribing course]

because obviously I've got to sign off certain aspects of it. So I've just been feeding back the positive, what's actually – it's a debrief where we go through what he's done really well and where he can improve on stuff. (GP12) - [reflecting on professional portfolio requirements]

12.2.3.2 Sharing thoughts

Two mechanisms were identified regarding the importance of space and time in another aspect. When time is available in a safe supervision space, the explicit sharing of clinical reasoning seemed to be a powerful catalyst to their clinical development.

Sharing clinical reasoning

If ACP feels in a safe supervision environment [C] ACP sharing clinical reasoning during supervision [M] increases confidence to see more clinical complexity. [O] (SP3.1)

explaining what my thoughts were and then them explaining what their thoughts were on the same sort of patient and knowing that I knew what I was doing because they agreed with what I was saying. (ACP7)

some people, erm, will make you think about what the right answer is, so you come to a conclusion yourself … What makes you think this is the right answer? … he's also making you think about why (ACP6)

for me realising I did know what I was doing, and it was OK, you know, it would be the question's like 'so what are you going to do next' or 'what are your thoughts' or 'what else should you be considering' (ACP9)

Effect of time pressure on sharing reasoning.

Conversely, when discursive supervision spaces were limited by the effects of a busy and pressured clinical environment, the conversations remained superficial and reasoning processes were not discussed.

If supervision time under pressure [C] limited sharing of clinical reasoning supervision discussion remaining superficial [M] leads to inhibition of clinical learning [O]. (T101)

> *So if our clinic's overrunning, and the next one's gonna start, the debriefs will be just about, you know, have I covered the- have I covered what I needed to cover essentially. (ACP1)*

> *some people will just give you the answer and they just want you out of their room (ACP6)*

> *it's very difficult to give then that kind of ten-minute slot and expect them to deal with all these things. And so they do end up just saying 'oh well just do this, just do this'. (GP8)*

ACPs recognised this was limiting their development.

> *if you knock on someone's door and they're running late or they've got their other pressures and then they get me tap tapping on the door, I find that's when it doesn't work, you don't learn from the answers, they just maybe give you the answers, (ACP13)*

Table 21 Summary of Context-Mechanism-Outcomes configurations related to the discursive space to share clinical thinking in clinical supervision environments.

Name	Context	Mechanism	Outcome	Data ID
SPACE1	If caseload includes greater clinical complexity	recognition of inappropriate management	alteration of management plan to a more generalist* approach	POP3.1
SPACE2	If ACP is unsure about capabilities for generalist care	intensive debrief of clinical management decisions	increased awareness of learning needs	SP11-1
SPACE3	If ACP is undertaking an external course for clinical development	requirement for assessments	protected time for supervision conversations	SP108
SPACE4	If ACP feels in a safe supervision environment	ACP sharing clinical reasoning during supervision	accelerated confidence to see clinical complexity	SP3.1
SPACE5	If supervision time under pressure	limited sharing of clinical reasoning	inhibition of clinical learning	T101
	* Generalist approach includes the following concepts: • a skilful use of communication skills, • using continuity to enhance clinical care, • person-centred clinical practice, • managing complexity and diagnostic uncertainty, • care co-ordination and advocacy.			

Contexts

Case-load includes greater clinical complexity

ACP is unsure capabilities for generalist context

ACP undertaking an external course for clinical development

ACP feels in a safe supervision environment

Supervision time under pressure

Mechanisms

recognition of inappropriate management

intensive debrief of clinical management decisions

requirement for assessments

ACP sharing clinical reasoning during supervision

supervision discussion remains superficial

Outcomes

alteration of management plan to a more generalist* approach

increased awareness of learning needs

protected time for supervision conversations

accelerated confidence to see clinical complexity

limitation of sharing of clinical reasoning

Time & Space

* Generalist approach includes the following concepts:
- a skilful use of communication skills,
- using continuity to enhance clinical care,
- person-centred clinical practice,
- managing complexity and diagnostic uncertainty,
- care co-ordination and advocacy.

Figure 32 Context-mechanism-outcome configurations associated with provision of discursive spaces in clinical supervision environments.

12.2.4 Promoting reflection on clinical experiences

These mechanisms relate to ACPs reflecting as clinical learners on their own clinical experiences, and on any feedback. For some, this reflection helped them identify skills they were bringing from previous roles that were particularly helpful. Though reflection happened spontaneously when thinking about their own consultations with patients, it was further stimulated by direct feedback and discussion on the principles and reasoning of a generalist approach from their supervisors.

This explicit sharing of a generalist approach fits closely with the previous section, on sharing clinical reasoning, as it could only occur if discursive spaces were protected for deeper a conversation.

The last mechanism in this section describes the importance of reflection with peers, which was another mechanism that to helped practitioners benchmark themselves as to where they were on their transition to a new role and context of practice.

12.2.4.1 *Learner reflection on clinical practice*
These mechanisms describe the effects of reflection on their own practice within the teams that supported the ACPs development and integration.

Learner recognising their contribution to clinical work.

If ACP brings relevant capabilities for primary care [C], recognition of this contribution to the team [M] leads to increased ACP confidence and job satisfaction [O] (PR10)

Some ACPS recognised skills developed in previous roles they were using, and this led to an increased confidence and job-satisfaction. These were wide ranging, ACPs from a paramedic background recognised skills they had developed in communicating easily with people from a variety of different cultural backgrounds, and nurses identified they had skills related to holistic care. Others identified skills that are more generic.

Diverse cultural backgrounds

So on the ambulance service you don't know where you're going. You can go from a millionaire's mansion to somebody on the streets living in a cardboard box and be able to speak to everybody in that, from one to the other. (ACP12)

I think it's been recognised the rapport I build up with (Yeah) a more diverse patient group i.e. when somebody comes in, who's a drug addict, they actually ask to see me again or speak to me again, err the homeless girl that's a street worker. She'll ask to ring and speak to (ACP3)

Holistic approach

I think coming from a mental health background, ACP8 understood a lot more about the fact that a lot of physical complaints, while very real, can be psychologically based. (GP8)

I think it is helpful to have a nurse background and do the ACP role because I think you are naturally more of an advocate (ACP11)

Generic

so I think when I worked in different roles before, I had so many various different stakeholders, from the public to working with chief execs etc. and various things like that. So I've developed strong communication … it helped in terms of dealing with complex, challenging patients. (ACP4)

Learner recognising generalist approach is different.

A new CMOC relating to how the ACPs recognise that there are significant differences in the context and nature of clinical work in a general practice setting was identified. Examples included instances when they would see patients again and recognised that continuity was clinically useful or that conditions were undifferentiated and more complex, which meant a different approach was required.

If ACP has experiences in general practice setting [C] reflection on own practice and patient narrative [M] leads to adaptation of approach with respect to medical complexity and continuity [O] (SP106)

when you get in the job (Yeah) and you learn more you understand the complexity of it and that's the frustrating bit because you get there thinking I can do this but boy it's a lot harder than you think, a lot harder. (ACP3)

it's quite easy to forget, is that long-term conditions will affect everybody differently depending on their social circumstances, depending on what other medical conditions they've got and other aspects of their life, and I think that kind of did help kind of continuity of kind of understanding the bigger picture (ACP1)

In the face of these new challenges, ACPs reflected on how they needed to approach their work differently.

I needed to learn to sit back and listen more, which I learnt and I erm, I'm very, I'm very much for looking at the bigger picture and, you know, why do you feel this way, what's going on in your family life and things like (Right) that I'm used, so yeah, I've developed a lot in terms of how I deal with patients. (ACP2)

it has to be a non-judgmental, non-barrier sort of a place where people feel safe to be able to speak, safe to be able to discuss the issues they've got at that time, so I think it needs to be tailored to the specific person. (ACP13)

12.2.4.2 *Promoting reflection on generalist approach through feedback*

This new CMOC seemed important in promoting a successful adaptation to generalist approach. As already suggested, the supervisor explicitly sharing their own thinking when providing feedback on the clinical learner's management plans appeared to trigger deeper reflection into their own practice that led to them adapting to a more generalist approach to care.

If supervisor provides feedback focused on generalist* approach [C] ACPs reflection on difference to own practice [M] leads to changes to ACP practice to more generalist* approach [O] (SP107)

The modelling of a generalist approach took place in explicit feedback on the practitioner's clinical practice or performance in simulated practice. What appeared critical was that the reasoning for why a generalist approach was important was articulated.

The mechanism amalgamates three closely related CMOCs proposed in the IPT by stakeholders (PR12, PR13, and PR14) that covered different aspects of generalism (continuity, care-coordination, diagnostic uncertainty). There was limited evidence for each individually but collectively the

evidence was strong for this broader CMOC. It also links to PR10, which relates to how this reflection and subsequent adoption of new practice helps practitioners develop confidence in their new roles.

Generalism, or a generalist approach to healthcare has been explained in previous chapters but for ease, the principles underpinning it are outlined below:

- a skilful use of communication skills,
- using continuity to enhance clinical care,
- person-centred clinical practice,
- managing complexity and diagnostic uncertainty,
- co-ordinating care and advocacy.

Evidence for this is presented, wherever possible, with paired quotes from a GP supervisor and the ACP, which suggest that the feedback has changed their approach.

Communication skills

> *we'll talk about more about the emotional impact that the patient might (mm) have… how did you (mm) feel in the consultation? How did you manage it? How did the patient react? And, yeah. Um, so some communication skills, teaching as well if that's needed (GP3)*

> *It was a case of, I needed to learn to sit back and listen more, which I learnt (ACP3)*

Continuity

> *So continuity is actually something that we talk about a lot (right). Probably more than anything you've touched on before, is continuity (GP2)*

> *and I see how some patients it's been important for continuity umm. And certainly, like I tried to follow them up, rather than sort of book them in for other people. And it's quite nice when they, they want to speak to you as well. (ACP2)*

Person-centred clinical practice

> *So then we talked about this lady's past and what I thought was going on, that there was hyper-somatization there was an underlying depression that was untapped… she went back in and she just sort of took that, what we discussed, had a discussion and the lady was open to starting antidepressants and literally, she's been following her up, and she's a different person (GP2)*

> *she knows her patients like the back of hand she knows where they live and the street name and like she, it, she divulges bits of information she's Oh, that's their family member or that family. Or that that happened there and actually, when you get that backstory … it really does help. (ACP2)*

Managing uncertainty

This relates to the use of time as clinical tool, particularly when multiple complex medical problems increase the levels of uncertainty in how things will develop. The use of time to allow more clinical information to become available, with appropriate safety netting was discussed.

> *you know, err, err, mental health cases, or, you know, the anxiety, undiagnosed chronic anxiety that often pop up through urgent care with (yeah) minor illness. I suppose we debriefed about those and we would sort of carry those through over a few weeks. (GP4)*

> *the discussions we have had around, you know, complexity and uncertainty is more around, you know, safety netting, but also when you see a person, you're not going to get to the bottom of it in that one consultation, and it may take multiple consultations to work out exactly. (ACP4)*

Care coordination and advocacy

As well as considering how to support patients to coordinate care, for instance if they have a number of conditions (and advocate on their behalf to ensure appropriate co-ordination happens), this area includes new ACPS becoming aware of the wider services available within the practice such as health and wellbeing coaches and elsewhere.

At the start there would be the attitude of, oh well, they've just come in asking for a letter. Um, but moving from that to, well actually, that's probably the most effective thing you'll do today is to, is to get that person moved into more of a suitable accommodation or whatever, and, and seeing that as a real positive role of general practice. (GP3)

just little things and, and like, I had a guy the other day, and he was sofa surfing, he was foreign, he had no idea of how to find him. So I got him in touch with a street worker who's now trying to help him (ACP3)

There were times where this mechanism did not seem to be operating as strongly. One particular supervisor recognised that they weren't explicitly discussing this as much with these non-medical practitioners as they would with clinical learners from a medical background such as medical students or general practice trainees.

I think, it'd be nice to actually try and improve their skills… I don't do that, really. Err, whereas I do (yeah), do, and I do with the med student. (GP1)

12.2.4.3 Opportunities for peer reflection

This new CMOC, where new clinical learners met with peers, was particularly important to help them reflect on where they were on their own journey and clinical development. The lack of described career structure and routes for ACPs to progress professionally in primary care was expressed as a problem for a number of ACPs and indicated supporting this mechanism to operate was important for them.

Reflecting with peers on career journey

If ACP has opportunity for discussion with peers [C], reflection on contrasting experiences [M], greater clarity about own development and requirements for learning [O]. (SP109)

there is no clear guidance about what is it that a PA should be doing in general practice? What does a PA in one, two, five years look like? Err I think unfortunately, a lot of the guidance from higher up, it's been very vague (yeah) (ACP4)

The opportunity for peer discussion allowed ACPs to clarify for themselves what their journey might look like

looking how the others who are more kind of mature PAs were kind of feeling similar and- and how they were more confident in certain things now, and (yeah) it's quite helpful to kind of look at where you are in terms of progression with all the others. (ACP1)

Yeah, we do. Um, so yeah, I think we are all, like, in different places. Erm, there are people, erm, who have been asked to do care home ward rounds, erm, there are people who are already doing a chronic disease management. Erm, there are people who are dealing with contraception, erm, and then people who are dealing with mainly, like, acute on-the-day stuff like me. (ACP6)

Table 22 Context-Mechanism-Outcomes configurations centred on reflective practice in clinical supervision environments.

Name	Context	Mechanism	Outcome	Data ID
REF1	If ACP brings relevant capabilities for primary care	recognition of own contribution to the team	increased ACP confidence and job satisfaction	PR10
REF2	If ACP has experiences in general practice setting	reflection on own practice and patient narrative	adaptation of approach with respect to medical complexity and continuity	SP106
REF3	If supervisor provides feedback focused on generalist* approach	ACPs reflection on difference to own practice	changes to ACP practice to more generalist* approach	SP107
REF4	If ACP has opportunity for discussion with peers	reflection on contrasting experiences	greater clarity about own development and requirements for learning	SP109
	* Generalist approach includes the following concepts: • a skilful use of communication skills, • using continuity to enhance clinical care, • person-centred clinical practice, • managing complexity and diagnostic uncertainty, • care co-ordination and advocacy.			

Contexts	Mechanisms	Outcomes
ACP brings relevant capabilities for primary care	recognition of own contribution to the team	increased ACP confidence and job satisfaction
ACP has experiences practicing in general practice setting	reflection on own practice and patient narrative	ACPs adapting practice to a generalist* approach
Supervisor provides feedback focused on generalist* approach	ACPs reflection on difference to own practice	changes to ACP practice to more generalist approach*
ACP has opportunity for discussion with peers	reflection on contrasting experiences	greater clarity about own development and requirements for learning

Reflective practice

* Generalist approach includes the following concepts:

- a skilful use of communication skills,
- using continuity to enhance clinical care,
- person-centred clinical practice,
- managing complexity and diagnostic uncertainty,
- care co-ordination and advocacy.

Figure 33 Context-mechanism-outcome configurations associated with promoting reflective practice in the clinical supervision environment.

12.2.5 Allow self-direction and authorship.

There were two key mechanisms related to how ACPs developed a sense of their own authorship through self-direction with respect to clinical decision-making.

Once ACPs got to know the GPs that were supervising them, they were choosing who they went to for supervision depending on what they expected the feedback to be and whether they would be asked to change the clinical management they had decided was best for the patient.

The other related to the supervisors themselves. Once ACPs had developed a greater degree of self-direction, it seemed that the supervision burden in terms of time and efforts reduced dramatically.

Taking responsibility for clinical management

This new CMOC relates to how as ACPs became more confident they drove care decisions.

If ACP is confident about the best clinical management [C] ACP chooses supervisor that will agree with their approach [M] ACP management plan is not changed [O] (SP110)

> *everybody does things differently (yeah) and even when I go from supervisor to supervisor, there's things that I know certain people will do differently to others, (yes) and sometimes that may tailor what I do. (ACP1)*

> *if I've got a very focused thing and I know that that patient doesn't want certain investigations or anything like that, there will be certain GPs that I would possibly avoid seeing who very much want everything investigated … knowing who to discuss those things with if I think actually they're going to push things that this patient doesn't want. (ACP7)*

Supervisors recognising learners' contribution to clinical work.

It has been shown that the commitment to supervision from different GP supervisors can be variable. There was evidence for this CMOC from the IPT that showed that the increasing independence in practice that ACPs display was important in helping supervisors see the results of the support they had contributed to previously.

If independence in practice increases, [C] ACPs contribution to care is recognised by supervisor [M] leading to acceptance of ACP as useful member of clinical team [O] (PR9.1)

the straight-talking element of that, of, you know, just getting on with it, the, the want, the want to get to work and do something positive to help is really appreciated, (GP3)

we expanded the team and brought somebody in who had an A&E background and immediately saw a difference in terms of them feeling much more comfortable and taking on a higher degree of risk, which was really useful in terms of what then went back to the duty doctors on the day. (PM4)

so he's much better at making a suggestion now about what the next step of treatment is which is what he couldn't do before because he hadn't got that experience, where he's getting that experience now to actually say "Right, I can now follow this up and I can now finish off what the patient needs" (GP12)

Table 23 Context-Mechanism-Outcomes configurations centred on self-direction of clinical practice & learning in clinical supervision environments.

Name	Context	Mechanism	Outcome	Data ID
SELF1	ACP is confident about the best clinical management	ACP chooses between available supervisors	ACP management plan is not changed	SP110
SELF2	Increasing independence in practice	ACPs contribution to care is recognised by supervisor	acceptance of ACP as useful member of clinical team	PR9.1

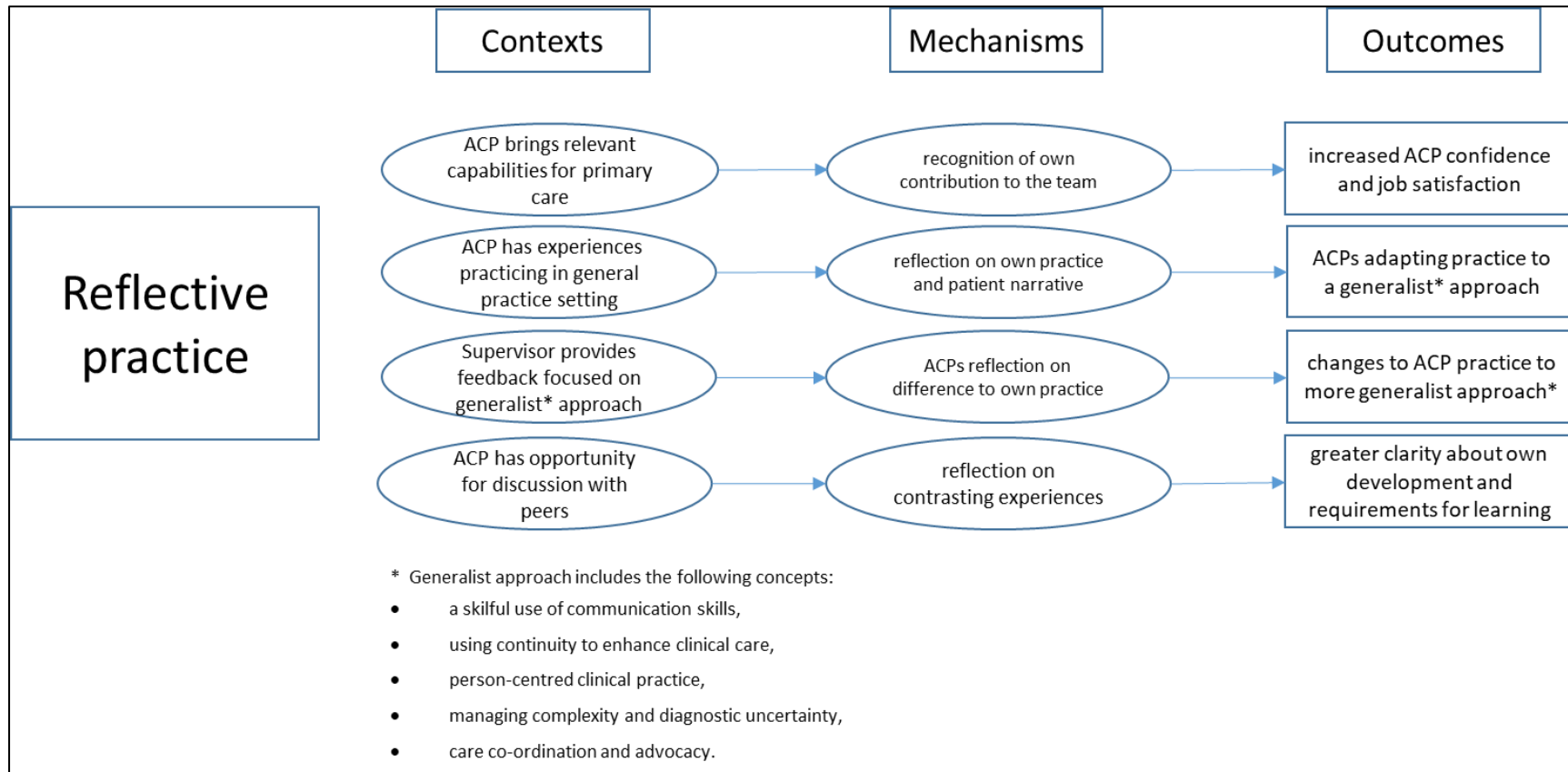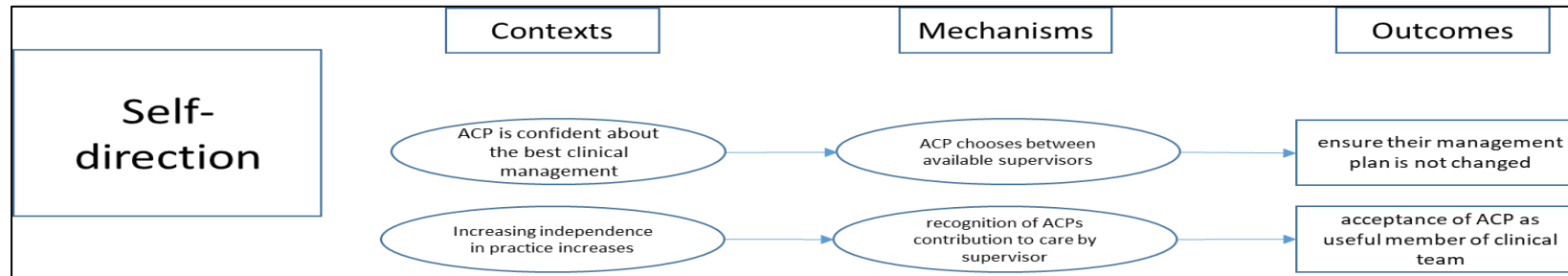*Figure 34 Context-mechanism-outcome configurations associated with self-directed practice in clinical supervision environments.*

12.2.6 Practicing collaboratively

This set of mechanisms cluster around moments when a successful transition of the practitioner to their new role context is happening and the ACP and GP recognise the contribution the new practitioner is increasingly making to deliver an effective service.

The first describes how the ACPS derive job satisfaction from recognising their development. A second describes GPs starting to seek the support of the ACP, co-opting them in providing team-based continuity for patients. A third describes how patients demonstrate their satisfaction with the care provided by the practitioner by requesting to see the ACPs again over other clinicians.

Learner recognising development of clinical practice for generalist care.

This CMOC relates to the new ACP establishing a comfortable place within the primary care team where they have the satisfaction that they are helping deliver a good service.

If ACP has experience in primary care [C], increasing awareness of relevant scope of practice within the team [M] leads to improved confidence and job satisfaction [O] (PR 15.1)

> *I know what I'm gonna do if- if you try this treatment and it fails, or if your bloods come back fine or abnormal I know what I'm gonna do (mm) and I think that I definitely have noticed quite a significant jump. (ACP1)*

> *I think because I've been allowed to use those strengths and I've seen a big sort of – I know how valuable that is to the practice with maybe some of the more challenging patients and things like that – that then gives me confidence with other things. (ACP8)*

Supervisors recognising development of clinical practice for generalist care.

This CMOC describes how other members of the clinical team can start to work collaboratively with the ACP, recognising and trusting their skills to support some team-based continuity.

If ACP has relevant capabilities for primary care [C] recognition of contribution to the team [M] leads to collaborative care with supervisor and GP team [O] (PR16)

at the minute we are seeing other people's patients if for instance you get somebody who doesn't work the next day you will see…but often you'll do the physical examination for them, document it and then send them a task. (ACP9)

he's contributed that kind of fresh eyes perspective and brought different skills in that we've all benefited from. So, feels very much like bilateral, multi-professional learning. (GP4)

Patients recognising development of clinical practice for generalist care.

Where patients are seeking out the ACP as a preferred provider for their healthcare needs, this CMOC is operating.

Population has an unmet need for health care [C] patient's confidence in ACPs capability to manage health care problems [M] increased continuity of care for patients [O] (POP7)

I kind of noticed kind of in the first few- few months that there- there were certain people who would specifically ask to see me, which was kind of like a oh, I'm obviously doing something right. (ACP1)

I think it's been recognised the rapport I build up with (Yeah) a more diverse patient group i.e. when somebody comes in, who's a drug addict, they actually ask to see me again or speak to me again, err the homeless girl that's a street worker. She'll ask to ring and speak to [me], (ACP3)

she gets good feedback and definitely gets on with the patients and they appreciate the time that she'll spend on the mental health side of things and her understanding of it, (GP8)

Table 24 Context-Mechanism-Outcomes configurations centred on collaboration in care provision in clinical supervision environments.

Name	Context	Mechanism	Outcome	Data ID
CARE1	If ACP has experience in primary care	increasing awareness of relevant scope of practice within the team	leads to improved confidence and job satisfaction	PR15.1
CARE2	If ACP has relevant capabilities for primary care	recognition of contribution to the team	collaborative care with supervisor and GP team	PR16
CARE3	Population has an unmet need for health care	patients' confidence in ACPs capability to manage health care problems	increased continuity of care for patients	POP7
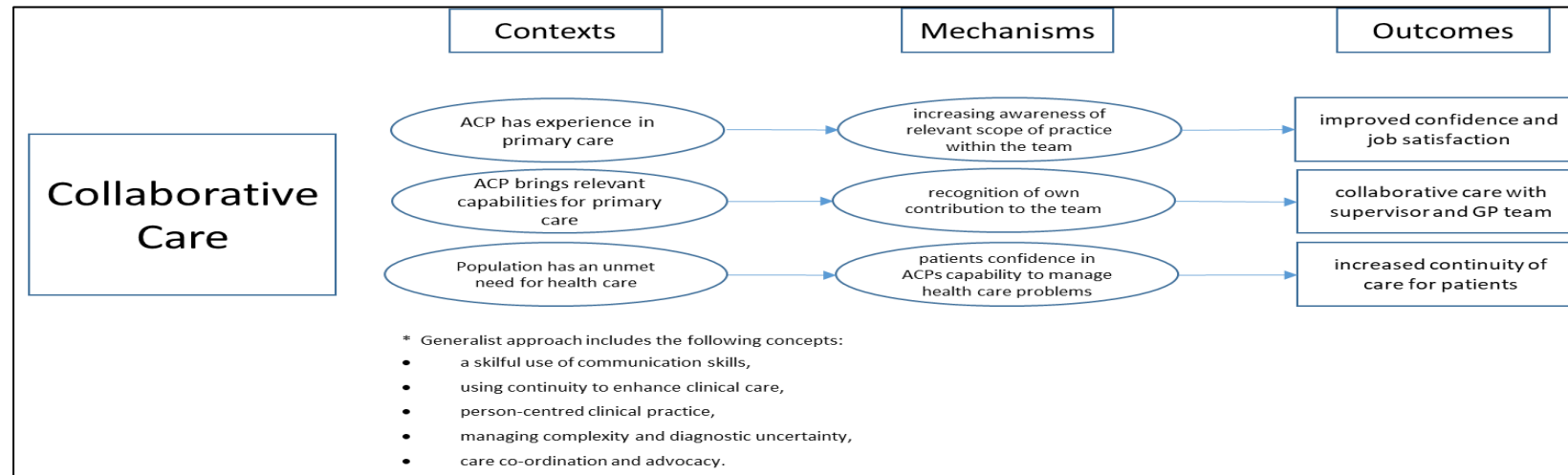
Figure 35 Context-mechanism-outcome configurations associated with integration into care processes in the clinical supervision environment.

12.2.7   Section summary

This section has presented the generative mechanisms identified in the clinical supervision process that support or inhibit the successful integration of ACPs, along with examples of the evidence that supported each mechanism. These mechanisms are clustered around six supervision themes.

- Establishing a sense of safety.

- Developing mutual trust.

- Sharing thinking and clinical reasoning.

- Promoting reflection through feedback.

- Allowing opportunities for self-direction.

- Practicing collaboratively.

It is apparent that relatively more CMOCs were identified relating to establishing safety and trust. It took a significant amount of time (and effort) for individuals to be in a position where they were re-assured that the process was safe for everyone and to trust with those they were working with. The mechanisms that helped establish a sense of safety and mutual trust are closely related, but presented separately as one relates more to the environment and the other, to individuals.

When supervision time is less pressured, (and is in safe environment and trusting relationship) the ability to share clinical reasoning becomes another important catalyst for learning through reflective practice. The sections on the sharing of clinical reasoning and reflection indicate the mutuality of mechanisms relating to these two themes. Outcomes of the generative mechanisms related to the sharing of clinical reasoning were closely linked to some of the triggers for mechanisms relating to reflection that drove deeper clinical learning and an understanding of generalist care.

The final two themes had less mechanisms identified within them. These are arguably more relevant later in the integration process, where practitioners are developing confidence in their new role, negotiating shared management plans with patients, feeling valued by the team and the patients they are seeing and contributing in an integrated way to the care provided. However, they were not confined to later in the process.

Though the mechanisms identified structured in the six themes described above in order these should not necessarily be seen to be part of a sequential or linear process. Mechanisms will be inter-related to each area, operating independently and together throughout the process. Each practitioner brings different aspects to the supervision relationship, each supervisor has a different approach (and is more or less experienced), each learning environment offers different levels and

arrangements for support, whether that was within the practice or through and external preceptorship or education provider.

For instance, ACPs that brought particular useful skills could feel they were contributing significantly to care from the outset. An example of this might be the ACP from a mental health nursing background who developed a significant contribution to mental health care after a few weeks. Another example might be that when circumstances changed in a practice, even though the ACP had been there some time, mechanisms relating to re-establishing safety and trust were triggered which had not been active for some time.

The next section revisits the background themes in the IPT, reminding us that the clinical supervision will be taking place in different practices, with different levels of experience of supporting new learners and different cultures. These additional themes (and some mechanisms) identified are important as they create many of the contextual elements that related to mechanisms in the supervision process.

12.3 BACKGROUND CONTEXTUAL THEMES

This section describes evidence identified relating to the other major situational themes in the IPT, which provide a backdrop for the clinical supervision. In order to navigate this section results, figure 26 in section 10.2.3 showing an outline of the final IPT, should be reviewed. This provides a useful map and a reminder that the focus on clinical supervision mechanisms takes place within a complex environment.

Even though these aspects were not targeted in the interviews, there was evidence suggesting some identified and new mechanisms within these elements were operating. Where this is the case, those specific CMOCs are described with examples of the qualitative evidence supporting them. These themes and mechanisms are therefore important as a reminder that the clinical supervision does not take place in isolation. They are seen to generate many elements identified in the CMOCs within the clinical supervision process, particular contextual elements.

The data is presented according to the three broader themes identified in the IPT.

- Practitioner
- Practice team
- Population served.

Within the population served section, the information gathered from the practice and participation group is discussed, to allow their voice to frame the analysis of the evidence for this theme.

As the period of data capture spanned many of the changes to healthcare in the UK that took place during the COVID-19 pandemic, the final section considers how these changes may have affected the other areas are covered. A brief discussion of how the findings relate to data captured during such a disruptive period for health services is discussed in chapter 14.

12.3.1 Practitioner

There were three themes identified related to the practitioner. These related to previous experience and roles prior to starting out as ACPs (and the recognition of capabilities useful for the role), levels of anxiety about their adequacy for their new roles and their employment arrangements, in particular whether they were employed by the practice or by another organisation such as a primary care network. Some themes appeared to be quite specific to ACPs from particular professional backgrounds whereas were more generalised across all roles.

There was a general sense of lack of preparedness across the ACPs for a new first contact primary care role. This was particularly strong for the PA ACPs that were interviewed, some of whom had joined their practices straight after graduation without any previous experience.

> *I suppose it was things that I'd seen in my training erm, with erm what I'd come across before and I suppose it was more suppose what was on my matrix … and I suppose in GP, what, what I found was, there's a lot of things that are not on that matrix. (ACP2, PA)*

Contrasting this, paramedic ACPs who had a number of years' experience, seemed to recognise specific learning that they found useful when working in general practice. This was mainly related to managing uncertainty.

> *I was already encountering a bit of the greyness of "I think its bursitis. I don't think it's septic arthritis" but there is that kind of risk management and safety netting around it involved, so it's things like that as well really. (ACP10, Para)*

ACPs from nursing background reported familiarity with their environment and less uncertainty about their preparedness but could see they were making an important transition within their teams and that it would take time for others to see how their skills translated to the new role.

> *I think because I had done five years as a practice nurse prior to doing the official ACP course, I found at the very, very beginning it was quite hard for people to see me in a different capacity. (ACP13, Nurse)*

12.3.1.2 Practitioner anxiety

Practitioners described significant levels of anxiety and lack of confidence as they started their new roles. The different levels of prior experience clearly affected levels of anxiety. ACPs from PA backgrounds stood out from the other roles with respect to the levels of anxiety when seeing patients in practice. This anxiety was driven in part by the fear of being judged inadequate by their supervisors.

And it was always that oh are they- are they gonna judge me? Are they gonna be kind of questioning my- oh he's asking a lot of questions, (yes) and that was more on me probably than on them. (ACP1, PA)

I knew, I think, what I was comfortable with, so I suppose the more common acute things, and it was the erm the more complex patients, which were a bit more scary I suppose for me and erm how to manage with, with the GP. (ACP2, PA)

GP supervisors recognised the effect of this anxiety and lack of confidence on the practitioner, but also on how patients felt after seeing them.

she looks quite anxious a lot of the time and I'd like to see her become more relaxed and more sure of herself and more able to voice her opinion and, and, erm, yeah, because, I think the patients pick up on that. (GP6)

A sense of inadequacy was not limited to PA ACPs. Other ACPs with greater experience also described a sense of inadequacy at the beginning of the transition to their new ACP role.

because it was a huge learning curve - I suppose for me that need to build trust in myself and I deserve to be in post and I did actually have all of this 27 years' experience to bring to it and, yeah, I did deserve to be there, because that is that imposter syndrome, isn't it, it's that definite felt like a complete duck out of water. (ACP9, Para)

12.3.1.3 Employment

New ACPs were employed in one of two ways; either by the practice directly (which would often make their supervisor one of their employers) or by the practice network (which would mean their line-management within the organisation was less directly linked to their supervisor). These arrangements might affect other conditions of employment, such as the number of buildings they were working out of, the number of supervisors that were involved and the subsequent continuity of supervisory relationships that were possible. Practice managers (PMs) identified that employment arrangements were important in relation to how easy it was to provide supportive arrangements.

And it almost feels at the moment like it's becoming a separate entity to the practices and
these staff are probably going to be even more isolated from the practices, but that is just my
experience and other people in different PCNs or different areas might be experiencing
something totally different. (PM3)

12.3.2 Practice team

Several themes relating to the practice and its team were identified in the interviews. One of the
most commonly mentioned by GP supervisors and new ACPs was how working in a practice with
experience as a training practice made the organisation and supervision processes a lot smoother for
the whole team; this led to a collective confidence in the safety of having new learners in the
practice.

12.3.2.1 *Team experience in clinical supervision*

The data suggested a new mechanism not described in the IPT was operating within some primary
care teams.

If practice has experience and expertise in supervision [C] confidence in availability of support [M]
reduces anxiety within the team [O] (T101)

This was evidenced by the triangulation of a sense of safety between different members of teams
experienced in clinical supervision.

> *we've got a really strong history, background, ethos in teaching and training so our patients are quite used to coming in contact with trainee practitioners, and we've no concerns over at least twenty, twenty-five years of being a training practice. I think we've got our systems robust enough that we can make sure patient safety isn't compromised. (GP9)*

> *given that I've got the experience from the previous practice I think that this is the perfect environment for a practitioner to develop into primary care skills I don't think without it being a training practice like I can happily and competently be in a practice and know what to do even if I can't manage that patient. (ACP3)*

> *we're used to training, used to debriefing, used to supporting and sponsoring and used to that culture – I think they find it a lot more – they can incorporate it better because it's already part of their workload to be supervising and sponsoring and mentoring and checking on new staff. (PM3)*

As will be described in section 12.2, the outcome of this mechanism became an important contextual factor for some clinical supervision mechanisms, particular early on in the process. Experienced supervisors reported greater confidence in helping learners who were unsure of their own relevant capabilities for general practice setting transition into primary care environments.

12.3.2.2 Having other ACPS in team

There was also evidence to suggest another potential CMOC described in the IPT was operating related to the number of ACPs or near-peer clinical learners there were within the practice teams.

If the clinical team includes a number of ACPs [C], the availability of peer-support [M] leads to improved confidence and/or job satisfaction in new role [O] (SP7-1)

To frame this mechanism, one ACP remarked how lonely the role could be:

> *it's a very, very lonely role, because I have nobody to talk to about my position, or what I'm doing and learning (ACP3)*

In contrast, a number of ACPs recognised that having people in similar roles and positions in the team and the support this provided made a big difference to how they felt about work.

at the beginning I would always go to the Nurse Supervisor because it would always feel more comfortable going peer to peer. (ACP13)

I think particularly because we are spread across five sites, sometimes I don't see colleagues who work at the other site. So that's quite nice, you always feel you're in touch, you can always ask a question and someone will give you a really quick response (ACP8) – talking about a WhatsApp group for non-medical practitioners

12.3.2.3 Pressure

The pressure from demand for services that practice teams were under was reported by all the practice managers, no matter which deprivation quintile the population they served. None felt they had the team or resources to meet demand.

there is just an unrealistic expectation of demand at the minute. We're never going to get there, we're never ever going to meet demand, we know that, (PM1)

I think there's still far too much demand for what resources we've got. (PM2)

This pressure triggered an important CMOC described in the IPT that increased the stress and anxiety for new ACPs significantly. ACP interview data corroborated that this was likely to be the case.

If clinical team is under pressure to deliver greater access [C], focusing additional capacity from new ACP delivering access [M] leads to increased stress/reduced job satisfaction for ACP [O] (T9)

and one of the things that's come out in some elements is that when you are struggling for capacity and demand is high – that with the best will in the world people are just sent to see somebody. (PM4)

it felt like reception had kind of gone "Oh there's a space on [name 1]'s list. We'll put you in". So it was one of them moments and it was kind of like "This is not my role." (ACP13)

I think I've just kind of had to go along with kind of how things are set up, how it's managed and kind of sometimes you can feel quite out of your depth. And I think sometimes there isn't always that debrief time to recognise complexities (ACP8)

The stress ACPs were feeling was evident and in some cases, it seemed that it was leading to symptoms suggesting burnout. One ACP had decided to leave the role they were in due to the

complexity of cases they were seeing without sufficient support. As described next may also have been made worse by adaptations made in the wake of the COVID-19 pandemic.

> *it's not the kind of job you should be doing full time, and, you know, like most GPs will do 8 at the most, won't they? I'm there five days a week, (Yeah) there's no let-up - there's no let ups at all. (ACP3)*

> *January last year I went off sick for a month with stress because I'd be getting whole things coming in that I didn't know what to do with, blood results, all the letters and things, and all the tasks and they'd be piling up and piling up and piling up and it got to a stage where it wasn't sustainable for me anyway. (ACP10)*

> *[Interviewer: Is there anything else about you deciding to leave the post that's related to the supervision and support?] Respondent - Um...only if I was to say anything is that I know in other surgeries there's less of an emphasis on the debrief but you actually see less complex patients and you still can get support, so yeah, (ACP8)*

12.3.3 Population

This section describes what evidence there was that gave some insight into population contexts. It is recognised that the sampling means that themes related to the population would be opinion and reflections from practitioners and supervisors and therefore will not provide as strong evidence as the other areas.

12.3.3.1 Patient awareness of new ACP roles.

Some data suggested the lack of awareness of patients about the new roles adversely affected the confidence patients had when seeing a new ACP over a GP and this had effects on the clinical interactions and subsequent clinical supervision.

Here, there was some evidence that a potential CMOC in the IPT within the population category was operating:

If population unsure about what ACP role can offer [C] established confidence in role of GP [M] leads to requests to see GP instead of ACP when arranging appointments [O] (POP11.1.)

This appeared to mean ACPs had to work a lot harder to earn trust with many patients because they were not doctors or working in an established, recognised and widely understood role.

I suppose it depended on the patient in front of me as well, and how receptive they were cause sometimes half the consultation would be explaining who I was in my role. And convincing them that they were happy for me to talk to them. (ACP2)

I know one of the other ACPs last week had to specifically ask a family member 'can I ask you why I'm not good enough', because she was an ACP and not a GP, but the patient had been perfectly happy with her plan, it was the family who were saying 'well we want a doctor to see her instead'. (ACP7)

Explanation of the new roles could mitigate the effects of this mechanism but took time and effort. Where practices had tried to increase patients' confidence it was reported to be a challenge. However, when an organisation had put the effort, it was seen by both practice managers and GP to have been helpful.

I worked in a practice that found it difficult to get new GPs, so it became almost the long-term plan and the pyramid where it were ANP delivered with a couple of GPs on top – and getting them to accept an ANP was quite capable of diagnose, treat and medicate minor ailments, etc., was really, really difficult. (PM4)

we've done a fairly good job I think of giving the impression that our ACPs have specialist skills that some of the doctors won't necessarily have and actually they do a great job and I think the patient groups, we've had them long enough that the patient groups kind of understand that. (GP8)

However, the action some practices took to overcome these difficulties seemed faced less focused on empowering patients with relevant information about the ACP roles and more about disguising the differences.

But yeah, we purposely call them clinicians. When they phone up to ask us around urgent care to be seen on the day, they will be told a clinician will phone them back. (PM1)

patients are told a clinician will ring them back, they're not told a doctor will ring them back. But they, and then for years they've assumed a lot of our nurse practitioners were doctors. (GP4)

12.3.3.2 Deprivation

Though not targeted in the interviews, some effects of differences in populations in more deprived areas on clinical work were recognised related to ethnic diversity and the increased burden of multi-

morbidity. These were highlighted by several ACPs, GP supervisors and Practice Managers that were working in the practices serving the highest quintile of deprivation.

Ethnic diversity, language and interpretation and a lack of alignment of knowledge and expectations of healthcare with what was actually available were mentioned by participants working in practices in the highest quintile for deprivation.

> *Some of the interventions that are on offer are specifically designed for British, educated let's say, populations, and I think some of the interventions are just not- they just won't work with them. So I think that that's particularly an additional challenge that you wouldn't necessarily get in other demographics in the city. (ACP4)*

The additional demands of increased co-morbidity and complexity (including mental health) were also described by GPs, ACPs and Practice managers who were working in practices in the most deprived quintile. In contrast, these issues were not aired in the interviews with practitioners in other practices.

> *patients with multiple comorbidities, patient who present with one thing but then when you're talking to them or when they come to see you they want every- they want everything done at the same time, but, erm, I only have half an hour, so, that's makes things harder. And sometimes they're not happy with that so that makes me feel bad. (ACP6)*

> *I mean you can imagine our patient population, we have huge complexity, they're not your average set of patients … and it is a few times, quite often and particularly the physician associates and the advanced nurse practitioners, who will take on a pretty complex case that does fall outside of their remit. (PM1)*

12.3.3.3 Discussions with patient participation group

Two patient and practitioner meetings were facilitated through the Sheffield Deep End patient participation group. The first was on-line (four participants) and the second face-to-face (two participants). The key researcher with notes and reflections taken after the meeting (see appendix 9). Comments were similar in both groups and are presented together.

People supported anything that provided more services, alleviated the pressure, and were aware of similar approaches in other countries. There was a strong desire for continuity of relationship with a practitioner, with patients describing how they did not mind who they saw, but wanted to see the same person again next time if they chose. Personable skills were very important. One commented

that it was possible to get a better service from a non-GP at a practice. However, it was recognised that some patients did feel they would get an inferior service if they did not see a GP.

It was suggested this professional stigma about other practitioners needed to be challenged. Practices needed to take more care about described what the different roles were and allow patients to make their own judgements about whom they trusted with their care. Comments were made about structural factors leading to hierarchical levels of status for different roles. The ability to prescribe was one thing that gave a practitioner greater validity with patients.

It was felt people usually knew whom they were seeing but some concern that receptionists might not understand the problem might give an appointment with an inappropriate person for the problem. It was important to avoid care becoming fragmented for chronic illness. The importance of cultural competence was mentioned, as sociocultural aspects led to different behaviour.

Patients also recognised that time to support their development and had no problems with practitioners seeking advice during, or after a consultation. They recognised that many practitioners may have previously worked in hospital and needed to adapt. They could see how it might be very stressful for a new ACP and that they would need support. One commented that the public were relying on those supporting the new ACPs to empower and develop them to use the skills to provide the best care possible.

12.3.4 COVID-19 pandemic

As the data was collected during the pandemic, changes in processes and delivery of care had affected how clinical work was allocated. One of these related to the pressure described above and the possible reduction in effective triaging of patients to the most appropriate practitioner. The other suggested that opening up new channels of communication between clinicians and patients facilitated some aspects of ongoing clinical supervision.

12.3.4.1 Increased workload and complexity

Several ACPs felt the way patients were triaged into their appointments following the pandemic meant that they were dealing with more undifferentiated cases.

we used to do the triage telephone list, discuss what I thought I could see from it or sometimes things would get put straight into my clinic if it was something they knew that I was more experienced with and then I'd have a list of people that I saw in the morning that came in, whereas obviously with COVID, it's changed that the telephone triage has become telephone urgent care appointments. (ACP11)

12.3.4.2 Flexibility for follow up.

The new methods of communication between clinicians and patients developed during the pandemic were reported as helpful as people were more familiar with information being given flexibly through different means of communication. This was particularly useful in facilitating alterations to management following debriefs by supervisors.

and they'd say oh, did you think about X- X, Y, Z, this condition, or oh actually, did you double check about kind of bowel symptoms or anything like that? And then I'd think oh well, no I didn't, and then I'd have that kind of give them a call back, double check, which I think is a lot easier now because of COVID, everything's on the phone (ACP1)

you might talk to the PA or the nurse who'll have a quick word with the doctor and then ring you back. So, that's an interesting thing as well, isn't it, because (yeah) we're working in a much more fluid kind of (yeah) team-based way. (GP4)

12.3.5 Section summary

These findings relating to the practitioners, practice team help provide a backdrop for the clinical supervision mechanisms that were the focus of the evaluation. These are summarised in table 19.

The major themes relating to the practitioners was their sense of inadequacy in delivering safe care to patients and the anxiety created. The CMOC in which patients request to see GPs or other practitioners might only be expected to exacerbate these feelings of inadequacy. This is important as it helps explain why some of the mechanisms relating to establishing safety and confidence in one's abilities are identified so clearly at different stages of the supervision process.

Table 25 Important background contextual themes identified for individual ACPs with contributory background factors.

Practitioner contextual themes	Contributory background themes	
Previous experience **Self-confidence** **Anxiety** **Employment arrangements**	Deprived populations	Ethnic diversity Multi-morbidity
	Practice team	Experience in supervision Number of ACPs within team Pressure and demand
	Adaptations to COVID-19 pandemic	Inappropriate triage Opportunities for flexible follow up

The findings relating to the practice team suggest the current demand is leading to increased pressure, stress, and anxiety within the work environment. The effect of this pressure (and the changes to care after the pandemic) triggered mechanism that meant that ACPs were frequently seeing patients that were at the limits of their clinical capabilities. A practice team experienced in providing supervision support in such circumstances was an important context that triggered mechanisms that mitigated the stress this created for the ACP. This may help explain why so many mechanisms relating to safety and trust were found. It also relates to the main inhibitory mechanism identified with respect to pressure of time, which was the lack of time to share clinical reasoning during supervision. The loneliness of the role in a team where there are few practitioners who you can identify closely with from a professional perspective was identified along with how much peer support is appreciated.

A mechanism relating to the population was probably operating where patients would often prefer to see a GP and that this was partly driven by the familiarity and understanding of the role and what a GP might offer. Explanation about the new roles could change the context and make it less likely for this to happen, but some explanations provided to patients seemed to obscure the differences in roles rather than educate patients about them. The patient group discussions supported many of the

themes above, and they confirmed that patients were simply seeking continuity with competent practitioners. The patient group also challenged some of the hierarchical structures within practices and suggested it was an important responsibility for senior clinicians to make the time to supervise less experienced members of the team.

Changes made due to the COVID-19 pandemic seemed to have created conditions where ACPS felt more stretched, but also had made it easier to communicate with patient through a variety of means.

Overall, these background themes suggest a difficult environment for the start of a clinical journey that involves adapting your clinical practice to a new role, often in an unfamiliar clinical environment and sometimes with a lack of with co-ordinated support.

PART FIVE: REFINING THE PROGRAMME THEORY

This part describes a final process in the research programme. The results of the analysis are used to refine a programme theory for clinical supervision that helps to describe what mechanisms operate to support the integration of ACPS into primary care team and explains how this might be relevant for other learning environments. It also considers the strengths and weakness of the research programme and how the findings fit with other literature on clinical supervision.

It comprises two chapters.

Chapter 13 describes a programme theory model developed from the themes and individual CMOCs identified in Chapter 12. It then discusses a number of examples of accepted middle-range theory in education and training including reflective practice, entrustment and concepts related to communities of practice. This alignment with established middle-range theory supports the plausibility of the programme theory as a valid representation of the mechanisms operating and the potential usefulness of the programme theory for other environments.

Chapter 14 further considers the validity of the findings and the refined programme theory. It considers the strengths and weakness of the research, compares the programme theory and mechanisms with the thinking in current literature on clinical supervision. It finally makes some recommendations for the development of clinical supervision and suggests some next steps for research.

13 A CLINICAL SUPERVISION PROGRAMME THEORY

This chapter presents the refined programme theory for clinical supervision during the integration of new ACP roles into general practice teams and some supporting middle-range education theory from education and training that suggests the programme theory is credible and potentially useful for other education and training situations.

Section 13.1 presents the refined programme theory.

Section 13.2 presents examples of accepted educational middle-range theory that support the programme theory.

13.1 A REFINED PROGRAMME THEORY FOR CLINICAL SUPERVISION

13.1.1 Structure of the refined programme theory

As described in section 11.2.2, an adapted model framework approach for qualitative data analysis was used. As the data was coded to previously identified CMOCs in the initial programme theory, or when new demi-regularities suggested new CMOCs, higher-level themes for the programme theory were identified around which the mechanisms naturally clustered. These higher-level theoretical themes developed the structure of the refined programme theory for the clinical supervision process, with each higher-level theme holding a number of CMOCs within it. The themes were:

- Establishing a sense of safety.
- Developing mutual trust.
- Sharing thinking and clinical reasoning.
- Promoting reflection through feedback.
- Allowing opportunities for self-direction
- Practicing collaboratively.

The refined programme theory is presented according to these higher-level themes, with descriptors of important CMOCs in each cluster in Figure 37. A detailed description of all the CMOCs identified has been presented in the previous chapter.

Team aspects
Pressure and demand, Skill-mix, Experience and organisation of supervision

IMPORTANT LEARNER CONTEXTS

Experience
Self-confidence
Capability
Profession
Employment

Establish sense of safety
(practitioners, team, patients)

Confidence in relevance of previous training

Mutual agreement of job plan & role

Confidence in availability of supervision

Share thinking processes

Supervisor models person-centred clinical approach

Opportunity to identify developmental needs

Promotes confidence to increase clinical challenge

Learner self-direction

Learner develops sense of autonomy

Recognition of contribution of learner

DESIRED LEARNER OUTCOMES

Clinical development
Authorship
Job-satisfaction
Generalist approach
Contribution to care

Develop mutual trust

Managed exposure to clinical challenge for supervisee

Supervisor trusts learner will ask for advice appropriately

Non-judgemental supervision conversations

Promote reflective practice

Opportunities for varied clinical experience

Providing regular objective feedback

Creating opportunity to meet with peers

Practice collaboratively

Appreciation of contribution to service (practitioners, team, patients)

Learners increasing awareness of developing scope of practice

Mutual anxiety

Supervisor uncertain about necessary capabilities

Learner fear of inappropriate allocation of clinical cases

Time pressure

Limits sharing of thinking processes

Inconsistent support

Scepticism towards appropriateness of role within supervision team

Lack of communication with supervision team

Population aspects
Multi-morbidity, Ethnic diversity, Information about clinical roles & supervision

Figure 36 A Programme Theory for how clinical supervision can help learners integrate to support general practice.

216

In addition, there were higher-level themes that inhibited the successful integration of learners into teams. These themes described conditions in which the underlying mechanisms generating positive outcomes were less likely to operate. These were:

- Mutual anxiety
- Time pressure
- Inconsistent support

Important underlying mechanisms within each higher-level theme are shown. These mechanisms seemed to be operating most actively or affected outcomes more strongly. Each one corresponds to an identified CMOC described in chapter 12, but for clarity of illustration, is not described fully in CMOC format. There were also some effects of the COVID-19 pandemic on the supervision processes. However, these are not described in the refined programme theory, as the important effects were captured within individual CMOCs.

13.1.2 Explanation of mechanisms according to themes.

Safety and trust
The generation of a sense of safety and trust are supported by a developing, mutual understanding and appreciation between the supervisor and learner. A sense of safety is generated by confidence in relevance of previous training, confidence in availability of support for new training, and mutual agreement on these. Mutual trust is generated by the demonstration in practice that the agreement is being adhered to, that the learner is not placed out of their depth too often, that they are aware of where and when they need help, that support is available as agreed, and that requests for support are responded to without judgement. Though these are described together here, there did seem to be two separate themes, one relating to a background sense of safety in the working environment, the other a more active sense of trust that people were actually responding in a helpful and supportive way.

Sharing thinking
An important mechanism that generates the transformation to a more generalist clinical approach in a new practitioner is promoted by explicit modelling and explanation of the thinking behind person-centred clinical decisions, particularly when management is altered during supervision conversations. When thinking between clinical learner and supervisor is shared openly, development

is also supported through two other mechanisms, accurate identification of developmental needs and confidence to explore greater challenge.

Promoting reflective practice

Another mechanism generating transformational development recognised in middle-range educational theory is reflective practice on experiential clinical learning opportunities. Maximising the (safe) exposure to these clinical opportunities supports this. It is also promoted through regular objective feedback, framed in generalist principles for healthcare. Opportunities to reflect on their experiences with peers can support a deeper reflection and understanding of their ongoing clinical learning trajectory as well as aspects of their clinical practice.

Self-direction and collaboration

A developing sense of autonomy and confidence increasingly allows the clinical learner to self-direct their own practice and requests for support. This is supported when the supervisor recognises the increasing contribution to care the clinical learner is providing, as it leads to increased permission for the learner to direct their own practice and supervision in this way. This increased appreciation of the clinical learner's contribution can then generate an increase in collaborative practice between supervisor and learner. The skills, capabilities, and availability of the clinical learner and supervisor are then used synergistically to provide care for individual patients. The learners developing awareness of their relevant learning also supports this collaboration.

Mechanisms that frustrate successful integration

Inhibitory mechanisms that frustrate a successful integration relate to mutual anxiety about the safety of care, pressure on available time for supervision and lack of a consistent approach by a supervisory team. Significant levels of anxiety are generated by uncertainty and fear. The supervisor may be uncertain of the role of the clinical learner and their requirements, the clinical learner fearful that the supervisor (and wider team) do not understand their safe scope of practice and that this will mean they will be put in difficult and stressful clinical situations. The pressure of time affects the likelihood of many of the developmental mechanisms operating, but clinical learners particularly recognised the negative impact on the degrees of clinical reasoning shared within the supervision conversations. Inconsistent support from a supervisory team undermined trust and meant that clinical learners had to work to navigate the system more carefully to get what they needed to feel safe. It seemed to be primarily fed by lack of communication between supervisors and a lack of collective commitment to the process.

Relationship to the initial programme theory

Though concentrating on the clinical supervision process, this new refined programme theory can be seen to be derived from the broader initial programme theory described in section 3.

- Key contextual factors identified in respect to the ACPs as new clinical learners are captured on the left. These were identified in the initial programme theory and subsequently found in the data as described in chapter 12.

- Desired outcomes of the intervention are captured on the right of the programme theory.

- Important situational themes related to the population and team are captured at the top and bottom. These are not described in detail but do contribute to the conditions for CMOCs to operate in the clinical supervision process.

13.2 SUPPORTING MIDDLE-RANGE THEORY

The refined programme theory is supported by a several middle-range theories related to learning in workplaces. This increases the likelihood of the programme theory representing the real world and suggests it is transportable to other learning environments (Pawson, 2000).

This section does not to discuss these middle-range theories in depth but demonstrates the 'connection' between certain important middle-range theories and the refined programme theory. Mainstream middle-range educational theories around reflective practice, entrustment, professional identity formation, legitimate peripheral participation and a strengths-based approach are highlighted.

One particular theme cluster of mechanisms identified involves articulating the rationale behind clinical decisions derived from a person-centred approach. As the overall success of this intervention involves ACPs adapting to, and adopting a person-centred approach to support generalist care, these mechanisms are particularly important. Some recently identified realist theory on how developing clinical practitioners are supported to adopt this approach is therefore also described.

13.2.1 Reflective practice

The concept of reflective practice is accepted as a critical part of clinical learning. Then GMC suggest that reflection empowers clinical learners to *'demonstrate insight to identify actions to help learning, development and improvement of practice'* (General Medical Council, 2019)

Though first described by Dewey in 1938 as a method of learning, a more commonly used model is Kolb's experiential learning cycle of experiencing; reflection; thinking and acting. This describes how a clinical learner is taken through a process of reflecting on a particular clinical experience, conceptualizing what happened and why before actively adapting to new ways of working in the future (Kolb & Kolb, 2013). Schön (2017) suggests learning through reflection involves an interaction between reflection-in-action and reflection-on-action. The former recognises the active adaptation of thinking and behaviour whilst actually practicing, the latter the thoughts and feelings when reflecting back on a former event, in a similar way to that described by Kolb (Schön, 2017) .

There is little evidence in the data collected to demonstrate reflection in action, but the processes of Kolb's experiential learning cycle and Schön's reflection-on-action is easily recognised in mechanisms related to sharing thinking, feedback, reflection, and self-direction.

13.2.2 Entrustment

In healthcare education, ten Cate and others developed a middle-range theory of entrustment and *'entrustable professional activities'* (EPAs) (ten Cate, 2013; Cate *et al.*, 2016). This theory suggests that entrusting a learner increases levels of participation and builds confidence. Though there is growing interest in how a learner's clinical contribution to care can be built around EPAs, much of the research underpinning the theory is from secondary care environments such as surgery and anaesthetics. When entrustment is explored in primary care, the current approach to EPAs needs adapting as it is more closely interweaved with daily clinical oversight, trainee approach to learning and patient safety (Hauer *et al.*, 2014).

As trust is conferred, conditions for increasing 'independence' in practice are established, as direct and close supervision becomes post hoc supervision provided later. A lack of trust can therefore hamper a clinical learner's development towards self-direction and unsupervised practice (ten Cate, 2013; Cate *et al.*, 2016). Developing trust in a supervisor also builds confidence in a clinical learner and affects the perceived fairness of evaluations of performance and effective responses to feedback (Hauer *et al.*, 2014)

The relevance of theories relating to trust can be seen throughout the programme theory, particular earlier on in the supervision process but also in the ongoing availability of appropriate support.

13.2.3   Professional identity formation

All practitioners making a transition to become effective primary care clinicians have to undergo some form of re-adjustment of their professional identity. Cruess et al (2015) suggest that practitioners come to a healthcare context with existing personal identities that are in part shaped by personality, social characteristics and previous education and training. Stages of identify formation involve a practitioner moving from being '*an individual who can assume professional roles but is primarily motivated to follow rules and to be correct'* to someone *'who can assume a role and enter into relationships while assessing them in terms of self- authored principles and standards'.* It is through a period of supervised legitimate peripheral participation in the new community of practice the professionals undergo a period of 'negotiation', which ultimately develops their new professional identity. (Cruess *et al.*, 2015).

Key drivers of this transition have been shown to be role models, opportunities to experiment, guided reflection through formative feedback, and candid discussion on differences in approaches to practice within a safe environment. (Goldie, 2012; Wald, 2015).

The relevance of this middle-range theory can be seen in mechanisms related to sharing clinical reasoning, feedback, and a greater self-direction in the processes of supervision and care.

13.2.4   Legitimate peripheral participation

Learning through legitimate peripheral participation relates to situated learning in communities of practice (Lave and Wenger, 1991; Lave, 2010). Learning is seen as the socially constructed development and evolution of new knowledge and practice through a renewed set of relations with others and the world. This form of learning promotes the development of knowledge as subjective, as well as objective, and considers 'knowing' to be fully articulated by particular actions by individuals in specific circumstances.

Legitimate peripheral participation implies being invited to be involved in new activities, tasks, and functions as you enter a community of practice. This then allows a learner to master new understandings within the new context and its associated relationships. Accepting this invitation enables this form of learning for generalist care requires learners have as broad a range of clinical experience as possible. It is also recognised that increasing the peripheral participation of learners

can subsequently reduce the demands on other members of the community (i.e. the supervisors) (Lave, 2010).

Aspects relating to this theory are seen throughout the programme theory but particularly in the parts that encourage self-direction and collaboration.

13.2.5 Strengths-based approach to supervision

A strengths-based approach to supervision is one that looks to the strengths of a clinical learner rather than focusing on their deficiencies. Shown to be useful in social work and nursing, it also empowers the learner (towards self-direction) and encourages collaboration (Cederbaum and Klusaritz, 2009). Learner's strengths are identified and maintained through positive feedback and opportunities sought to utilise these strengths to deliver desired outcomes (Aguinis, Gottfredson and Joo, 2012).

Adopting a strengths-based approach also relates to the judicious use of feedback. Feedback on performance focused on future development is often accepted more readily and leads to more rapid changes to practice. Feedback focusing too narrowly on deficiencies in performance is less productive in establishing changes to practice (Dilworth *et al.*, 2013).

A strengths-based approach to supervision may support conditions that trigger mechanisms related to trust, self-direction, and collaboration. Tailoring feedback to future development might be frustrated if there are uncertainties about previous training or a practitioner's ongoing professional journey and destination due to inter-professional differences.

13.2.6 Articulating a generalist approach to care.

In chapter 1, the concept of medical generalism was explained and the importance of this from an NHS systems perspective was described. A fundamental principle of generalist care important to patients is that it seeks to maximise a person-centred care approach (Royal College of General Practitioners, 2012).

To practice person-centred care, practitioners need to consider the information presented to them as a whole, rather than breaking it into parts. This includes considering clinical information, processes of care, personal circumstances, and relationships before deciding how to define the problem and how to respond in that particular context and at that time (Royal College of General Practitioners, 2012). Person-centred care also supports people to manage their own health and wellbeing through co-ordination and planning of support (Fagan *et al.*, 2017).

A recent realist review of educational interventions to develop person-centred care identified that a clear explanation of the rationale behind a generalist perspective was one important mechanism that supported learners to develop this approach (Bansal *et al.*, 2021). For clinical learners already minded to this perspective, this supported the endurance and development of this perspective, for those that were initially challenged by a person-centred approach, it was through a clear explanation that deeper reflection that could lead to an adaptation in approach and perspective was made possible.

Such mechanisms can be seen in the areas of programme theory related to the importance of a discursive space, where the rationale for a person-centred approach and the use of continuity as a useful clinical tool are discussed.

13.3 CHAPTER SUMMARY

This chapter presents the refined programme theory for clinical supervision of new practitioners in general a practice setting that supports their integration into general practice teams. The important theoretical themes around which the supervision mechanisms clustered are described, along with summary descriptors of the individual mechanisms related to each theme.

Though it is important to recognise the nonlinearity and interdependency of the mechanisms acting during the supervision process, the refined programme theory arguably follows a logical pattern relating to an educational process. This logic is summarised in table 26.

Table 26 Showing how each theme identified in the related to a logical step that supports education and development.

Clinical supervision theme	Logic relating to refined programme theory
Establishing a sense of safety	It's difficult to focus on learning unless you feel in a safe environment;
Developing mutual trust	It is easier to share your thoughts if you trust the other person to respect them;
Sharing clinical thinking	Understanding the rationale for doing something differently deepens reflection;
Reflection on clinical experience	Reflection on experience allows a recognition of your strengths and how you might do things differently in future.

Self-direction and authorship	Active experimentation (through self-direction) is an important part of cementing your learning into your future practice;
Collaboration in care	Recognition of your contribution to a team gives you confidence and job-satisfaction.

The programme theory can be seen to be derived from the initial programme theory, but as the focus of the evaluation has been on clinical supervision this aspect is elaborated with more detail and is better understood. Each individual mechanism described with the programme theory structure can be tracked back to the empirical data; many can be tracked back to the initial theorising at the beginning of the evaluation, even if in a modified form. This increases the likelihood of these mechanisms existing as independent phenomena. The refined clinical supervision programme theory is also supported by several middle-range theories related to learning in workplaces; this increases the credibility of claims that the programme theory mechanisms represent the real world and suggests it is likely to be transportable to other learning environments.

The final chapter explores some of this discussion more deeply.

14 DISCUSSION AND CONCLUSIONS

This chapter discusses the implications of findings presented and draws conclusions and recommendations from the research. The strengths and weaknesses of the study are discussed and a comparison between the refined programme theory and current understanding of clinical supervision is made, with recommendations for future direction and research in the field.

Section 14.1 explains the contribution to knowledge that this research has generated.

Section 14.2 discusses the strengths and limitations of the study. Key strengths are presented with respect to realist approaches to evaluation (Wong *et al.*, 2017). The limitations are discussed with respect to how these problems could have affected the findings, and what could have been done differently to mitigate them.

Section 14.3 considers how the findings compare with current literature relating to the supervision of new health professionals in primary care. Middle-range theories in education and training that support the programme theory have already been discussed in chapter 13. This section considers the findings in relation to evidence related to supervision of non-medical practitioners in primary care and similar healthcare environments.

Section 14.4 and 14.5 make recommendations, based on the findings of the research, and suggest some future direction for research into clinical supervision in the future.

Section 14.6 concludes the thesis and suggests the findings potentially have relevance for other clinical learning settings.

14.1 CONTRIBUTION TO KNOWLEDGE

This research is the first realist evaluation of how clinical supervision works and therefore the first to identify *generative causal mechanisms* that support or frustrate intended outcomes from clinical supervision in practice. It produces a novel programme theory for supporting the development of generalist clinical practice for future primary care health practitioners through clinical supervision. It is the first study that identifies what mechanisms may be operating, for whom, in what contexts and what outcomes might be generated during the supervision of practitioners new to generalist clinical

practice. It therefore adds to our knowledge and understanding of the ways that practitioners who are moving to new, unfamiliar contexts of practice, and adapting roles, can be supported to reframe their practice and to internalise the adaptations required in their new roles. Perhaps most importantly, this study adds to the knowledge about how such practitioners can be supported to contribute maximally to healthcare for the public.

The described mechanisms and additional theory generated through this research align with middle-range theory on education, training, and professional development. This suggests that, in addition to healthcare settings, the developed programme theory and CMOCs within it are likely to be relevant for other learners in unfamiliar and risky environments.

14.2 STRENGTHS AND LIMITATIONS

14.2.1 Strengths

The strengths of the study are considered to be in a number of areas. The detailed consideration of the purpose and scope of the study, and the way it was able to concentrate its fire on one particular aspect of the intervention, the adherence to scientific realist principles and the focus on generative causal mechanisms (in design, analysis, and reporting) and the effective use of programme theory.

14.2.1.1 Evaluation purpose and scope

The purpose (and importance) of the evaluation is clearly articulated in part one; a complex intervention is being implemented across UK primary care with limited evidence for whether it will work, and there are concerns about adverse effects on the quality of healthcare services and the equitable provision of healthcare. The focus of the evaluation is to explore what mechanisms will support the intervention in achieving the desired outcome of successful integration to support generalist care. The evaluation question is described simply and practically.

In preparation for the empirical data collection stage, a further assessment of scope is undertaken which allows the evaluation to focus more deeply on an area of the intervention that is less well understood whilst considering the wider situational themes of the primary care environment. A purposive recruitment strategy is adopted in recognition of concerns that the intervention may lead to inequities in the quality of primary healthcare provided to populations with more or less socio-economic deprivation. Data was obtained from practitioners in 13 different practices, half of which were working in practices serving population in the most deprived quintile. This is likely to mean the

supervision processes were under extreme pressure due to demand and clinical complexity, and that the programme theory is credible for practices serving many different communities.

Three different roles were included, all of whom were taking on significant first-contact work but with varying amounts of experience and professional backgrounds with different philosophical principles of care. This supports claims that the programme theory is relevant for practitioners from different backgrounds. Paired samples allow a window into the supervision processes from the perspective of supervisor and learner. Broader contextual themes relating to the learners that might mean some mechanisms are more important for them (e.g. safety, reflection with peers) than others were identified. The stakeholder events and patient participation group helped provide a greater awareness of what was important to patients regarding the intervention, which were then incorporated into the analysis.

14.2.1.2 *Applying principles of generative causation*
An explanation of the philosophical principles of scientific realism and generative causation is provided in chapter 5. These are used as a foundation to the methodology adopted throughout the research, which keeps generative causal mechanisms, in the form of CMOCs at the centre of the programme. Where necessary, adaptations to the methodology that were used to maintain this focus. The hypothesised causal mechanisms could then be tested with a focused lens to establish their plausibility and credibility within the programme theory.

14.2.1.3 *Constructing and refining a realist programme theory*
The design and development of the programme theory is described clearly in part three, including a process of triangulating sources that informing the initial programme theory through retroduction, stakeholder input and a rapid review of the literature. The retroduction and theorizing that generated the IPT is described in detail in chapter 7. This includes a reflection on the author's professional experience in primary health care policy developments over the last 20 years. Reflexivity with respect to the programme theory generation and researchers' positionality to the intervention is provided.

The refined programme theory illustrates particular themes within the clinical supervision process, but also incorporates some of the individual CMOCs. However, due to the number present, they are not described in CMO format. The refined programme theory can be seen to be derived from the

hypothesised programme theory. Implications of this refined programme in terms of adaptations to the policy on clinical supervision are described.

14.2.1.4 Data collection and analysis

Care is taken in the methods for data collection (i.e. realist interview technique) and analysis to ensure that a rigorous realist approach is maintained that is driven by the theory and potential explanatory mechanisms generated.

A detailed description of adapted realist methods for data analysis through NVivo is described. Retroductive reasoning is described in detail to show how this informs the development and testing of the programme theory. During the analysis of data, space is allowed for new mechanisms to be identified as well as refine the initial programme theory. Where methods are adapted to show how the key features of qualitative data are linked to individual CMOCs and how the data helped refine the programme theory, these are described. More formal middle-range theory is described that links to the refined programme theory that increases its plausibility and suggests the refined programme theory is likely to be transferable to different clinical learning situations.

14.2.1.5 RAMESES II guidance.

The 2016 RAMESES guidance establishes reporting standards for reporting critical realist evaluations (Wong *et al.*, 2016). Standards for each area were then developed, which could be used to establish the adequacy of level of rigour within and evaluation to further establish the credibility of their findings (Wong *et al.*, 2017). Table 27 indicates where this thesis covers each of the suggested areas for reporting.

Table 27 Table indicating which chapter reports in each area required in the RAMESES II Guidance (Wong et al, 2017)

REPORTING AREA	MINIMUM STANDARD	Chapter(s)
INTRODUCTION		
Rationale for evaluation	Explain the purpose of the evaluation and the implications for its focus and design	1,2,3
Programme theory	Describe the initial programme theory (or theories) that underpin the programme, policy, or initiative	7,8,9
Evaluation questions, objectives, and focus	State the evaluation question(s) and specify the objectives for the evaluation. Describe whether and how the programme theory was used to define the scope and focus of the evaluation	3,6,10
Ethical approval	State whether the realist evaluation gained ethical approval from the relevant authorities	11
METHODS		
Rationale for using realist evaluation	Explain why a realist evaluation approach was chosen and (if relevant) adapted	4
Environment surrounding the evaluation	Describe the environment in which the evaluation took place.	6,11
Describe the intervention evaluated	Provide relevant details on the programme, policy or initiative evaluated	1,7
Describe and justify the evaluation design	A description and justification of the evaluation design (i.e. the account of what was planned, done and why)	5,6,11
Data collection methods	Describe and justify the data collection methods	10,11

Recruitment process and sampling strategy	Describe how respondents to the evaluation were recruited or engaged and how the sample contributed to the development, support, refutation, or refinement of programme theory	11
Data analysis	Describe in detail how data were analysed	11
RESULTS		
Details of participants	Report who took part in the evaluation, the details of the data they provided and how the data was used to develop, support, refute or refine programme theory	12
Main findings	Present the key findings, linking them to contexts, mechanisms, and outcome configurations. Show how they were used to further develop, test, or refine the programme theory	12,13
DISCUSSION		
Summary of findings	Summarise the main findings with attention to the evaluation questions, purpose of the evaluation, programme theory and intended audience	13
Strengths, limitations, and future directions	Discuss both the strengths of the evaluation and its limitations - provide guidance on future directions for the programme, policy or initiative, its implementation and/or design	14
Comparison with existing literature	Compare and contrast the evaluation's findings with the existing literature on similar programmes, policies, or initiatives	14
Conclusion and recommendations	List the main conclusions that are justified by the analyses of the data. If appropriate, offer recommendations consistent with a realist approach	14
Funding and conflict of interest	State the funding source (if any) for the evaluation, the role played by the funder (if any) and any conflicts of interests of the evaluators	14

14.2.1.6 Realist methodological development

In addition to the strengths highlighted above, in seeking to maintain transparency and rigour with respect to critical realist methods, potential methodological developments with respect to realist approaches have been developed. In particular, the author has not come across other reports where retroduction has been described in a similar way, nor where CMOCs have been tracked through a realist programme in a way that shows whether, where and when they were modified from the initial programme theory.

Evidencing retroduction

Retroductive theorising is an elusive concept for many and difficult to evidence. The judgement of conclusions made from retroduction are often based on the perceived plausibility of the proposed programme theories produced (Pawson *et al.*, 2004). A detailed description of the experiential immersion in the field that informed the retroduction that generated the IPT, the narrative understood by the author and where specific theories derived from this experience originated from is presented. This presentation is a transparent method of evidencing theorising for external critique that the author has not previously seen.

Tracking theory

The process of tracking multiple CMOCs from an initial programme theory, through the analysis and into the refined programme theory is a difficult task. The complexity of a programme theory can make it hard to keep multiple mechanisms current in one's mind during analysis. This thesis uses a potentially novel, adapted framework approach for realist qualitative analysis to overcome this. The familiarisation stage of the framework approach is adapted to include a detailed familiarisation of the CMOCs in the IPT, including a further process of JRAC if necessary, in addition to the data. Given

that programme theory building has often taken some time, this helps keep the initial CMOCs at the heart of the analysis. The novel use of ID numbers shows whether these CMOCs were unchanged in the refined programme theory or have been modified, through consolidation with other CMOCs during the analysis. The author is not aware of this method being used before.

14.2.2   Limitations

There are also a number of potential limitations to the study. Though it is not clear how traditional scientific concepts of bias relate to critical realist research, these limitations are presented in the following order. Potential bias brought to the programme theory and analysis by the author themselves, potential problems with the participant's responses in the interviews and potential problems with the analysis of the data and therefore the refinement of the programme theory.

14.2.2.1   Researcher bias

The research topic is heavily connected to the author's professional work and previous roles. Though this is also a strength of the study, it introduces the potential of the authors own biases, assumptions and opinion affecting the development of initial programme theory and the analysis. The iterative approach of the data collection and analysis will have partially mitigated this, as developing theory and potential demi-regularities could be explored and tested in later interviews. Additionally, though no additional interviews were obtained to check the refined programme theory before reporting, the theory was presented at conferences, seminars and workshops with clinical learners and reflection on the discussions used to inform later analysis during the research programme.

The detailed evidencing of retroductive theorising, the provision of primary data and the description of where the linkage of CMOCs to the data is considered less strong, makes it possible for any potential bias in the findings to be critiqued by others. Further aspects of the analysis are discussed in a following section.

14.2.2.2   Sampling

There is a possibility that the participants that volunteers are likely to be those GPs most invested in supervision or ACPs that are having a better experience. With the relatively small sample size, this creates the possibility that the data overly represents the views of those with relatively good experiences. There is also the potential that some responses to questions in the interviews were

affected by the desire not to expose some of the more negative experiences of supervision. There is still a sensitivity about the introduction of new, non-medical roles into general practice and a fear that for some, appropriate supervision may not be provided. It is possible that participant's responses were masking difficulties to some degree, in order not to expose themselves or their practices/employers. This could mean that some of the more inhibitory mechanisms were not captured in as much detail.

This was partially mitigated by attempting to produce an open and discursive space for each interview. Interviews usually took an hour, and participants often started to open up about some of their difficulties, many of them expressed how the opportunity to do this had been helpful for them. It may be that the addition of focus group interviews would have allowed difficult experiences to be shared more easily.

Data relating to team dynamics and their effect on clinical supervision were not captured as fully as originally planned originally planned due to the COVID-19 pandemic. This could mean that important mechanisms related to how the patients were triaged into the ACPs clinics were missed along with a greater insight into patient's response to the new practitioners before and after being seen. It is unclear whether this will have affected the mechanisms that were identified, but it might limit the understanding of some aspects the programme theory outside the clinical supervision conversation itself. The focus groups with practice teams in the original plan would have helped provide some of this insight.

14.2.2.3 Analysis.

As already discussed, attempting to identify CMOCs through demi-regularities in qualitative data also opens up the potential of researcher bias in the analysis. The term regularity is inherently a quantitative term, but in qualitative analysis, one is looking for interpretive insight from the data, to obtain a more holistic view of the subject area. This means that one cannot necessarily use the frequency that contexts, mechanisms, or outcomes are identified as evidence of their significance. Coding CMOCs directly from the data supports a holistic view of the experiences of participants but makes it more important that contradictory data is highlighted and considered. This potential limitation could have been further addressed by having a larger team to check and challenge the progress of the coding during analysis at various stages. Checking of the data coding in the form of detailed discussion beyond the research team was limited.

As already mentioned, the examples of qualitative data that provided evidence for each mechanism, the transparency as to where CMOCs were modified and the description about where the connection between the data and the generative mechanisms are less strong provide the opportunity for external critique of the analysis and strength of evidence for each mechanism.

As the purpose of the evaluation was to identify supportive mechanisms that enabled the successful integration of new learners and their adaptation to support generalist principles in care, the analysis may also be skewed towards mechanisms with more positive outcomes than negative ones to this end. This may also mean that important inhibitory mechanisms to the development of the clinical learners were missed.

14.3 COMPARISONS WITH PREVIOUS LITERATURE

As already described in chapter 10, the minimum standards for the supervision of ACPs are a named, educational supervisor to oversee professional development and ongoing workplace clinical supervision at least weekly, but daily in high-risk contexts, such as primary care (Health Education England, 2021a). This section revisits and compares the evidence related to clinical supervision in relation to the key findings of this study and the refined programme theory.

14.3.1 Inter-professional supervision

It is suggested that standard approaches for clinical supervision within a single profession may need adapting for inter-professional situations (Health Education England, 2021b). This is supported by a study on role transition for developing ACPs, which suggests they move from *'feeling like a fish out of water'* to becoming socialised in their new roles. Supportive environments and realistic expectations are important influences on this transition for ACPs, with clinical supervision an *'essential factor in transitioning into the new role'* (Moran and Nairn, 2018). Though this transitioning process could be argued to occur for all clinical learners developing new professional roles in unfamiliar settings, inter-professional supervision has the additional risks of misunderstandings on roles, responsibilities, and previous training, as well as a potential lack of shared professional language and differences in professional decision-making (Rothwell *et al.*, 2021). It can be seen how these potential problems may help generate higher levels of anxiety of all the participants (whether learners or supervisors) at the beginning of the supervision process than in uni-professional situations.

14.3.2 Previous evidence of potential supervision mechanisms

Though this is the first realist evaluation of clinical supervision in a primary care setting known to the author, two reviews of clinical supervision in other settings support the CMOCs identified in this study.

Milne et al.'s (2008) best evidence synthesis sought to separate aspects of what make clinical supervision work for learners into contextual aspects (moderators), supervision interventions (mediators), and outcomes (mechanisms of change). Major positive 'moderators' included aspects of the working environment such as the degree of administrative support, a progressive organisational culture and taking a systems approach to supervision. The skills and experience of the supervisor were also important along with the experience and motivation of the supervisee. Other positive moderators included the acceptability of the approach to supervision, a 'needs-led' approach and financial incentives. Negative moderators included staff turnover, scheduling problems, short supervision meetings, anxiety, and an increasing complexity of clinical work (Milne *et al.*, 2008). These findings support the shape and themes identified in the refined programme theory, including inhibitory themes such as anxiety and a lack of a discursive space.

Kilminster et al.'s 2007 guidance on helpful and unhelpful supervisory 'events' (developed from an earlier systematic review) supports other elements of the refined programme theory. They suggest giving feedback on performance, linking theory with practice, joint problem solving, providing reassurance and role modelling are helpful. Trainees need clear feedback about their errors, and corrections are best conveyed unambiguously so that trainees are aware of mistakes and any weaknesses they may have. Supervisors need to be clinically competent and knowledgeable and have good teaching and interpersonal skills. Ineffective supervisory behaviours include rigidity and low empathy; failure to follow up supervisees concerns; indirect communication, prioritising evaluation, and over emphasising negative aspects of performance. (Kilminster *et al.*, 2007). This study builds on these themes, and explains how feedback, a discursive space for sharing thinking and role modelling and a collaborative approach are likely to work. Inhibitory mechanisms are also supported, particularly around the lack of trust in a supervisor to follow up concerns.

14.3.3 Relationships and trust

Many papers describe how important the supervision relationship and trust are for clinical supervision, but its effect is complex (Goodyear and Bernard, 1998; Kilminster and Jolly, 2000; Morton-Cooper and Palmer, 2000; Rothwell *et al.*, 2019; Sturman, Parker and Jorm, 2021). Goodyear

& Bernard suggest successful supervisee development does not necessarily require a relationship full of empathy and unconditional positivity, as long as the 'supervisee perceives the supervisor is trying to be helpful' (Goodyear and Bernard, 1998). This supports the findings that a learner trusting that a supervisor is committed to their development is an important mechanism, over and above other aspects of likeability.

The importance of mechanisms generating trust in the study is supported by other studies. With respect to a learner trusting their supervisor, an analysis of telephone interviews regarding experiences of supervision suggested supervisor interest, and time for observation and feedback helped build a trusting relationship. Studies also suggest a learner develops trust in their supervisors through their accessibility and willingness to listen to difficulties without negative judgement (Hauer *et al.*, 2014; Bonnie *et al.*, 2020). Conversely, unapproachability of supervisors and a sense of being 'used' or taken for granted was destructive to trust.

Factors influencing a supervisor's trust in a learner are also described (ten Cate, 2013; Choo *et al.*, 2014; Hauer *et al.*, 2014; Cate *et al.*, 2016). Specific aspects that encourage trust are clinical performance, clarity about their limitations and their approach to learning (including their transparency in discussing their performance). Help-seeking behaviour from trainees engenders trust, but trust suffers when trainees don't take advice (Cottrell *et al.*, 2002; Sturman, Parker and Jorm, 2021). A qualitative study exploring the development of supervisor trust in learners in general practice settings also found if a learners self-confidence deviated (in either direction) from the supervisor's expectations trust would deteriorate (Bonnie *et al.*, 2020). These finding may help explain why there were so many mechanisms found at the beginning of the ACPS development related to trust (and safety) and why the trainee sharing their thinking early on is so important.

14.3.4   Personal attributes

Though some studies have suggested other particular attributes of learners affect the way they approach and respond to clinical supervision, this study was not able to explore these in any more depth. When reporting on studies of clinical supervision in counselling, Goodyear and Bernard suggest the 'reactance potential' of learners (the tendency to oppose constraints to one's freedoms) is an important attribute in learners that affects their approach to supervision, particularly in the amount of structured supervision they want (Goodyear and Bernard, 1998). However, they also suggest clinical learners with higher 'conceptual levels' of thinking desire less structure. Though these findings are not drawn from a primary care setting, they may help explain why supervisors feel

the need for absolute clarity about whether a learner is aware of their own scope of practice and asking for help when appropriate, in order to establish an adequate sense of safety.

Interpersonal factors in the learner-supervisor pairings highlighted in the literature could also not be explored in this study. Rothwell et al.'s rapid evidence review of clinical supervision suggest supervisee-supervisor matching with respect to gender, race and ethnicity are important, that cultural differences affect expectations of supervision and gender balance affects the orientation of supervision towards task-orientated or relationship-based discussion. (Rothwell *et al.*, 2019). Though there were some mechanisms in the initial programme theory that may have captured some of this theory, they could not be explored in the focused empirical work.

14.3.5   Stimulating reflection

The findings from this study describe supervision mechanisms that can generate deeper reflection and illustrates the contexts (safe spaces and trust) that allow these to operate more actively. The importance of a discursive space where clinical thinking can be shared between learner and supervisor to generate deeper levels of reflection cannot be underestimated. This suggests the interaction between timely, objective feedback on performance and subsequent reflection on this feedback is a critical ingredient. Milne et al.'s (2008) identification that important positive 'mediators' were the provision of feedback, observing the trainee and question-and-answer conversations supports these findings. Half of these positive 'mediators' were centred on the experiential part of Kolb's reflective cycle, with reflection, conceptualisation, and experimentation sharing the other half. They therefore conclude that one major 'mediator' by which supervision supports development is through experiential learning and that this deserves further attention (Milne *et al.*, 2008).

A realist synthesis of effective continuing professional development also found that facilitated support and reflection through work-based opportunities produced increased self-awareness, self-confidence, and efficacy (Manley *et al.*, 2018). Conversely, 'self-supervision' (learning from experience without feedback from a supervisor) has been reported to have much less effect on development (Kilminster and Jolly, 2000).

Establishing a shared understanding of the developmental purpose and nature of supervision conversations also helps, including how protected time will be scheduled and what ad-hoc supervision is available (Rothwell *et al.*, 2019). Supervision conversations that support integration

into teams are best focused on the needs of the learner to support their own professional development, whilst also on supporting and improving the service for patients.

14.3.6 Self-direction and collaboration

The supporting middle-range theories related to self-direction and collaboration are described in chapter 13. There is also some support in the literature on inter-professional working for how collaboration generates some of the outcomes identified in the study. A realist review of the delegation of home visits to ACPs showed how delegation increased GP job satisfaction and reduced workload (Abrams *et al.*, 2020). Principles to encourage collaboration in care were identified as information sharing, inter-professional dialogue, and respectful relationships. Organisational cultures that placed unnecessary limits on the use of clinical capability and judgement led to staff frustration and despondency. These findings further support those mechanisms towards the 'end' of the programme theory that generate confidence, job-satisfaction, and fuller integration to the delivery of care.

14.3.7 Section summary

This section has revisited the literature on clinical supervision of ACPs and compared it to the findings of this study. This research builds on this previous knowledge to describe the mechanisms that support the effectiveness of clinical supervision more deeply and clearly. The available evidence also supports the theme clusters in the refined programme theory, which is further indication that the refined programme theory is relevant for other healthcare settings and other clinical learners.

14.4 RECOMMENDATIONS

14.4.1 Support generalist care through clinical supervision

Practitioners inexperienced in primary care such as physician associates are unlikely to have had much exposure to anything but a biomedical approach to healthcare. Paramedics are used to working in out-of- hospital environments but are used to a see-and-dispatch approach rather than continuity of care. Nurses may come with a more holistic philosophy. Whatever the previous philosophy of practice, the adaptation to develop a primary care requires supervisors to explain why they are approaching management in a different way than the practitioners are expecting.

It is therefore particularly important that supervision and feedback conversations and are framed with a person-centred, generalist approach for practitioners to recognise the adaptations they need to make to support this. For UK primary care, if the integration of ACPs is designed to support generalism, ACPs need to understand the approach that is required. The importance of a discursive space where clinical thinking can be shared between learner and supervisor to generate deeper levels of reflection cannot be underestimated.

If it is accepted that the collective aim of a general practice team is to provide high quality generalist care, then new clinical learners and their supervisors should work towards this collaboratively. Despite the structural differences within practice teams due to employment arrangements, previous experience and professional hierarchies, an approach that minimises the negative effects of these will create conditions that allow mechanisms to operate that support the development and integration of new practitioners to provide generalist care. Though this study suggests new practitioners can negotiate situations where there is variable commitment to supervision, this hinders their development and contribution to the service delivered. Supervision conversations need to remain focused on the supporting the learners own professional development whilst also supporting and improving the service.

Working to establish conditions for supervision where supportive mechanisms are able to operate as freely as possible will encourage a new ACP to develop as rapidly as possible to integrate successfully into teams to support generalist care. Minimising the inhibitory mechanisms is equally important, as they will prevent efforts to make the intervention a success.

14.4.2   Support the workforce through clinical supervision!

There is agreement that one of the essential functions of supervision is to support personal wellbeing (Kilminster and Jolly, 2000; Milne *et al.*, 2008; Proctor, 2010; Rothwell *et al.*, 2019; Evans *et al.*, 2020). Clinical supervision has a positive impact on staff retention, job satisfaction, wellbeing for both supervisee and supervisor and teamwork within clinical teams. Supervisees describe numerous personal gains from the process of supervision including '*strengthened confidence, revised professional identity, increased therapeutic perception, increased ability to conceptualise [and] positive anticipation*' (Rothwell *et al.*, 2019). Ensuring clinical supervision is implemented effectively should therefore be included in strategies for retaining the healthcare workforce, as well as those related to training and development.

There are well established re-imbursements for clinical supervision of specialty trainees in GP and supervising GPs recognise the extra capacity that their clinical learners provide for the service (Cottrell *et al.*, 2002). As there is no similar support available for the supervision of ACPs, how GPs weigh up the costs and benefits of supervising non-medical clinical learners is likely to be important. Conversely, supervisors may not appreciate that, if sufficient time for clinical supervision is not provided, the eventual benefits from their contribution to the service will be stifled and delayed or the practitioner may decide to leave their teams to work elsewhere.

14.4.3 Provide better guidance for clinical supervision.

Guidance on clinical supervision needs to describe what the desirable outcomes of different aspects of supervision process are and how these outcomes can be generated through particular causal mechanisms. Rather than provide a list of things that must be done, guidance needs to provide a set of tools and mechanisms that that can be used to generate outcomes that accelerate a learner's integration into the team. These tools and mechanisms should be shared with learner and supervisor to be used collaboratively to maximise desirable outcomes for each party. The programme theory developed through this research explains which mechanisms can generate outcomes that accelerate learning and contribution to care in clinical settings (sense of safety, mutual trust, and promotion of reflection etc.). It also provides evidence for why clinical learners should be given space to reflect with peers, through preceptorships and day-release courses.

It could be argued that the nature of the refined programme theory might make it harder to engage busy practitioners who just want to know 'what do I need to do', but by incorporating the generative mechanisms and outcomes, simple guidance can be enhanced, whilst retaining clarity of purpose.

Example one:

Simple guidance: All clinical learners should undergo a full induction at the start of a clinical placement.

Enhanced guidance: All clinical learners should undergo an induction when starting a new clinical placement or role. *The purpose of induction is to establish a shared confidence that they and their supervisors are able to provide healthcare safely within their particular clinical setting. The induction period ends when this shared confidence is achieved.*

Example two:

Simple guidance: Regular and timely debriefs should be available as agreed for that particular stage of learning.

Enhanced guidance: Regular and timely debriefs should be available as agreed for that particular stage of learning. *In addition to checking safe practice, the purpose of debriefs is to support the learner to adapt to a generalist approach. This is accelerated when debrief discussions are explicitly framed according to generalist principles e.g. managing multi-morbidity and complexity, maximising person-centred care.*

Other examples can be drawn from this work. These could help supervisors work with their clinical learners to focus on what is most important in providing effective clinical supervision in their own contexts, rather than go through the processes in a way that meets requirements but are less helpful. Promoting this shared ownership of supervision processes and what outcomes are required with learners could reduce the workload and pressure on supervisors that is often frustrating the provision of adequate clinical provision. It may also expose clinical environments where appropriate supervision is inadequate and enhance patient safety and the quality of care.

14.5 FUTURE DIRECTIONS

14.5.1 Further developments

Since this research was started, more guidance for clinical supervision has become available for supervising ACPs in primary care. HEE has developed a national training programme for the supervision of ACPs (Health Education England, 2023). This two-day face-to-face training is adapted from traditional post-graduate GP supervision training to take account of profession specific requirements. An NHS e-learning for health module for multi-disciplinary supervision was also created in 2021, which covers a basic overview of the role of clinical supervision to encourage engagement with the process (NHS eLearning for Healthcare, 2021). These resources still fail to explain what mechanisms makes supervision work more effectively.

In terms of workforce strategy, the 2023 NHS Long Term Workforce Plan describes how the Additional Roles Re-imbursement Scheme (ARRS) will be extended to encourage more new non-medical clinical roles into primary care, as well as an increase in more traditional GP specialty trainees (NHS England, 2023b). It is therefore likely that the demand for effective clinical supervision

of novice generalist clinical learners will only increase. However, as the recent NHS Fuller Stocktake on the progress of previous primary care strategy for the NHS concluded, developing the quality and consistency of this supervision is critical to enable these policies to work (Fuller, 2022).

More recently, this ongoing strategy has recently created further controversy relevant to the findings of this study. At the time of submission of this thesis, controversy around the Physician Associate role in primary care developed after a serious significant event where the patient thought they had been consulted by a qualified doctor when it was a PA was raised in parliament (Management in Practice, 2023). Since then, the RCGP has set out new 'red lines' for the scope of PAs in general practice and the BMA is actively opposing any expansion of PAs within NHS organisations (British Medical Association, 2023; GPonline, 2023)

There is also controversy about how the work of GPs is now being done by cheaper, less qualified practitioners in ARRS roles, which is leaving GPs with portfolio careers effectively unemployed (Pulse Online, 2023b). This has led to the General Medical Council asking NHS England to reassure doctors that there is no plan to replace them with other roles (Pulse Online, 2023a). These controversies have the potential to heighten the anxiety and tension around inter-professional supervision found even further.

14.5.2   Further dissemination

Programme theories are only valuable if they usefully explain the way interventions work and how desired outcomes of the intervention can be generated. Interim models of the refined programme theory have been presented to Advanced Clinical Practitioners and postgraduate GP trainees across Yorkshire and the Humber, undergraduate tutors at University College London, GP educators across the Northeast of England and at medical education and primary care academic conferences.

Further impact might be achieved if the findings could help change behaviours of learners and supervisors so they can optimally use supervision to achieve developmental aims and improve the services for patients. The process of sharing and possible further refinement will therefore continue, with the aim of exploring what learners and educators might do differently in day-to-day practice. Reflections from these meetings may further help refine how the programme theory is best presented.

14.5.3 Further research

The findings of this study open up areas for further research into important aspects of healthcare education and training. A better understanding of how psychological safety is established for clinical learners working in inter-professional environments might help develop ways to create better learning spaces for teams with a number of learners from different professional backgrounds. A greater understanding of how personal attributes affect responses to feedback might help individual learners understand how best to navigate feedback and supervision for themselves.

This study has also identified mechanisms that stimulate reflective practice but has only touched on how external assessments might affect reflection. Understanding the dynamic between supervision and demonstrating reflection for assessments is important. This relates to findings on the importance of discursive spaces to share clinical thinking during placements. An exploration of the effect of specially designed scripts for communicating generalist clinical reasoning for novice generalists could be one avenue to explore. Lastly, this study has illustrated the efforts that learners have to make to negotiate their way through variable supervision environments and create opportunities for self-direction. Understanding the strategies learners use for this could help prepare learners for situations where there is less available support.

With respect to the broader question of the integration of new clinical roles into generalist teams, a better understanding of the differences of what 'integration' means for new practitioners and employers in terms of work environments and service provision for patients could help each party to understand the needs of the other. Given the findings on how practices have explained the different practitioners available to patients and their actual understanding of this, a deeper understanding of what sort of information patients would like about individual practitioners and the arrangement for support is important if service re-design is to become more transparent to service users.

14.6 CONCLUSION

The policy to integrating new clinical learners into general practice teams to support generalist care is a complex intervention. A better understanding of the mechanisms that will help make it successful is required and effective clinical supervision is recognised as a critical part of the process. However, embedding clinical supervision, as a sustainable process across general practice, as in other healthcare settings is a challenge. There is still often a lack of adequate supervision available

for developing practitioners and the time required for clinical supervision creates tension between service demands and those for education and training. The impact of the additional complexity (and stress) created by supervision responsibilities is also recognised. Lack of time and heavy workload can mean supervision is not prioritised by supervisors or supervisees, hindering effective integration.

This study provides a deeper understanding of how to make clinical supervision work to help new clinical learners integrate into general practice teams and support generalist care. The credibility of the findings is supported by middle-range theory and previous knowledge on clinical supervision. Through focusing on the generative mechanisms that support a clinical learner's adaptation and integration, this study gives greater insight into how to make supervision as efficient as possible, potentially reducing the overall burden of the process on supervisor and learner, accelerating clinical development, and supporting the delivery of care. Better information and guidance on these mechanisms for both learner and supervisor could support a collegiate approach to the supervision, where both parties have a greater understanding of how they can make the process work more successfully.

The further expansion of advanced clinical practice roles makes this study timely and important. Additionally, though this research focuses on non-medical clinical roles in primary care, the alignment of the programme theory with middle-range theory suggests it is likely to be helpful for other clinical learning situations, particularly where supervisors are less familiar with practitioner's previous experience or clinical leaners less familiar with generalist principles of care. It may therefore have particular relevance for GP specialty trainees who are new to UK healthcare settings. Elements of the programme theory are also likely to be relevant for UK medical students unfamiliar with generalist principles.

This study develops knew knowledge to provide a greater insight into the principles of what helps clinical supervision work, for supervisors and clinical learners from different professional backgrounds, at different levels of learning and across different healthcare contexts, and on the specific mechanisms that help or hinder its successful implementation to support healthcare delivery.

REFERENCES

Abhyankar, P. *et al.* (2013) 'A realist evaluation of a normal birth programme', *Evidence Based Midwifery*, 11(4), pp. 112–119.

Abrams, R. *et al.* (2020) 'Delegating home visits in general practice: a realist review on the impact on GP workload and patient care', *BJGP*, 70(695), pp. e412–e420. Available at: https://doi.org/10.3399/bjgp20X710153.

Addicott, R. *et al.* (2015) *Workforce planning in the NHS*. Available at: http://www.kingsfund.org.uk/publications/workforce-planning-nhs. (Accessed: 10th May 2009)

Aguinis, H., Gottfredson, R.K. and Joo, H. (2012) 'Delivering effective performance feedback: The strengths-based approach', *Business Horizons*, 55(2), pp. 105–111. Available at: https://doi.org/10.1016/j.bushor.2011.10.004.

Arksey, H. and O'Malley, L. (2005) 'Scoping studies: towards a methodological framework', *International Journal of Social Research Methodology*, 8(1), pp. 19–32. Available at: https://doi.org/10.1080/1364557032000119616.

Asaria, M. *et al.* (2016) 'Unequal socioeconomic distribution of the primary care workforce: whole-population small area longitudinal study.', *BMJ open*, 6(1), p. e008783. Available at: https://doi.org/10.1136/bmjopen-2015-008783.

Asaria, M., Doran, T. and Cookson, R. (2016) 'The costs of inequality : whole-population modelling study of lifetime inpatient hospital costs in the English National Health Service by level of neighbourhood deprivation', *Journal of Epidemiology and Community Health*, pp. 1–7. Available at: https://doi.org/10.1136/jech-2016-207447.

Baker, R. *et al.* (2016) 'Population characteristics, mechanisms of primary care and premature mortality in England: a cross-sectional study', *BMJ Open*, 6(2), p. e009981. Available at: https://doi.org/10.1136/bmjopen-2015-009981.

Baldwin, K.A. *et al.* (1998) 'Acceptance of Nurse Practitioners and Physician Assistants in Meeting the Perceived Needs of Rural Communities', *Public Health Nursing*, 15(6), pp. 389–397. Available at: https://doi.org/10.1111/j.1525-1446.1998.tb00365.x.

Ball, L. (2005) 'Setting the scene for the paramedic in primary care: a review of the literature', *Emerg Med J*, 22, pp. 896–900. Available at: https://doi.org/10.1136/emj.2004.019588.

Bansal, A. *et al.* (2021) 'Optimising planned medical education strategies to develop learners' person-centredness: A realist review', *Medical Education* [Preprint]. Available at: https://doi.org/10.1111/MEDU.14707.

Barker, I., Steventon, A. and Deeny, S.R. (2017) 'Association between continuity of care in general practice and hospital admissions for ambulatory care sensitive conditions: cross sectional study of routinely collected, person level data', *BMJ*, 356, p. 84. Available at: https://doi.org/10.1136/bmj.j84.

Barnett, K. *et al.* (2012) 'Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study.', *Lancet (London, England)*, 380(9836), pp. 37–43. Available at: https://doi.org/10.1016/S0140-6736(12)60240-2.

Benkert, R. *et al.* (2009) 'Trust, mistrust, racial identity and patient satisfaction in Urban African American primary care patients of nurse practitioners', *Journal of Nursing Scholarship*, 41(2), pp. 211–219. Available at: https://doi.org/10.1111/j.1547-5069.2009.01273.x.

Bergeron, D.A. and Gaboury, I. (2020) 'Challenges related to the analytical process in realist evaluation and latest developments on the use of NVivo from a realist perspective', *International Journal of Social Research Methodology*, 23(3), pp. 355–365. Available at: https://doi.org/10.1080/13645579.2019.1697167.

Bernard, J.M. and Goodyear, R.K. (2004) *Fundamentals of clinical supervision*. Boston. Allyn & Bacon.

Bertilsson, T.M. (2004) 'The Elementary Forms of Pragmatism: On Different Types of Abduction', *European Journal of Social Theory*, 7(3), pp. 371–389. Available at: https://doi.org/10.1177/1368431004044199.

Bienkowska-Gibbs, T. *et al.* (2015) *New organisational models of primary care to meet the future needs of the NHS: A brief overview of recent reports*. Available at: https://www.rand.org/content/dam/rand/pubs/research_reports/RR1100/RR1181/RAND_RR1181.pdf. (Accessed: 19th July 2016)

Blamey, A. and Mackenzie, M. (2007) 'Theories of Change and Realistic Evaluation: Peas in a Pod or Apples and Oranges?', *Evaluation*, 13(4), pp. 439–455. Available at: https://doi.org/10.1177/1356389007082129.

Bonnie, L.H.A. *et al.* (2020) 'Insight in the development of the mutual trust relationship between trainers and trainees in a workplace-based postgraduate medical training programme: A focus group study among trainers and trainees of the Dutch general practice training programme', *BMJ Open*, 10(4). Available at: https://doi.org/10.1136/bmjopen-2019-036593.

Booth, A., Wright, J. and Briscoe, S. (2019) 'Scoping and searching to support realist approaches', in N. Emmel et al. (eds) *Doing Realist Research*. SAGE Publications, pp. 148–165.

Boudon, R. (1991) 'What Middle-Range Theories Are', *Contemporary Sociology*, 20(4), pp. 519–522.

Brennan, N. *et al.* (2014) 'Understanding how appraisal of doctors produces its effects: a realist review protocol.', *BMJ open*, 4(6), p. e005466. Available at: https://doi.org/10.1136/bmjopen-2014-005466.

Briner, R.B. and Denyer, D. (2012) 'Systematic Review and Evidence Synthesis as a Practice and Scholarship Tool', in *Handbook of evidence based management: companies, classrooms, research*, pp. 112–129.

British Medical Association (2007) *A rational way forward for the NHS in England*. London: British Medical Association.

British Medical Association (2015) *BMA | Training stats make mockery of '5,000 extra GPs' pledge*. Available at: http://bma.org.uk/news-views-analysis/news/2015/august/training-stats-make-mockery-of--5000-extra-gps-pledge (Accessed: 17 September 2015).

British Medical Association (2023) *BMA position statement on physician associates and anaesthesia associates*. Available at: https://www.bma.org.uk/news-and-opinion/bma-position-statement-on-physician-associates-and-anaesthesia-associates (Accessed: 19 November 2023).

Browne, A.J. and Tarlier, D.S. (2008) 'Examining the potential of nurse practitioners from a critical social justice perspective', *Nursing Inquiry*, 15(2), pp. 83–93. Available at: https://doi.org/10.1111/j.1440-1800.2008.00411.x.

Bryant, L. (2010) 'Clinical supervision', *Practice Nurse*, pp. 36–41. Available at: https://doi.org/10.7748/ns.14.16.27.s46.

Bryant-Lukosius, D. *et al.* (2016) 'Framework for Evaluating the Impact of Advanced Practice Nursing Roles', *Journal of Nursing Scholarship*, 48(2), pp. 201–209. Available at: https://doi.org/10.1111/jnu.12199.

Buchan, J. and Dal Poz, M.R. (2002) 'Skill mix in the health care workforce: reviewing the evidence', *Bulletin of the World Health Organisation*, 80(7).

Buchan, J., Seccombe, I. and Charlesworth, A. (2016) *Staffing matters; funding counts*. Available at: http://www.health.org.uk/sites/health/files/StaffingMattersFundingCounts.pdf. (Accessed: 28th November 2017)

Burgess, S.E. *et al.* (2003) 'Rural and Urban Physicians' Perceptions Regarding the Role and Practice of the Nurse Practitioner, Physician Assistant, and Certified Nurse Midwife', *The Journal of Rural Health*, 19(5), pp. 321–328. Available at: https://doi.org/10.1111/j.1748-0361.2003.tb00648.x.

Busby, J., Purdy, S. and Hollingworth, W. (2016) 'Opportunities for primary care to reduce hospital admissions: a cross-sectional study of geographical variation', *British Journal of General Practice*, 67(654).

Butterworth, T. and Faugier, J. (1992) 'Clinical supervision as an emerging idea in nursing', in T. Butterworth and J. Faugier (eds) *Clinical Supervision and Mentorship in Nursing*. London: Chapman & Hall.

Byng, R., Norman, I. and Redfern, S. (2005) 'Using Realistic Evaluation to Evaluate a Practice-level Intervention to Improve Primary Healthcare for Patients with Long-term Mental Illness', *Evaluation*, 11(1), pp. 69–93. Available at: https://doi.org/10.1177/1356389005053198.

Calder, A. *et al.* (2009) 'Understanding patterns of deprivation', *Regional Trends*, 41(93–114).

Campbell, J.L. and Salisbury, C. (2015) 'Research into practice: accessing primary care.', *British Journal of General Practice*, 65(641), pp. e864-8. Available at: https://doi.org/10.3399/bjgp15X688057.

Campbell, M. *et al.* (2000) 'Framework for design and evaluation of complex interventions to improve health', *BMJ* , 321, pp. 694–696. Available at: https://doi.org/10.1136/bmj.321.7262.694.

Carr, J. *et al.* (2002) 'GPs' perceptions of the nurse practitioner role in primary care', *British Journal of Community Nursing*, 7(8).

Carryer, J. and Yarwood, J. (2015) 'The nurse practitioner role: Solution or servant in improving primary health care service delivery', *Collegian*, 22(2), pp. 169–174. Available at: https://doi.org/10.1016/j.colegn.2015.02.004.

Carter, M., Moore, P. and Sublette, N. (2018) 'A nursing solution to primary care delivery shortfall', *Nursing Inquiry*, 25(4), pp. 1–7. Available at: https://doi.org/10.1111/nin.12245.

ten Cate, O. (2013) 'Nuts and Bolts of Entrustable Professional Activities', *Journal of Graduate Medical Education*, 5(1), pp. 157–158.

Cate, O. Ten *et al.* (2016) 'Entrustment Decision Making in Clinical Training', *Academic Medicine*, 91(2), pp. 191–198. Available at: https://doi.org/10.1097/ACM.0000000000001044.

Cawley, J.F. (2008) 'Physician assistants and title VII support', *Academic Medicine*, 83(11), pp. 1049–1056. Available at: https://doi.org/10.1097/ACM.0b013e3181890533.

Cederbaum, J. and Klusaritz, H.A. (2009) 'Clinical instruction: using the strengths-based approach with nursing students.', *The Journal of nursing education*, 48(8), pp. 422–428. Available at: https://doi.org/10.3928/01484834-20090518-01.

Celentano, D.D. (1978) 'New Health Professional Practice Patterns', *Medical Care*, 16(10), pp. 837–849.

Centre for Workforce Intelligence (2014) *In-depth review of the general practitioner workforce - final report*. Available at: https://www.gov.uk/government/publications/in-depth-review-of-the-general-practitioner-workforce.

Chang, E.T. *et al.* (2018) 'What are the key elements for implementing intensive primary care? A multisite Veterans Health Administration case study ☆', *Asch@va.gov (S.M. Asch). Healthcare*, 6, pp. 231–237. Available at: https://doi.org/10.1016/j.hjdsi.2017.10.001.

Chapman, J.L. *et al.* (2004) 'Systematic review of recent innovations in service provision to improve access to primary care', *British Journal of General Practice*, 54(502), pp. 374–381.

Chartered Society of Physiotherapy (2023) *Advanced practice in physiotherapy*. Available at: https://www.csp.org.uk/professional-clinical/professional-guidance/scope-practice (Accessed: 13 September 2019).

Choo, K.J. *et al.* (2014) 'How do supervising physicians decide to entrust residents with unsupervised tasks? A qualitative analysis', *Journal of Hospital Medicine*, 9(3), pp. 169–175. Available at: https://doi.org/10.1002/jhm.2150.

Coles, E., Cheyne, H. and Daniel, B. (2015) 'Early years interventions to improve child health and wellbeing: What works, for whom and in what circumstances? Protocol for a realist review', *Systematic Reviews*, 4(1), pp. 1–6. Available at: https://doi.org/10.1186/s13643-015-0068-5.

College of Paramedics (2021) *College of Paramedics - Scope of Practice*. Available at: https://collegeofparamedics.co.uk/COP/ProfessionalDevelopment/Scope_of_Practice.aspx (Accessed: 16 October 2023).

Collier, A. (1994) *Critical Realism. An introduction to Roy Bhaskar's Philosophy*. London: Verso.

Connolly, C. *et al.* (2004) 'Associate degree nursing in a community-based health center network: Lessons in collaboration', *Journal of Nursing Education*, 43(2), pp. 78–80. Available at: https://doi.org/10.3928/01484834-20040201-08.

Cooke, A., Smith, D. and Booth, A. (2012) 'Beyond PICO: The SPIDER Tool for Qualitative Evidence Synthesis', *Qualitative Health Research*, 22(10), pp. 1435–1443. Available at: https://doi.org/10.1177/1049732312452938.

Cookson, R., Asaria, M., ... Laudicella, M., 2016. Health Inequality and the A&E Crisis [WWW Document]. Centre for Health Economics. Available at: http://www.york.ac.uk/che/research/equity/monitoring/.

Cooper, A. *et al.* (2021) 'Identifying safe care processes when GPs work in or alongside emergency departments: realist evaluation', *British Journal of General Practice*, 71, pp. e931–e940. Available at: https://doi.org/10.3399/BJGP.2021.0090.

Cooper, R. and Stoflet, S. (2004) 'Diversity and consistency: the challenge of maintaining quality in a multidisciplinary workforce.', *Journal of health services research & policy*, 9 Suppl 1, pp. 39–47. Available at: https://doi.org/10.1258/135581904322724121.

Coryn, C.L.S. *et al.* (2011) 'A systematic review of theory-driven evaluation practice from 1990 to 2009', *American Journal of Evaluation*, 32(2), pp. 199–226. Available at: https://doi.org/10.1177/1098214010389321.

Cottrell, D. *et al.* (2002) 'What is effective supervision and how does it happen? A critical incident study', *Medical Education*, 36(11), pp. 1042–1049. Available at: https://doi.org/10.1046/j.1365-2923.2002.01327.x.

Coulter, A., Roberts, S. and Dixon, A. (2013) *Delivering better services for people with long-term conditions; Building the house of care*.

Craig, P. *et al.* (2008) 'Developing and evaluating complex interventions: the new Medical Research Council guidance.', *BMJ*, 337(7676), pp. 979–983. Available at: https://doi.org/10.1136/bmj.a1655.

Crisp, N. and Chen, L. (2014) 'Global Supply of Health Professionals', *New England Journal of Medicine*, 370(10). Available at: https://doi.org/10.1056/NEJMra1111610.

Cruess, R.L. *et al.* (2015) 'A schematic representation of the professional identity formation and socialization of medical students and residents: a guide for medical educators', *Academic Medicine*, 90(6), pp. 718–725. Available at: https://doi.org/10.1097/ACM.0000000000000700.

Dalkin, S. *et al.* (2021) 'Using computer assisted qualitative data analysis software (CAQDAS; NVivo) to assist in the complex process of realist theory generation, refinement and testing', *International*

Journal of Social Research Methodology, 24(1), pp. 123–134. Available at: https://doi.org/10.1080/13645579.2020.1803528.

Dalkin, S.M. *et al.* (2015) 'What's in a mechanism? Development of a key concept in realist evaluation', *Implementation Science*, 10(1). Available at: https://doi.org/10.1186/s13012-015-0237-x.

Daly, W.M. and Carnwell, R. (2003) 'Nursing roles and levels of practice: A framework for differentiating between elementary, specialist and advancing nursing practice', *Journal of Clinical Nursing*, 12(2), pp. 158–167. Available at: https://doi.org/10.1046/j.1365-2702.2003.00690.x.

Danermark, B. *et al.* (2005) *Explaining Society, Critical Realism in the Social Sciences*. London: Routledge. Available at: https://doi.org/10.1177/089484530403100102.

Darzi, A. (2008) *High quality care for all: NHS Next Stage Review final report*, *High Quality Care For All NHS Next Stage Review Final Report*. London. Available at: https://doi.org/ISBN 978-0-10-174322-8.

Decoteau, C.L. (2017) 'The AART of Ethnography: A Critical Realist Explanatory Research Model', *Journal for the Theory of Social Behaviour*, 47(1), pp. 58–82. Available at: https://doi.org/10.1111/jtsb.12107.

Denyer, D., Tranfield, D. and Van Aken, J.E. (2008) 'Developing Design Propositions through Research Synthesis', *Organization Studies*, 29(3), pp. 393–413. Available at: https://doi.org/10.1177/0170840607088020.

Department of Health (2000) 'Making a Difference. Clinical supervision in primary care'. Available at: www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4061520.pdf

Department of Health (2000b) *The NHS Plan; a plan for investment, a plan for reform.* (Cm 4818-I). London. HMSO.

Department of Health (2006) 'Matrix specification of Core Clinical Conditions for the Physician Assistant by category of level of competence'. London.

Department of Health and Social Care (2015) *The NHS Constitution for England - GOV.UK*. Available at: https://www.gov.uk/government/publications/the-nhs-constitution-for-england/the-nhs-constitution-for-england (Accessed: 11 February 2020).

Department of Health and Social Care (2019) The Regulation of Medical Associate Professionals in the UK Consultation Response. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/777130/maps-consultation-report.pdf (Accessed: 21 September 2019).

Dicenso, A. *et al.* (2010) 'Utilization of nurse practitioners to increase patient access to primary healthcare in Canada--thinking outside the box.', *Nursing leadership*, 79, pp. 239–59. Available at: https://doi.org/10.1177/0894318413500313.

Dierick-van Daele, A.T. *et al.* (2010) 'The value of nurse practitioners in Dutch general practices Foundation for Development of Quality Care in General Practice', *Quality in Primary Care*, 18, pp. 231–241.

Dilworth, S. *et al.* (2013) 'Finding a way forward: A literature review on the current debates around clinical supervision', *Contemporary Nurse*, 45(1), pp. 22–32. Available at: https://doi.org/10.5172/conu.2013.45.1.22.

Dixon-Woods, M. *et al.* (2006) 'Conducting a critical interpretive synthesis of the literature on access to healthcare by vulnerable groups', *BMC Medical Research Methodology*, 6(1), p. 35. Available at: https://doi.org/10.1186/1471-2288-6-35.

Dossou, J.-P. *et al.* (2020) 'Opening the "implementation black-box" of the user fee exemption policy for caesarean section in Benin: a realist evaluation', *Health Policy and Planning*, 35(2), pp. 153–166. Available at: https://doi.org/10.1093/HEAPOL/CZZ146.

Drennan, V. *et al.* (2011) 'Physician assistants in English general practice: a qualitative study of employers' viewpoints.', *Journal of health services research & policy*, 16(2), pp. 75–80. Available at: https://doi.org/10.1258/jhsrp.2010.010061.

Drennan, V. *et al.* (2014) 'Investigating the contribution of physician assistants to primary care in England: a mixed-methods study', *Health Services and Delivery Research*, 2(16), pp. 1–136. Available at: https://doi.org/10.3310/hsdr02160.

Drennan, V. *et al.* (2017) 'Physician associates in primary health care in England: A challenge to professional boundaries?', *Social Science and Medicine*, 181, pp. 9–16. Available at: https://doi.org/10.1016/j.socscimed.2017.03.045.

Ekwo, E. *et al.* (1979) 'The physician assistant in rural primary care practices: Physician assistant activities and physician supervision at satellite and non-satellite practice sites', *Medical Care*, 17(8), pp. 787–795. Available at: https://doi.org/10.1097/00005650-197908000-00001.

Elegbe, O. (2010) 'GP commissioning consortia: Is there a role for physician assistants in routine care?', *British Journal of General Practice*, 60(578), pp. 704–705. Available at: https://doi.org/10.3399/bjgp10X515601.

Evans, C. *et al.* (2020) 'Advanced clinical practitioners in primary care in the UK: A qualitative study of workforce transformation', *International Journal of Environmental Research and Public Health*, 17(12), pp. 1–19. Available at: https://doi.org/10.3390/ijerph17124500.

Evans, C. *et al.* (2021) 'Characterising the outcomes, impacts and implementation challenges of advanced clinical practice roles in the UK: a scoping review', *BMJ Open*, 11(8), p. 48171. Available at: https://doi.org/10.1136/BMJOPEN-2020-048171.

Fabrellas, N. *et al.* (2011) 'Nurse management of "same day" consultation for patients with minor illnesses: Results of an extended programme in primary care in Catalonia', *Journal of Advanced Nursing*, 67(8), pp. 1811–1816. Available at: https://doi.org/10.1111/j.1365-2648.2011.05624.x.

Faculty of Physician Associates (2012) 'Competence and Curriculum Framework for the Physician Assistant'. London. Available at: https://static1.squarespace.com/static/544f552de4b0645de79fbe01/t/557f1c1ae4b0edab35dd92cf/1434393626361/CCF-27-03-12-for-PAMVR.pdf

Faculty of Physician Associates (2017) *An Employers Guide to Physician Associates (PA)*. Available at: https://www.fparcp.co.uk/file/media/59fc48cfaa576_PA_employers_guide_WEB_REVISE_21SEPT.pdf (Accessed: 31 August 2016).

Faculty of Physician Associates (2023) *Who are Physician Associates?* Available at: https://www.fparcp.co.uk/about-fpa/who-are-physician-associates (Accessed: 26 May 2023).

Fagan, P. *et al.* (2017) *Person-Centred Approaches : Empowering people in their lives and communities to enable an upgrade in prevention, wellbeing, health, care and support.*

FD Hobbs, R. *et al.* (2016) 'Clinical workload in UK primary care: a retrospective analysis of 100 million consultations in England, 2007–14', *Lancet*, 6736(16), pp. 2323–2330. Available at: https://doi.org/10.1016/S0140-6736(16)00620-6.

Fletcher, A.J. (2017) 'Applying critical realism in qualitative research: methodology meets method', *International Journal of Social Research Methodology*, 20(2), pp. 181–194. Available at: https://doi.org/10.1080/13645579.2016.1144401.

Ford, J.A. *et al.* (2016) 'Access to primary care for socioeconomically disadvantaged older people in rural areas: A realist review', *BMJ Open*, 6(5). Available at: https://doi.org/10.1136/bmjopen-2015-010652.

Freeman, C. *et al.* (2016) 'The practice pharmacist: a natural fit in the general practice team.', *Australian prescriber*, 39(6), pp. 211–214. Available at: https://doi.org/10.18773/austprescr.2016.067.

Freeman, G. and Hughes, J. (2010) *Continuity of care and the patient experience*. London. The Kings Fund.

Fuller, C. (2022) *Next steps for integrating primary care: Fuller Stocktake report*. Available at: https://www.england.nhs.uk/wp-content/uploads/2022/05/next-steps-for-integrating-primary-care-fuller-stocktake-report.pdf (Accessed: 5 August 2022).

General Medical Council (2019) *The reflective practitioner. Guidance for doctors and medical students*. Available at: https://www.gmc-uk.org/-/media/documents/dc11703-pol-w-the-reflective-practioner-guidance_pdf-78479611.pdf (Accessed: 20 September 2019).

Gilmore, B. (2017) *How do Community Health Committees Build Capacity for Community Health Systems Strengthening? A Realist Evaluation in Uganda*.

Gilmore, B. *et al.* (2019) 'Data Analysis and Synthesis Within a Realist Evaluation: Toward More Transparent Methodological Approaches', *International Journal of Qualitative Methods*, 18. Available at: https://doi.org/10.1177/1609406919859754.

Glicken, A.D. and Miller, A.A. (2013) 'Physician Assistants: from pipeline to practice', *Academic Medicine*, 88(12), pp. 1883–1889. Available at: https://doi.org/10.1097/ACM.0000000000000009.

Global Evaluation Initiative (2022) *Better Evaluation*. Available at: https://www.betterevaluation.org/en/rainbow_framework/define/develop_programme_theory (Accessed: 29 January 2020).

Goddard, M. *et al.* (2010) 'Where did all the GPs go? Increasing supply and geographical equity in England and Scotland', *Journal of Health Services Research & Policy*, 15(1), pp. 28–35. Available at: https://doi.org/10.1258/jhsrp.2009.009003.

Goldie, J. (2012) 'The formation of professional identity in medical students: considerations for educators', 44(0), pp. 641–648. Available at: https://doi.org/10.3109/0142159X.2012.687476.

Goodyear, R.K. and Bernard, J.M. (1998) 'Clinical supervision: Lessons from the literature', *Counselor Education and Supervision*, 38(1), pp. 6–22. Available at: https://doi.org/10.1002/j.1556-6978.1998.tb00553.x.

Goodyear-Smith, F. and Janes, R. (2008) 'New Zealand rural primary health care workforce in 2005: More than just a doctor shortage', *Australian Journal of Rural Health*, 16(1), pp. 40–46. Available at: https://doi.org/10.1111/j.1440-1584.2007.00949.x.

GPonline (2023) *RCGP sets out 'red lines' for physician associates in general practice*. Available at: https://www.gponline.com/rcgp-sets-red-lines-physician-associates-general-practice/article/1840720 (Accessed: 19 November 2023).

Gray, J., Darling-Pomranz, C. and Jackson, B. (2021) 'Developing Clinical Reasoning in a Physician Assistant Curriculum', *Journal of Physician Assistant Education*, Publish Ah(3), pp. 159–163. Available at: https://doi.org/10.1097/jpa.0000000000000367.

Greenhalgh, T. *et al.* (2015) 'Protocol--the RAMESES II study: developing guidance and reporting standards for realist evaluation.', *BMJ open*, 5(8), p. e008567. Available at: https://doi.org/10.1136/bmjopen-2015-008567.

Greenhalgh, T. *et al.* (2017) *The RAMESES II Project: Retroduction in realist evaluation*. Available at: www.ramesesproject.org/media/RAMESES_II_Retroduction.pdf (Accessed: 19 March 2023).

Greenhalgh, Trish *et al.* (2017) *The Realist Interview: The RAMESES II Project*. Available at: https://www.ramesesproject.org/media/RAMESES_II_Realist_interviewing.pdf (Accessed: 3 June 2023).

Grumbach, K. *et al.* (2003) 'Who is caring for the underserved? A comparison of primary care physicians and nonphysician clinicians in California and Washington.', *Annals of family medicine*, 1(2), pp. 97–104. Available at: https://doi.org/10.1370/AFM.49.

Ham, C. *et al.* (2017) *Delivering sustainability and transformation plans From ambitious proposals to credible plans*.

Hansen-Turton, T. *et al.* (2006) 'Insurer Policies Create Barriers To Health Care Access and Consumer Choice', *Nursing Economics*, 24(4), pp. 204–212.

Harris, R. and Leininger, L. (1993) 'Preventive care in rural primary care practice', *Cancer*, 72(3 S), pp. 1113–1118. Available at: https://doi.org/10.1002/1097-0142(19930801)72:3+<1113::AID-CNCR2820721328>3.0.CO;2-A.

Hauer, K.E. *et al.* (2014) 'Understanding trust as an essential element of trainee supervision and learning in the workplace', *Advances in Health Sciences Education*, 19(3), pp. 435–456. Available at: https://doi.org/10.1007/s10459-013-9474-4.

Health Education England (2014) *Investing in People For Health and Healthcare - Workforce Plan for England Proposed Education and Training Commissions 2014/15*, *Convergence*. Available at: https://doi.org/10.1784/insi.2006.48.9.550.

Health Education England (2015a) *Building the Workforce – the New Deal for General Practice*. Available at: https://www.england.nhs.uk/commissioning/wp-content/uploads/sites/12/2015/01/building-the-workforce-new-deal-gp.pdf (Accessed: 25 August 2015).

Health Education England (2015b) *Training Hubs - Funding Allocation Paper*. Available at: https://www.england.nhs.uk/south/wp-content/uploads/sites/6/2015/12/training-hubs-funding-all-paper.pdf

Health Education England (2016a) *Advanced Clinical Practice: defining the future forward role*. Available at: https://worcesterbb.blackboard.com/bbcswebdav/pid-777805-dt-content-rid-964409_1/courses/MSAP4001_S2.16-17/Advanced Clinical Practice HEE conference presentation February 2016.pdf

Health Education England (2016b) *Recruitment Figures 2016 General Practice ST1*.Available at: https://gprecruitment.hee.nhs.uk/Portals/8/Documents/Annual Reports/GP ST1 Recruitment Figures 2016.pdf. Accessed: 19th November 2017

Health Education England (2021a) *Advanced practice workplace supervision - Minimum standards for supervision*. Available at: https://advanced-practice.hee.nhs.uk/our-work/supervision/minimum-standards-for-supervision/

Health Education England (2021b) *Workplace Supervision for Advanced Clinical Practice : An integrated multi-professional approach for practitioner development*. Available at: https://advanced-practice.hee.nhs.uk/workplace-supervision-for-advanced-clinical-practice-2/

Health Education England (2023) *Roadmap supervision courses*. Available at: https://www.hee.nhs.uk/our-work/allied-health-professions/enable-workforce/roadmaps-practice/roadmap-supervision-courses (Accessed: 18 November 2023).

Health Education Yorkshire and the Humber (2015) *Advanced Practice Framework*. Available at: https://www.hee.nhs.uk/sites/default/files/documents/HEYH-AP-Framework-Final-V1.pdf

Heath, I. and Sweeney, K. (2005) 'Medical generalists: connecting the map and the territory.', *BMJ (Clinical research ed.)*, 331(7530), pp. 1462–4. Available at: https://doi.org/10.1136/bmj.331.7530.1462.

Henry, L., Hooker, R. and Yates, K. (2011) 'The Role of Physician Assistants in Rural Health Care: A Systematic Review of the Literature', *The Journal of Rural Health*, 27(2), pp. 220–229. Available at: https://doi.org/10.1111/j.1748-0361.2010.00325.x.

Henry, L.R. and Hooker, R.S. (2014) 'Caring for the disadvantaged: The role of physician assistants', *Journal of the American Association of Physician Associates*, 27, pp. 36–42. Available at: https://doi.org/10.1097/01.JAA.0000438532.92138.53.

Hippisley-Cox, J. and Vinogradova, Y. (2009) *Trends in Consultation Rates in General Practice 1995/1996 to 2008/2009: Analysis of the QResearch® database.*

Hooker, R.S. and Cawley, J.F. (2013) 'Physician Assistants in American Medicine: the half century mark', *American Journal of Managed Care*, 19(10), pp. e333-341.

Hooker, R.S. and Everett, C.M. (2012) 'The contributions of physician assistants in primary care systems.', *Health and Social Care in the Community*, 20(1), pp. 20–31. Available at: https://doi.org/10.1111/j.1365-2524.2011.01021.x.

Horrocks, S., Anderson, E. and Salisbury, C. (2002) 'Systematic review of whether Nurse Practitioners working in primary care can provide equivalent care to doctors', *British Medical Journal*, 324(7341), pp. 819–823. Available at: https://doi.org/10.1136/bmj.324.7341.819.

House of Commons Health Committee (2007) *Workforce Planning Fourth Report of Session 2006-07*. London. Available at: https://publications.parliament.uk/pa/cm200607/cmselect/cmhealth/171/171i.pdf (Accessed: 22 July 2018).

House of Commons Health Committee (2014) *Managing the care of people with long–term conditions Second Report of Session 2014–15*.

Howarth, S.D. *et al.* (2020) 'The early experiences of Physician Associate students in the UK: A regional cross-sectional study investigating factors associated with engagement'. Available at: https://doi.org/10.1371/journal.pone.0232515.

Hutchinson, J. *et al.* (2023) 'How new clinical roles in primary care impact on equitable distribution of workforce: a retrospective study', *The British journal of general practice : the journal of the Royal College of General Practitioners*, 73(734), pp. e659–e666. Available at: https://doi.org/10.3399/BJGP.2023.0007.

Imison, C. *et al.* (2017) *Shifting the balance of care: great expectations*. Nuffield Trust. Available at: https://www.nuffieldtrust.org.uk/files/2017-02/shifting-the-balance-of-care-summary-web-final.pdf

Institute for Health Equity (2019) *Working Toward Health Equity*. Available at: http://www.instituteofhealthequity.org/about-our-work/working-toward-heath-equity- (Accessed: 16 November 2019).

Ipsos Mori (2016) *GP Patient Survey - National Summary Report*. Available at: https://www.gp-patient.co.uk/surveysandreports-10-16

Irvine, H. and Gomez, J. (2015) 'Using routinely collected data to figure out where the NHS is going wrong', in *Deep End General Practice Annual Conference* Available at: https://www.gla.ac.uk/media/Media_443697_smxx.pdf

Jackson, B., Irvine, H. and Walton, E. (2017) 'General practice and the sustainability and transformation imperatives', *British Journal of General Practice*, 67(658), pp. 196–197. Available at: https://doi.org/10.3399/bjgp17X690569.

Jackson, B., Marshall, M. and Schofield, S. (2017) 'Barriers and facilitators to integration of physician associates into the general practice workforce: A grounded theory approach', *British Journal of General Practice*, 67(664), pp. e785–e791. Available at: https://doi.org/10.3399/bjgp17X693113.

Jackson, S.F. and Kolla, G. (2012) 'A New Realistic Evaluation Analysis Method: Linked Coding of Context, Mechanism, and Outcome Relationships', *American Journal of Evaluation*, 33(3), pp. 339–349. Available at: https://doi.org/10.1177/1098214012440030.

Jagosh, J. *et al.* (2012) 'Uncovering the benefits of participatory research: implications of a realist review for health research and practice.', *The Milbank quarterly*, 90(2), pp. 311–46. Available at: https://doi.org/10.1111/j.1468-0009.2012.00665.x.

Jagosh, J. (2020) 'Retroductive theorizing in Pawson and Tilley's applied scientific realism', *Journal of Critical Realism*, 19(2), pp. 121–130. Available at: https://doi.org/10.1080/14767430.2020.1723301.

Joanna Briggs Institute (2014) *Joanna Briggs Institute Reviewers Manual: 2014 Edition*. Adelaide: Joanna Briggs Institute.

Kastner, M. *et al.* (2011) 'Understanding the relationship between the perceived characteristics of clinical practice guidelines and their uptake: protocol for a realist review', *Implementation Science*, 6(1), p. 69. Available at: https://doi.org/10.1186/1748-5908-6-69.

Kilminster, S. *et al.* (2007) 'AMEE Guide No. 27: Effective educational and clinical supervision', *Medical Teacher*, 29(1), pp. 2–19. Available at: https://doi.org/10.1080/01421590701210907.

Kilminster, S. and Jolly, B. (2000) 'Effective supervision in clinical practice settings: a literature review', *Medical Education*, 34(10), pp. 827–840. Available at: https://doi.org/10.1046/j.1365-2923.2000.00758.x.

Kolb, D. A. and Kolb, A. Y. (2013) The Kolb Learning Style Inventory 4.0: Guide to Theory, Psychometrics, Research & Applications. Available at: https://www.researchgate.net/publication/303446688 (Accessed: 4 June 2022).

Laurant, M. *et al.* (2010) *Revision of professional roles and quality improvement: a review of the evidence QQUIP and the Quality Enhancing Interventions Project*. London. The Health Foundation. Laurant, M. *et al.* (2018) *Nurses as substitutes for doctors in primary care*, *Cochrane Database of Systematic Reviews*. John Wiley & Sons, Ltd. Available at: https://doi.org/10.1002/14651858.CD001271.pub3.

Lave, J. (2010) 'Situated Learning in Communities of Practice', *AORN Journal*, 92(3), pp. 253–255. Available at: https://doi.org/10.1016/j.aorn.2010.06.009.

Lave, J. and Wenger, E. (1991) *Situated learning - legitimate peripheral participation*. Cambridge University Press.

Lemire, S. *et al.* (2020) 'What Is This Thing Called a Mechanism? Findings From a Review of Realist Evaluations', *New Directions for Evaluation*, (167), pp. 73–86. Available at: https://doi.org/10.1002/EV.20428.

Levene, L.S. *et al.* (2016) 'Population health needs as predictors of variations in NHS practice payments: a cross-sectional study of English general practices in 2013–2014 and 2014–2015', *British Journal of General Practice*, 67(654), pp. e10–e19. Available at: https://doi.org/10.3399/bjgp16X688345.

Levene, L.S. *et al.* (2019) 'Socioeconomic deprivation scores as predictors of variations in NHS practice payments: a longitudinal study of English general practices 2013–2017', *British Journal of General Practice*, 69(685), pp. e546–e554. Available at: https://doi.org/10.3399/BJGP19X704549.

Levesque, J.F., Harris, M.F. and Russell, G. (2013) 'Patient-centred access to health care: Conceptualising access at the interface of health systems and populations', *International Journal for Equity in Health*, 12(1). Available at: https://doi.org/10.1186/1475-9276-12-18.

Lipton, P. (2000) 'Inference to the best explanation', in W.H. Newton-Smith (ed.) *A companion to the Philosophy of Science*. Blackwell, pp. 184–193. Available at: https://doi.org/10.4324/9780203470855.

Macinko, J., Starfield, B. and Shi, L. (2003) 'The contribution of primary care systems to health outcomes within Organization for Economic Cooperation and Development (OECD) countries, 1970-1998', *Health Services Research*, 38(3), pp. 831–865. Available at: https://doi.org/10.1111/1475-6773.00149.

Maidment, I. *et al.* (2017) 'Developing a framework for a novel multi-disciplinary, multi-agency intervention(s), to improve medication management in community-dwelling older people on complex medication regimens (MEMORABLE)--a realist synthesis', *Systematic Reviews*, 6(1), pp. 4–11. Available at: https://doi.org/10.1186/s13643-017-0528-1.

Majeed, A. (2015) 'Primary care: A fading jewel in the NHS crown', *London Journal of Primary Care*, 7(5), pp. 89–91. Available at: https://doi.org/10.1080/17571472.2015.1082343.

Management In Practice (2023) *Calls for change after 'poor care' from physician associate contributed to patient's death*. Available at: https://managementinpractice.com/news/calls-for-change-after-poor-care-from-physician-associate-contributed-to-patients-death/ (Accessed: 18 November 2023).

Manley, K. *et al.* (2018) 'A realist synthesis of effective continuing professional development (CPD): A case study of healthcare practitioners' CPD', *Nurse Education Today*, 69, pp. 134–141. Available at: https://doi.org/10.1016/j.nedt.2018.07.010.

Manzano, A. (2016) 'The craft of interviewing in realist evaluation', *Evaluation*, 22(3), pp. 342–360. Available at: https://doi.org/10.1177/1356389016638615.

Marchal, B. *et al.* (2012) 'Is realist evaluation keeping its promise? A review of published empirical studies in the field of health systems research', *Evaluation*, 18(2), pp. 192–212. Available at: https://doi.org/10.1177/1356389012442444.

Marchal, B., Kegels, G. and Van Belle, S. (2019) 'Theory and Realist Methods', in N. Emmel et al. (eds) *Doing Realist Research*. First. London: SAGE Publications.

Marmot, M. (2010) *Fair society, Healthy Lives. Strategic Review of Health Inequalities in England post-2010*. Available at: https://doi.org/10.1016/j.puhe.2012.05.014.

Marshall, M. (2015) 'The Role of General Practice in the English NHS', *New England Journal of Medicine*, 372(10), pp. 893–897.

Martin, C.M. and Sturmberg, J.P. (2005) 'General practice — chaos, complexity and innovation', *Medical Journal of Australia*, 183(2), pp. 106–109. Available at: https://doi.org/10.5694/j.1326-5377.2005.tb06943.x.

Maxwell, J. (2012) *A realist approach for qualitative research*. SAGE Publications.

Mazzocato, P. *et al.* (2010) 'Lean thinking in healthcare: a realist review of the literature', *Quality & safety in health care*, 19, pp. 376–382. Available at: https://doi.org/10.1136/qshc.2009.037986.

Mcainey, C.A. *et al.* (2018) 'Perspectives of nurse practitioner-physician collaboration among nurse practitioners in Canadian long-term care homes: A national survey'. Available at: https://doi.org/10.12927/cjnl.2017.25452.

McDermott, I. *et al.* (2022) 'Scale, scope and impact of skill mix change in primary care in England: a mixed-methods study', *Health and Social Care Delivery Research*, 10(9). Available at: https://doi.org/10.3310/YWTU6690.

Mckaughan, D.J. (2008) 'From Ugly Duckling to Swan: C.S Peirce, Abduction, and the Pursuit of Scientific Theories', *Transactions of the Charles S. Peirce Society*, 44(3), pp. 446–468. Available at: https://doi.org/10.1353/csp.0.0041.

McLean, G. *et al.* (2015) 'General practice funding underpins the persistence of the inverse care law: Cross-sectional study in Scotland', *British Journal of General Practice*, 65(641), pp. e799–e805. Available at: https://doi.org/10.3399/bjgp15X687829.

Mercer, S.W. *et al.* (2009) 'Multimorbidity in primary care: developing the research agenda.', *Family practice*, 26(2), pp. 79–80. Available at: https://doi.org/10.1093/fampra/cmp020.

Mercer, S.W. *et al.* (2016) 'General practitioners' empathy and health outcomes: A prospective observational study of consultations in areas of high and low deprivation', *Annals of Family Medicine*, 14(2). Available at: https://doi.org/10.1370/afm.1910.

Mercer, S.W. and Watt, G.C.M. (2007) 'The inverse care law: Clinical primary care encounters in deprived and affluent areas of Scotland', *Annals of Family Medicine*, 5(6), pp. 503–510. Available at: https://doi.org/10.1370/afm.778.

Merton, R.K. (1968) 'On Sociological Theories of the Middle Range', in *Social Theory and Social Structure*. The Free Press, pp. 39–72.

Milne, D. (2007) 'An empirical definition of clinical supervision', *British Journal of Clinical Psychology*, 46(4), pp. 437–447. Available at: https://doi.org/10.1348/014466507X197415.

Milne, D. *et al.* (2008) 'How does clinical supervision work? Using a best evidence synthesis approach to construct a basic model of supervision', *Clinical Supervisor*, 27(2), pp. 170–190. Available at: https://doi.org/10.1080/07325220802487915.

Ministry of Housing Communities and Local Government. UK Government. (2015) *English indices of deprivation 2015*. Available at: https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015 (Accessed: 14 September 2019).

Mobula, L.M. *et al.* (2015) 'Cultural competence and perceptions of community health workers' effectiveness for reducing health care disparities', *Journal of Primary Care and Community Health*, 6(1), pp. 10–15. Available at: https://doi.org/10.1177/2150131914540917.

Moran, G.M. and Nairn, S. (2018) 'How does role transition affect the experience of trainee Advanced Clinical Practitioners: Qualitative evidence synthesis', *Journal of Advanced Nursing*, 74(2), pp. 251–262. Available at: https://doi.org/10.1111/JAN.13446.

Morton-Cooper, A. and Palmer, A. (2000) *Mentoring, Preceptorship and Clinical Supervision*. 2nd edn. Blackwell Science Ltd.

Mukumbang, F.C. *et al.* (2020) 'Using the realist interview approach to maintain theoretical awareness in realist studies', *Qualitative Research*, 20(4), pp. 485–515. Available at: https://doi.org/10.1177/1468794119881985.

National General Practice Profiles - Data - OHID (2019). Available at: https://fingertips.phe.org.uk/profile/general-practice/data#page/6/gid/2000005/pat/165/par/E38000085/ati/7/are/B81085/iid/93553/age/1/sex/4/cid/4/page-options/ovw-do-0_car-do-0 (Accessed: 3 June 2023).

National Institutute for Health and Care Research (no date) *Payment guidance for researchers and professionals | NIHR*. Available at: https://www.nihr.ac.uk/documents/payment-guidance-for-researchers-and-professionals/27392 (Accessed: 19 October 2023).

National Institutute for Health Research (2021) *NIHR publishes new framework on complex interventions to improve health | NIHR*. Available at: https://www.nihr.ac.uk/news/nihr-publishes-new-framework-on-complex-interventions-to-improve-health/28803 (Accessed: 8 April 2023).

Nelson, P. *et al.* (2018) 'Skill-mix change and the general practice workforce challenge', *British Journal of General Practice*, 68(669), pp. 176.2-176. Available at: https://doi.org/10.3399/bjgp18x695429.

Nelson, P.A. *et al.* (2017) *Greater Manchester Primary Care Workforce Strategy: Rapid Literature Review.*, *NIHR Collaboration for Leadership in Applied Health Research and Care (CLAHRD GM)*.

Nelson, P.A. *et al.* (2019) 'Skill-mix change in general practice: a qualitative comparison of three "new" non-medical roles in English primary care', *British Journal of General Practice*, 69(685), pp. 489–498. Available at: https://doi.org/10.3399/bjgp19X705017.

NHS (2023) *Health careers: Physician associate*. Available at: https://www.healthcareers.nhs.uk/explore-roles/medical-associate-professions/roles-medical-associate-professions/physician-associate (Accessed: 26 May 2023).

NHS Changing Workforce programme (2001) *Changing Workforce Programme*. Available at: https://webarchive.nationalarchives.gov.uk/20120504025315/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4058219.pdf. (Accessed: 22nd September 2016)

NHS Digital (2021) *NHS Payments to General Practice England, 2020/21 - NDRS*. Available at: https://digital.nhs.uk/data-and-information/publications/statistical/nhs-payments-to-general-practice/england-2020-21# (Accessed: 16 January 2023).

NHS eLearning for Healthcare (2021) *Supervision for Multi-Professional Teams - eLearning for healthcare*. Available at: https://www.e-lfh.org.uk/programmes/supervision-for-multi-professional-teams/ (Accessed: 18 November 2023).

NHS Employers (no date) *Regulation of physician associates and anaesthesia associates - NHS Employers*, *2019*. Available at: https://www.nhsemployers.org/news/2019/08/regulation-of-physician-associates-and-anaesthesia-associates (Accessed: 21 September 2019).

NHS England (2014) *Five Year Forward View*. Available at: http://www.england.nhs.uk/ourwork/futurenhs/

NHS England (2015) *Delivering the Forward View : NHS planning guidance*. Available a: https://www.england.nhs.uk/publication/delivering-the-forward-view-nhs-planning-guidance-201617-202021/

NHS England (2016a) *General Practice Forward View*. Available at: https://www.england.nhs.uk/wp-content/uploads/2016/04/gpfv.pdf (Accessed: 26 April 2016).

NHS England (2016b) *NEW CARE MODELS: Vanguards - developing a blueprint for the future of the NHS and care services*. Available at https://www.england.nhs.uk/wp-content/uploads/2015/11/new_care_models.pdf

NHS England (2016c) *STP aide-mémoire : Primary care*. Available at https://cpe.org.uk/wp-content/uploads/2013/04/PSNC-Briefing-047.16-STP-aide-memoires.pdf.

NHS England (2017) *Multi-professional framework for advanced clinical practice in England*. Available at: https://hee.nhs.uk/sites/default/files/documents/HEE ACP Framework.pdf (Accessed: 3 December 2017).

NHS England (2019) *The NHS Long Term Plan*. Available at: www.longtermplan.nhs.uk (Accessed: 29 March 2019).

NHS England (2021) *NHS England » National Cost Collection for the NHS*. Available at: https://www.england.nhs.uk/costing-in-the-nhs/national-cost-collection/ (Accessed: 16 January 2023).

NHS England (2023a) *Clinical Pharmacists*. Available at: https://www.england.nhs.uk/gp/expanding-our-workforce/cp-gp/.

NHS England (2023b) *NHS Long Term Workforce Plan*. Available at: https://www.england.nhs.uk/publication/nhs-long-term-workforce-plan/ (Accessed: 2 July 2023).

NHS England and British Medical Association (2019) *Investment and evolution: A five-year framework for GP contract reform to implement The NHS Long Term Plan*. NHS England. Available at: https://www.england.nhs.uk/wp-content/uploads/2019/01/gp-contract-2019.pdf (Accessed: 29 March 2019).

Nussbaum, C. *et al.* (2021) 'Inequalities in the distribution of the general practice workforce in England: a practice-level longitudinal analysis', *BJGP Open*, 5(5). Available at: https://doi.org/10.3399/BJGPO.2021.0066.

O'Brien, R. *et al.* (2011) 'An "endless struggle": a qualitative study of general practitioners' and practice nurses' experiences of managing multimorbidity in socio-economically deprived areas of Scotland.', *Chronic Illness*, 7(1), pp. 45–59. Available at: https://doi.org/10.1177/1742395310382461.

O'Cathain, A. *et al.* (2019) '"Clinically unnecessary" use of emergency and urgent care: A realist review of patients' decision making', *Health Expectations*, (October), pp. 1–22. Available at: https://doi.org/10.1111/hex.12995.

O'Connor, T.M. and Hooker, R.S. (2007) 'Extending rural and remote medicine with a new type of health worker: Physician assistants', *Australian Journal of Rural Health*, 15(6), pp. 346–351. Available at: https://doi.org/10.1111/j.1440-1584.2007.00926.x.

Odell, E. *et al.* (2013) 'Gaps in the primary care of rural and underserved populations: The impact of nurse practitioners in four Mississippi Delta states', *Journal of the American Association of Nurse Practitioners*, 25(12), pp. 659–666. Available at: https://doi.org/10.1111/1745-7599.12023.

Oxford English Dictionary (2023) *'ontology, n.'*. Available at: https://www.oed.com/view/Entry/131551?redirectedFrom=ontology.

Oxford English Dictionary (2023) *'epistemology, n.'*. Available at: https://www.oed.com/view/Entry/63546?redirectedFrom=epistemology.

Papoutsi, C. *et al.* (2018) 'Interventions to improve antimicrobial prescribing of doctors in training (IMPACT): a realist review', *Health Services and Delivery Research*, 6(10), pp. 1–136. Available at: https://doi.org/10.3310/hsdr06100.

Parle, J. V, Ross, N.M. and Doe, W.F. (2006) 'The medical care practitioner: developing a physician assistant equivalent for the United Kingdom', *Medical journal of Australia*, 185(1), pp. 13–17.

Pawson, R. (1996) 'Theorizing the Interview', *British Journal of Sociology*, 47(2), pp. 295–314.

Pawson, R. (2000) 'Middle-range realism', *European Journal of Sociology*, 41(2), pp. 283–325.

Pawson, R. (2002) 'Evidence-based Policy: The Promise of "Realist Synthesis"', *Evaluation*, 8(3), pp. 340–358. Available at: https://doi.org/10.1177/135638902401462448.

Pawson, R. (2003) 'Nothing as Practical as a Good Theory', *Evaluation*, 9(4), pp. 471–490. Available at: https://doi.org/10.1177/1356389003094007.

Pawson, R. (2004) *Mentoring relationships: an explanatory review*. Working Paper 21. ESRC UK Centre for Evidence Based Policy and Practice. Available at: https://youthmentoring.org.nz/content/docs/pawson_article.pdf

Pawson, R. *et al.* (2004) Realist synthesis: an introduction. ESRC Research Methods Programme (Research Methods Papers 1). Available via: https://www.betterevaluation.org/sites/default/files/RMPmethods2.pdf.

Pawson, R. *et al.* (2005) 'Realist review – a new method of systematic review designed for complex policy interventions', *Journal of Health Services Research & Policy*, 10, pp. 21–34.

Pawson, R. (2012) *Realist Synthesis: New Protocols for Systematic Review*, *Evidence-based Policy*. Available at: https://doi.org/10.4135/9781849209120.n4.

Pawson, R. (2013) 'First Principles: A Realist Diagnostic Workshop', in *The Science of Evaluation - A Realist Manifesto*, pp. 13–31. Available at: https://doi.org/10.4135/9781473913820.n2.

Pawson, R. (2018) 'Precursors: Seven Pillars of Realist Wisdom', in *The Science of Evaluation: A Realist Manifesto*, pp. 3–12. Available at: https://doi.org/10.4135/9781473913820.n1.

Pawson, R. and Tilley, N. (1997) *Realistic Evaluation*. London: SAGE Publications.

Pawson, R. and Tilley, N. (2004) *Realist Evaluation*. Available at: http://www.dmeforpeace.org/sites/default/files/RE_chapter.pdf (Accessed: 21 November 2017).

Payne, R.A. *et al.* (2013) 'The effect of physical multimorbidity, mental health conditions and socioeconomic deprivation on unplanned admissions to hospital: a retrospective cohort study.', *CMAJ : Canadian Medical Association journal = journal de l'Association medicale canadienne*, 185(5), pp. E221-8. Available at: https://doi.org/10.1503/cmaj.121349.

Pearson, M. *et al.* (2015) 'Using realist review to inform intervention development: Methodological illustration and conceptual platform for collaborative care in offender mental health', *Implementation Science*, 10(1), pp. 1–12. Available at: https://doi.org/10.1186/s13012-015-0321-2.

Pedersen, A.F. *et al.* (2014) 'Understanding the inverse care law: a register and survey-based study of patient deprivation and burnout in general practice', *International Journal for Equity in Health*, 13(1), p. 121. Available at: https://doi.org/10.1186/s12939-014-0121-3.

Pericak, A. (2011) 'Increased autonomy for nurse practitioners as a solution to the physician shortage.', *The Journal of the New York State Nurses' Association*, 42(1–2).

Pham, M.T. *et al.* (2014) 'A scoping review of scoping reviews: Advancing the approach and enhancing the consistency', *Research Synthesis Methods*, 5(4), pp. 371–385. Available at: https://doi.org/10.1002/jrsm.1123.

Plint, S. (2014) *Securing the future GP workforce. Delivering the mandate on GP expansion. GP taskforce final report.* Available at: http://hee.nhs.uk/wp-content/uploads/sites/321/2014/07/GP-Taskforce-report.pdf.

Poghosyan, L. and Carthon, J.M.B. (2017) 'The Untapped Potential of the Nurse Practitioner Workforce in Reducing Health Disparities', *Policy, Politics, and Nursing Practice*, 18(2), pp. 84–94. Available at: https://doi.org/10.1177/1527154417721189.

Prasad, S. *et al.* (2014) 'Rural Geriatric Glue: A Nurse Practitioner-Led Model of Care for Enhancing Primary Care for Frail Older Adults within an Ecosystem Approach', *Journal of the American Geriatrics Society*, 62(9), pp. 1772–1780. Available at: https://doi.org/10.1111/jgs.12982.

Primary Care Commissioning Unit(2016) *General Practice Resilience Programme*. NHS England. Available at: https://www.england.nhs.uk/wp-content/uploads/2016/07/gp-resilience-prog.pdf

Primary Care Pharmacists' Association (2015) 'A guide for GPs considering employing a practice pharmacist'. Available at: http://www.doncasterlmc.co.uk/Guide for GPs employing pharmacy staff.pdf

Primary Care Workforce Commission (2015) *The future of primary care; Creating teams for tomorrow*. Available at: https://www.hee.nhs.uk/sites/default/files/documents/The Future of Primary Care report.pdf.

Proctor, B. (2008) *Group Supervision. A guide to creative practice*. London. SAGE.

Proctor, B. (2010) 'Training for the supervision alliance: Attitude, skills and intention', in *Routledge Handbook of Clinical Supervision* . Routledge, pp. 51–62. Available at: https://doi.org/10.4324/9780203843437-12.

Pulse Online (2023a) *GMC asks NHS England to reassure doctors there is 'no plan to replace them with PAs'*. Available at: https://www.pulsetoday.co.uk/news/workforce/gmc-asks-nhs-england-to-reassure-doctors-there-is-no-plan-to-replace-them-with-pas/ (Accessed: 19 November 2023).

Pulse Online (2023b) *Not enough GPs? Thousands of us are now unemployed*. Available at: https://www.pulsetoday.co.uk/views/dr-burnt-out/not-enough-gps-thousands-of-us-are-now-unemployed/ (Accessed: 18 November 2023).

Reeve, C. *et al.* (2008) 'Expanding the role of paramedics in northern Queensland: An evaluation of population health training', *Australian Journal of Rural Health*, 16(6), pp. 370–375. Available at: https://doi.org/10.1111/j.1440-1584.2008.01018.x.

Reeve, J. (2010) 'Interpretive medicine: Supporting generalism in a changing primary care world.', *Occasional paper (Royal College of General Practitioners)*, (88), pp. 1–20, v.

Richard, L. *et al.* (2016) 'Equity of access to primary healthcare for vulnerable populations: the IMPACT international online survey of innovations', *International Journal for Equity in Health*, 15(1), p. 64. Available at: https://doi.org/10.1186/s12939-016-0351-7.

Richie, J. and Spencer, L. (1994) 'Qualitative data analysis for applied policy research', in A. Bryman and R.G. Burgess (eds) *Analyzing qualitative data*. Routledge, pp. 173–194.

Ritzer, G. and Stillman, T. (2011) 'Middle-Range Theory', in M. Lewis-Beck, A. Bryman, and T.F. Liao (eds) *The SAGE Encyclopedia of Social Science Research Methods*. Thousand Oaks: SAGE Publications. Available at: https://doi.org/10.4135/9781412950589.

Roberts, S. *et al.* (2019) '"What can you do then?" Integrating new roles into healthcare teams: Regional experience with physician associates', *Future Healthcare Journal*, 6(1), pp. 61–67.

Rodríguez, C. and Pozzebon, M. (2010) 'The implementation evaluation of primary care groups of practice: a focus on organizational identity.', *BMC Family Practice*, 11:15.

Rogers, P.J. (2008) 'Using programme theory to evaluate complicated and complex aspects of interventions', *Evaluation*, 14(1), pp. 29–48. Available at: https://doi.org/10.1177/1356389007084674.

Roland, M. and Everington, S. (2016) 'Tackling the crisis in general practice', *BMJ*, 352. Available at: https://doi.org/10.1136/BMJ.I942.

Roland, M. and Guthrie, B. (2016) 'Quality and Outcomes Framework: what have we learnt?', *BMJ*, 354. Available at: https://doi.org/10.1136/BMJ.I4060.

Rosen, R. and Mountford, L. (2002) 'Developing and supporting extended nursing roles: the challenges of NHS walk-in centres', *Journal of Advanced Nursing*, 39(3), pp. 241–248. Available at: https://doi.org/10.1046/j.1365-2648.2002.02270.x.

Ross, N. *et al.* (2012) 'The case for the physician assistant.', *Clinical Medicine*, 12(3), pp. 200–6.

Rothwell, C. *et al.* (2019) *The characteristics of effective clinical and peer supervision in the workplace: a rapid evidence review. Final report*. Newcastle University. Available at: https://search.informit.com.au/documentSummary;dn=335926596849550;res=IELNZC

Rothwell, C. *et al.* (2021) 'Enablers and barriers to effective clinical supervision in the workplace: A rapid evidence review', *BMJ Open*, 11(9), pp. 1–10. Available at: https://doi.org/10.1136/bmjopen-2021-052929.

Royal College of General Practitioners (2011) *RCGP response to Department of Health consultation - Liberating the NHS: Developing the Healthcare Workforce*. Available at: https://web.archive.org/web/20210828214409/https://www.rcgp.org.uk/policy/rcgp-consultations.aspx

Royal College of General Practitioners (2012) *Medical generalism*. Available at: http://www.rcgp.org.uk/policy/rcgp-policy-areas/~/media/Files/Policy/A-Z policy/Medical-Generalism-Why_expertise_in_whole_person_medicine_matters.ashx

Royal College of General Practitioners (2013) *The 2022 GP A Vision for General Practice in the future NHS*. Available at: http://www.rcgp.org.uk/gp2022

Royal College of General Practitioners (2015) *PRIMARY CARE WORKFORCE COMMISSION Submission of evidence by the Royal College of General Practitioners*.

Royal College of General Practitioners (2018) *An RCGP position statement on the wider clinical team in general practice*. Available at: https://www.researchgate.net/publication/325999968_An_RCGP_position_statement_on_the_wider_clinical_team_in_general_practice.

Royal Pharmaceutical Society (2016) 'General Practice Based Pharmacist Job Description'. Available at: https://www.rpharms.com/Portals/0/RPS document library/Open access/Policy statements/practice-based-pharmacist-job-spec-final.pdf?ver=2016-10-13-101708-230

Rybczynska-Bunt, S. *et al.* (2021) 'Clarifying realist analytic and interdisciplinary consensus processes in a complex health intervention: A worked example of Judgemental Rationality in action', *Evaluation*, 27(4), pp. 473–491. Available at: https://doi.org/10.1177/13563890211037699.

Rycroft-Malone, J. *et al.* (2012) 'Realist synthesis: illustrating the method for implementation research.', *Implementation Science*, 7(1), p. 33. Available at: https://doi.org/10.1186/1748-5908-7-33.

Sayer, A. (2004) 'Why critical realism?', in S. Fleetwood and S. Ackroyd (eds) *Critical Realist Applications in Organisation and Management Studies.* London: Routledge, pp. 6–20.

Schön, D.A. (2017) *The reflective practitioner: How professionals think in action*, *The Reflective Practitioner: How Professionals Think in Action*. Ashgate. Available at: https://doi.org/10.4324/9781315237473.

Selleck, C.S. *et al.* (2017) 'Providing primary care using an interprofessional collaborative practice model: What clinicians have learned', *Journal of Professional Nursing*, 33(6), pp. 410–416. Available at: https://doi.org/10.1016/j.profnurs.2016.11.004.

Sibbald, B. (2005) *Putting general practitioners where they are needed : an overview of strategies to correct maldistribution*. National Primary Care Research and Development Centre.

Sibbald, B., Shen, J. and Mcbride, A. (2004) 'Changing the skill-mix of the health care workforce', *Journal of Health Services Research & Policy*, 9(1_suppl), pp. 28–38. Available at: https://doi.org/10.1258/135581904322724112.

Skills for Health (2010) 'Key Elements of the Career Framework'. Available at: https://www.skillsforhealth.org.uk/wp-content/uploads/2020/11/Career_framework_key_elements.pdf

Skivington, K. *et al.* (2021) 'A new framework for developing and evaluating complex interventions: update of Medical Research Council guidance', *BMJ*, 374. Available at: https://doi.org/10.1136/bmj.n2061.

Smith, C. and Elger, T. (2012) *Critical realism and interviewing subjects.*, *Studying organizations using critical realism: A practical guide*. School of Management, Royal Holloway University of London. Available at: https://repository.royalholloway.ac.uk/file/227fa20a-3bd7-840c-8ac4-13c20c2f744f/9/Smith_Chris_Critical_Realism_and_Interviewing_SOM_Working_Paper.pdf

Smith, J. *et al.* (2013) *Securing the future of general practice: new models of primary care.* London. The Kings Fund and Nuffield Trust. Available at: https://www.nuffieldtrust.org.uk/research/securing-the-future-of-general-practice-new-models-of-primary-care

Smith, M.J. and Liehr, P.R. (2014) 'Setting the Stage for Middle Range Theories', in *Middle Range Theory for Nursing*. Third Edit. Springer Publishing Company, pp. 3–14.

Spencer L *et al.* (2003) *Quality in Qualitative Evaluation: A Framework for Assessing Research Evidence*. London. Cabinet Office, HMSO

Spooner, S. *et al.* (2020) 'Regional variation in practitioner employment in general practices in England: A comparative analysis', *British Journal of General Practice*, 70(692), pp. E164–E171. Available at: https://doi.org/10.3399/BJGP20X708185.

Stame, N. (2004) 'Theory-Based Evaluation and Types of Complexity', *Evaluation*, 10(1), pp. 58–76. Available at: https://doi.org/10.1177/1356389004043135.

Starfield, B. (2012) 'Primary care: An increasingly important contributor to effectiveness, equity, and efficiency of health services. SESPAS report 2012', *Gaceta Sanitaria*, 26(SUPPL.1), pp. 20–26. Available at: https://doi.org/10.1016/j.gaceta.2011.10.009.

Starfield, B. and Horder, J. (2007) 'Interpersonal continuity: Old and new perspectives', *British Journal of General Practice*, 57(540), pp. 527–529.

Starfield, B., Shi, L. and Macinko, J. (2005) 'Contribution of Primary Care to Health Systems and Health', *The Milbank Quarterly*, 83(3), pp. 457–502. Available at: https://doi.org/10.1111/J.1468-0009.2005.00409.X.

Stewart, A. and Catanzaro, R. (2005) 'Can physician assistants be effective in the UK?', *Clinical Medicine*, 5(4), pp. 344–348.

Street, D. and Cossman, J.S. (2010) 'Does familiarity breed respect? Physician attitudes toward nurse practitioners in a medically underserved state', *Journal of the American Academy of Nurse Practitioners*, 22(8), pp. 431–439. Available at: https://doi.org/10.1111/j.1745-7599.2010.00531.x.

Sturman, N., Parker, M. and Jorm, C. (2021) 'Clinical supervision in general practice training: the interweaving of supervisor, trainee and patient entrustment with clinical oversight, patient safety and trainee learning', *Advances in Health Sciences Education*, 26(1), pp. 297–311. Available at: https://doi.org/10.1007/s10459-020-09986-7.

Tan, E.C.K. *et al.* (2014) 'Pharmacist consultations in general practice clinics: The Pharmacists in Practice Study (PIPS)', *Research in Social and Administrative Pharmacy*, 10(4), pp. 623–632. Available at: https://doi.org/10.1016/J.SAPHARM.2013.08.005.

The Health Foundation (2017) *Rising pressure : the NHS workforce challenge*. Available at: http://www.health.org.uk/sites/health/files/RisingPressureNHSWorkforceChallenge.pdf (Accessed: 28 November 2017).

The Health Foundation (2021) *Unequal pandemic, fairer recovery: The COVID-19 impact inquiry report*. Available at: https://doi.org/10.37829/HF-2021-HL12.

The Health Foundation (2022) *Projections: General practice workforce in England*. Available at: https://www.health.org.uk/sites/default/files/upload/publications/2022/GP workforce projections_July_2022_Website version_UPDATED.pdf.

The King's Fund (2009) *NHS workforce planning*. Available at: https://www.kingsfund.org.uk/sites/default/files/NHS-Workforce-Planning-Candace-Imison-James-Buchan-Su-Xavier-Kings-Fund-November-2009.pdf.

The King's Fund (2015) *NHS Spending squeezed as never before*, *The King's Fund*. Available at: https://www.kingsfund.org.uk/blog/2015/10/nhs-spending-squeezed-never (Accessed: 1 March 2019).

The King's Fund (2016) *Supporting integration through new roles and working across boundaries*. Available at: https://www.kingsfund.org.uk/publications/supporting-integration-new-roles-boundaries.

The King's Fund (2019) *Closing the gap - Key areas for action on the health and care workforce*. Available at: https://www.kingsfund.org.uk/sites/default/files/2019-03/closing-the-gap-health-care-workforce-full-report.pdf.

The King's Fund (2022) *Public satisfaction with the NHS and social care in 2021: Results from the British Social Attitudes Survey*. Available at: https://www.kingsfund.org.uk/publications/public-satisfaction-nhs-social-care-2021 (Accessed: 13 January 2023).

The Nuffield Trust (2019) *Results and trends from the British Social Attitudes survey in 2019: Results from the British Social Attitudes Survey*. Available at: https://www.nuffieldtrust.org.uk/research/public-satisfaction-with-the-nhs-and-social-care-in-2019-results-and-trends-from-the-british-social-attitudes-survey (Accessed: 17 November 2020).

Todd, A. *et al.* (2015) 'Access all areas? An area-level analysis of accessibility to general practice and community pharmacy services in England by urbanity and social deprivation', *BMJ Open*, 5(5), p. e007328. Available at: https://doi.org/10.1136/bmjopen-2014-007328.

Tøttenborg, S.S. *et al.* (2016) 'Socioeconomic inequalities in adherence to inhaled maintenance medications and clinical prognosis of COPD', *Respiratory Medicine*, 119. Available at: https://doi.org/10.1016/j.rmed.2016.09.007.

Tudor Hart, J. (1971) 'The Inverse Care Law', *Lancet*, (7696), pp. 405–412.

UK Government (2021) *Measures against Omicron variant come into effect: 30 November 2021*. Available at: https://www.gov.uk/government/news/measures-against-omicron-variant-come-into-effect-30-november-2021 (Accessed: 28 September 2023).

Venning, P. *et al.* (2000) 'Randomised controlled trial comparing cost effectiveness of general practitioners and nurse practitioners in primary care', *British Medical Journal*, 320(7241), pp. 1048–1053. Available at: https://doi.org/10.1136/bmj.320.7241.1048.

Verkooijen, K.T. *et al.* (2020) 'Using realist interviews to improve theory on the mechanisms and outcomes of sport for development programmes', *Social Inclusion*, 8(3), pp. 152–161. Available at: https://doi.org/10.17645/si.v8i3.2747.

Vlastos, I.M., Mpatistakis, A.G. and Gkouskou, K.K. (2005) 'Health needs in rural areas and the efficacy and cost-effectiveness of doctors and nurses', *Australian Journal of Rural Health*, 13(6), pp. 359–363. Available at: https://doi.org/10.1111/j.1440-1584.2005.00738.x.

Wald, H.S. (2015) 'Professional Identity (Trans)Formation in Medical Education', *Academic Medicine*, 90(6), pp. 701–706. Available at: https://doi.org/10.1097/acm.0000000000000731.

Walton, E. *et al.* (2017) 'Mining for Deep End GPs: A group forged with steel in Yorkshire and Humber', *British Journal of General Practice*, 67(654), pp. 36–37. Available at: https://doi.org/10.3399/bjgp17X688765.

Walton, E. *et al.* (2018) 'Influences of Socioeconomic Deprivation on GP's decisions to refer patients to cardiology: A qualitative study.', *British Journal of General Practice*, 68(677), pp. E826–E834. Available at: https://doi.org/10.3399/bjgp18X699785.

Weiss, C.H. (1995) 'Nothing as Practical as Good Theory: Exploring Theory-Based Evaluation for Comprehensive Community Initiatives for Children and Families', *New Approaches to Evaluating Community Initiatives: Concepts, Methods, and Contexts*, (7), pp. 65–92. Available at: https://doi.org/10.1177/1356389003094007.

Weiss, Carol H. (1997) 'How can theory-based evaluation make greater headway?', *Evaluation Review*, 21(4), pp. 501–524. Available at: https://doi.org/10.1177/0193841X9702100405.

Weiss, Carol H (1997) 'Theory-Based Evaluation : Past , Present , and Future', *New Directions for Evaluation*, 76.

Weiss, C.H. (2000) 'Which links in which theories shall we evaluate?', *New Directions for Evaluation*, 2000(87), pp. 35–45. Available at: https://doi.org/10.1002/ev.1180.

Wiltshire, G. and Ronkainen, N. (2021) 'A realist approach to thematic analysis: making sense of qualitative data through experiential, inferential and dispositional themes', *Journal of Critical Realism*, 20(2), pp. 159–180. Available at: https://doi.org/10.1080/14767430.2021.1894909.

Wirth, U. (2010) 'What is Abductive Inference ?', *Expert Systems*, pp. 6–8. Available at: https://doi.org/10.1145/1124728.1124739.

Wong, G. *et al.* (2013) 'RAMESES publication standards: realist syntheses', *BMC Medicine*, 11(1), p. 21. Available at: https://doi.org/10.1186/1741-7015-11-21.

Wong, G. *et al.* (2016) 'RAMESES II reporting standards for realist evaluations', *BMC Medicine*, 14(1), p. 96. Available at: https://doi.org/10.1186/s12916-016-0643-1.

Wong, G. *et al.* (2017) 'Quality and reporting standards, resources, training materials and information for realist evaluation: the RAMESES II project', *Health Services and Delivery Research*, 5(28), pp. 1–108. Available at: https://doi.org/10.3310/hsdr05280.

Woodin, J. *et al.* (2005) *Evaluation of US-trained Physician Assistants working in the NHS in England*. Available at: https://research.birmingham.ac.uk/en/publications/evaluation-of-us-trained-physician-assistants-working-in-the-nhs-.

Woollard, M. (2006) 'The Role of the Paramedic Practitioner in the UK', *Journal of Emergency Primary Health Care (JEPHC)*, 4(1).

World Health Organisation (2010) *WHO | Glossary of terms used*. World Health Organization. Available at: https://www.who.int/hia/about/glos/en/index1.html (Accessed: 16 November 2019).

Wright, J. *et al.* (2006) 'Overall Quality of Outcomes Framework scores lower in practice in deprived areas', *British Journal of General Practice*, 56, pp. 277–279.

Wynn, D. and Williams, C.K. (2012) 'PRINCIPLES FOR CONDUCTING CRITICAL REALIST CASE STUDY RESEARCH IN INFORMATION SYSTEMS', *MIS Quarterly*, 36(3), pp. 787–810. Available at: https://doi.org/10.1016/j.ijproman.2012.11.012.

Zink, T. *et al.* (2010) *Efforts to graduate more primary care physicians and physicians who will practice in rural areas: examining outcomes from the university of Minnesota-duluth and the rural physician associate program.*, *Academic medicine*. Available at: https://doi.org/10.1097/ACM.0b013e3181d2b537.

APPENDICES

APPENDIX ONE – NOTES FROM GP STAKEHOLDER MEETING 17TH APRIL 2018

Notes AUPMC seminar 17 April 18

Overall introduction (Chris)

Background to ACPs drivers, 2017 HEE framework and preparation (Ian)

Discussion of three differentiated roles, to fit different quadrants, (Chris, Ian, Ben) and general discussion:

Queries / questions

- Questions about terminology and differences between ACP and ANP and 'nurse prescriber' labels
- a complex area with different terms and initiatives that confuse
- not apparent that this audience are aware that they have key part in ACP role design

Urgent on the day feedback

- Yes face validity but ? label 'first contact' as such because likely already known
- ACP roles vis-à-vis triage and needs differentiation systems
- Degree of supervision required by a GP – preparation of ACP to include how to work well with supervision

Complex continuity roles feedback

- Yes to face validity but comments and reservations
- Generically useful to include in ACP preparation as part of appreciation of continuity and degree of complexity of primary care. But skills for complexity are more length of experience dependent – comes back to what background has the ACP trainee got.
- Meaning of ACP autonomy in complex case management – vis a vis a named GP responsibilities and team approaches required
- There is a problem of multiple roles and fragmentation in relation to general practice but not as well integrated – e.g. role of DN team community matrons is advanced and autonomous but increasingly distant from GP workforce.
- We need investment to clarify skill mixes required in the system and how joined up rather than bringing in new roles.

Other views on:

- Background experience in primary care and role prior to ACP training is important – has to be taken account of in the ACP preparation, rather than attempting standardised output.

- However, point made that GPs also have different backgrounds and areas of expertise because of that. But also note they are all at standardised medical training point rather than different occupational backgrounds
- Would it help to be clearer about how many patient contacts of various kinds comprise experience for ACP roles in primary care?
- Taught programmes should build in self-assessment / reflection for being self-directed and safe to be supervised in more isolated GP context. Help people to be clearer about what they don't know so they can safely go about learning.
- For an already experienced nurse the outline programme (slide) appears coherent and appropriate
-

Thought on the last workshop from my table - not my thoughts

Question : are patients 'triaged' or not - is it 'real first contact' of streamed work

- Does Urgent mean urgent - do we mean 'same day' is it dealt with quickly as part of demand management
- CAUTION - duplication of work !!
- Supervising practitioners likely to need some deep understanding and skills in supervision
- What does a Masters give you???? it experience in the job that matters - Apprenticeships
- What is the problem we are solving - if it is shortage of doctors - why don't we invest in this
- Balance between Autonomy and Supervision is important - often a regulatory relationship rather than a practical one
- First contact means : F2F, Examination, Limited Triage
- Masters needs to 'roll with' the individuals experience,
- Relational continuity needs to be incorporated into 'team' clinical decisions (supervising)

APPENDIX TWO - NOTES FROM MEETING WITH PATIENTS 11TH MAY 2018

GP leaving you 'liked and trusted' – what qualities most important when replacing …

- Competent and thorough but able to 'think outside the box' [clarified – one size doesn't fit all / not just follow textbook]
- Non-judgemental
- Willingness to nurture long term relationship and to home visits
- Humility to know limits
- Communication skills, listening
- Person centred
- Strength of character to challenge system/structures [advocacy?]
- Limit stereotyping / pigeon holing
- 'uBuntu' - a quality that includes the essential human virtues, compassion, and humanity

Second question – on balance continuity more important than same day [qualification on demographics of practice popn] Other words heard regarding access - 'disheartened' 'discouraged' 'don't care' 'treated like beggars on the conveyer belt'

reaction to employing staff other than GPs….

- Good idea – based on personal experience of accessing ACP same day
- Yes, if have generic skills and need to be able to prescribe
- Well…ok… but I'd like to understand why you though you needed a GP in the first place first … understand the dynamics of the team …
- Needs to be someone fairly 'fit for purpose' … so as not to distract service provision
- Yes – nurses can often have more time with a patient [comment from another – but they then also get swamped]

Requirements of practice placement

- Structured time with social services
- Co-learning with others in practice
- Reflection on how 'transferring skills' to new context
- Some connection with patients' carers [group discussion with members of population?]
- Areas outside normal experience e.g. sexual health, young people

Additional thoughts

- – principles of managing diverse people populations need to be embedded somewhere
- – co-production of practice placements would be v positive

PROCESS WITH HEALTH WATCH

- *Reasonable diversity in background / but probable not age*
- *Health watch support very helpful / great amenities*
- *Paperwork allowed focused discussion in the main – some tightening up on language in first sheet might be helpful e.g. qualities with permission to think outside information on the sheet.*

Context 1 – C¹ – General Practice teams

Context Terms Medline and CINAHL	MeSH Terms	MeSH information
General Practice Family Practice Primary Care Primary Health Care Community Healthcare	General Practice	Patient-based medical care provided across age and gender or specialty boundaries.
	Family Practice	A medical specialty concerned with the provision of continuing, comprehensive primary health care for the entire family.
	Patient-Centered Care	Design of patient care wherein institutional resources and personnel are organized around patients rather than around specialized departments.
	Community Health Services	Diagnostic, therapeutic and preventive health services provided for individuals in the community.
	Primary health Care	Care which provides integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community.
	CINAHL Subject Headings	

	Family Practice	The branch of medicine dealing with complete primary care of the entire family.
	Patient Centred Care	Patient care in which health resources and health personnel are organized around the needs and priorities of the patient.
	Continuity of Patient Care	Care provided on a continuing basis from the initial contact with a health professional and following the patient through all episodes of his/her health care needs.
	Community Health Services	Diagnostic, therapeutic, and preventive health services provided for individuals in the community.
	Primary Health Care	Essential health care that is provided by clinicians who address the majority of personal health care needs.
	Embase Subject Headings	
	Primary Medical care	the care a patient receives at first contact with the health care system, usually involving coordination of care and continuity over time.

	General Practice	general practice: the provision of comprehensive medical care regardless of age of the patient or presence of a condition that may temporarily require the services of a specialist 1974 [New preferred term] **Used For:** • family practice [*MeSH Descriptor*] • general medical practice • general medicine • general practice, dental [*MeSH Descriptor*]
	Primary Health Care	1974 [New preferred term] **Used For:** • first line care • health care, primary • primary care nursing [*MeSH Descriptor*] • primary healthcare • primary nursing care
	Patient Care	1974 [New preferred term] **Used For:** • care, continuity of • continuity of care

		• continuity of patient care [*MeSH Descriptor*]
		• episode of care [*MeSH Descriptor*]
		• patient care management [*MeSH Descriptor*]
		• patient care team [*MeSH Descriptor*]
		• patient centered care
		• patient helper
		• patient management
		• patient navigation [*MeSH Descriptor*]
		• patient-centered care [*MeSH Descriptor*]

Context 2 – **C²**- Urban deprived communities

Context Terms	MeSH Terms	MeSH information
Social Deprivation Economic Deprivation Under-served population* Health Inequit* Health Inequalit* Urban community	Poverty Areas	City, urban, rural, or suburban areas which are characterized by severe economic deprivation and by accompanying physical and social decay.
	Health Care disparities	Differences in access to or availability of medical facilities and services.
	Health Services Accessibility	The degree to which individuals are inhibited or facilitated in their ability to gain entry to and to receive care and services from the

		health care system. Factors influencing this ability include geographic, architectural, transportation, and financial considerations, among others.
	Medically Underserved area	A geographic location which has insufficient health resources (manpower and/or facilities) to meet the medical needs of the resident population.
	Vulnerable population	Groups of persons whose range of options is severely limited, who are frequently subjected to COERCION in their DECISION MAKING, or who may be compromised in their ability to give INFORMED CONSENT.
	Urban Health Services	Health services, public or private, in urban areas. The services include the promotion of health and the delivery of health care
	CINAHL Subject Headings	
	Poverty Area	Geographical areas where poverty is a prevalent issue.
	Medically underserved area	Communities or locale where there is little or no accessibility to health care.
	Healthcare Disparities	Differences in the availability of and accessibility to health care facilities and services.

	Urban Population	Population of cities and towns
	Embase Subject Headings	
	Poverty	the absence or scarcity of requisite substance or elements. 1974 [New preferred term] **Used For:** • poverty areas [*MeSH Descriptor*]
	Medically Underserved area	No description
	Health Care Disparity	2009 [New preferred term] **Used For:** • health care disparities • healthcare disparities [*MeSH Descriptor*] • healthcare disparity
	Urban Population	1975 [New preferred term] Used For: • city dweller • city people • city population • city resident

		• population, urban
		• town population
		• urban activity
		• urban community
		• urban resident
		• urban society
		• urbanites

Intervention – **I** – Advanced Clinical Practitioners

Role Terms – Medline and CINAHL	Medline MeSH Terms	MeSH information
Advanced Nurse Practitioner* Advanced Clinical Practitioner* Emergency Care Practitioner* First Contact Practitioner* Physician Associate* Physician Assistant* Paramedic*	Nurse Practitioner	Nurses who are specially trained to assume an expanded role in providing medical care under the supervision of a physician.
	Nurse Clinician	Registered nurses who hold Master's degrees in nursing with an emphasis in clinical nursing and who function independently in coordinating plans for patient care.
	Advanced practice nursing	Evidence-based nursing, midwifery and healthcare grounded in research and scholarship. Practitioners include nurse practitioners, clinical nurse specialists, nurse anaesthetists, and nurse midwives.
	Physician Assistant	Health professionals who practice medicine as members of a team with their supervising physicians.

		They deliver a broad range of medical and surgical services to diverse populations in rural and urban settings. Duties may include physical exams, diagnosis and treatment of disease, interpretation of tests, assist in surgery, and prescribe medications.
	Allied Health Personnel	Health care workers specially trained and licensed to assist and support the work of health professionals. Often used synonymously with paramedical personnel, the term generally refers to all health care workers who perform tasks which must otherwise be performed by a physician or other health professional.
	CINAHL Subject Headings	
	Nurse Practitioners	Registered nurses who by advanced training and clinical experience in a branch of nursing have acquired expert knowledge in the special branch of practice. The advanced training may be obtained through a master's degree or certification program. Consider also specific types of nurse practitioners.
	Physician assistants	Mid-level practitioners who practice medicine under the supervision of a physician. May

		use /education for staff development or further education; otherwise, prefer precoordinated heading EDUCATION, PHYSICIAN ASSISTANTS
	Embase terms	
	Nurse Practitioner	A registered nurse with advanced education and clinical training in a specialized area of health care; nurse practitioners can diagnose, prescribe, and perform procedures as regulated by the state employing them.
	Advanced practice nursing	2006 [New preferred term] Used For: advanced nursing practice
	Advanced Practice Provider	2018-09-01 [New preferred term] **Used For:** • advanced clinical practitioner • advanced practice clinician • advanced practice professional • allied health provider • clinical associate (professional) • limited-license practitioner • mid-level practitioner

		• mid-level provider • non-physician practitioner • non-physician provider • physician extender
	Physician Assistant	a person who has been trained in an accredited program and certified by an appropriate board to perform certain of a physician's duties, including history taking, physical examination, diagnostic tests, treatment, certain minor surgical procedures, etc., all under the responsible supervision of a licensed physician.
	Paramedical Personnel	1974 [New preferred term] **Used For:** • allied health personnel [*MeSH Descriptor*] • animal technicians [*MeSH Descriptor*] • ophthalmic assistants [*MeSH Descriptor*] • para medical personnel • paramedical assistant • paramedical manpower • paramedical professional • paramedical staff • psychiatric aides [*MeSH Descriptor*]

Outcome – **O** - Integration

Outcome	MeSH Terms	Description
Healthcare Workforce Role substitut* Role change Skill mix Preceptorship* Apprenticeship* Integration Patient Acceptance	Delivery of Health Care	The concept concerned with all aspects of providing and distributing health services to a patient population.
	Health Workforce	The availability of HEALTH PERSONNEL. It includes the demand and recruitment of both professional and allied health personnel, their present and future supply and distribution, and their assignment and utilization.
	Patient Care Team	Care of patients by a multidisciplinary team usually organized under the leadership of a physician; each member of the team has specific responsibilities and the whole team contributes to the care of the patient.
	Preceptorship	Practical experience in medical and health-related services that occurs as part of an educational program wherein the professionally trained student works outside the academic environment under the supervision of an established professional in the particular field.
	Internship, Non-Medical	Advanced programs of training to meet certain professional requirements in fields other than medicine or dentistry, e.g. pharmacology, nutrition, nursing, etc.

		Interprofessional relations	The reciprocal interaction of two or more professional individuals.
		"Attitudes of Health Personnel"	Attitudes of personnel toward their patients, other professionals, toward the medical care system, etc
		Patient acceptance of healthcare	Patients' willingness to receive health care
	CINAHL Subject Headings		
		Health Care Delivery, Integrated	A system that combines various entities within a health care organization to provide the most complete and continuous range of care to its clients in the most cost-effective manner.
		Health Manpower	The total supply of health personnel available.
		Multidisciplinary care team	All health care and other professionals assigned to the continuing assessment and treatment of an individual. Includes physicians, nurses, therapists, counsellors, social workers, special educators, nutritionists, etc.
		Skill Mix	Percentage of different health care personnel involved in patient care.

	Scope of practice	The range of actions, procedures, and processes that are permitted by law for licensed individuals.
	Preceptorship	A teaching/learning method in which each student is assigned to a particular preceptor to experience day-to-day practice with a role model and resource person immediately available within the clinical setting.
	Clinical Supervision	A formal process used to assist students and/or personnel in a clinical setting to develop clinical skills and clinical competence. Methods may include reflection, preceptorship, mentorship, or critical incident analysis.
	Patient Satisfaction	A patient's feelings of content or discontent with the health care process.
	Embase Subject Headings	
	Health Care Delivery	1975 [New preferred term] **Used For:** - delivery of health care [*MeSH Descriptor*] - delivery of healthcare - health care supply

		• health services accessibility [*MeSH Descriptor*]
		• healthcare delivery
		• healthcare supply
		• provider-sponsored organisations
		• provider-sponsored organizations [*MeSH Descriptor*]
		• service delivery
	Health Workforce	The availability of HEALTH PERSONNEL. It includes the demand and recruitment of both professional and allied health personnel, their present and future supply and distribution, and their assignment and utilization.
	Patient Care Team	Care of patients by a multidisciplinary team usually organized under the leadership of a physician; each member of the team has specific responsibilities and the whole team contributes to the care of the patient.
	Preceptorship	Practical experience in medical and health-related services that occurs as part of an educational program wherein the professionally trained student works outside the academic environment under the supervision of an established professional in the particular field.

	Interprofessional relations	The reciprocal interaction of two or more professional individuals.
	Patient Satisfaction	The degree to which the individual regards the health care service or product or the manner in which it is delivered by the provider as useful, effective, or beneficial.

Limitations – English, Abstract and Full text Available			
Inclusion and Exclusion criteria			
	Criteria	Inclusion	Exclusion
1	Setting	General / Family practice setting	Outpatients, Emergency department, Hospital, Dental services,
2	ACP roles	Physician Associates, Paramedics, Advanced Nurse Practitioners	Pharmacists, Physiotherapists alone (without other ACP roles)
3	Population	Urban, Deprived	Rural alone
4	Generalist team	Role within a Generalist team, or additional service separate to GP team with description of interaction with the Generalist team	Additional out-reach service in primary care setting separate to Generalist team with no description of interaction with Generalist team

APPENDIX FOUR – RESEARCH PROTOCOL – EMBEDDED DUE TO SIZE

Realist Evaluation
Protocol 1.2.docx

Consent Form

Integrating Advanced Clinical Practitioners into General Practice teams through clinical supervision: a realist evaluation

Researcher: Dr Benjamin Jackson   **IRAS project ID: 281424**

Participant ID number

Please initial box

I confirm that I have read and understand the information sheet dated 31/09/2020 for the above study and have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my legal rights or relationships with institutions involved being affected. In addition, should I not wish to answer any particular question or questions, I am free to decline.

I understand that this interview will be digitally audio recorded, transcribed and analysed; and that quotes from this interview may be used anonymously in reports and publications.

I understand that my responses will be kept strictly confidential and give permission for the research team to access my responses.

I understand that anonymised data about me and transcripts from the interviews may be used for future related studies by the research team.

I agree to take part in the above study.

_____   _____   _____

Name of Participant   Date   Signature

_____   _____   _____

Name of Person taking consent   Date   Signature

If you would like to receive a summary of the results and be invited to events where findings are presented please provide an e-mail address for contact:

_____

Please contact Dr Benjamin Jackson on 07710432362 or @ bejackson1@sheffield.ac.uk if you have any further questions or concerns.

When completed, 1 copy for participant; 1 copy for researcher site file

Academic Unit
of Primary
Medical Care

Participant Information Sheet

Integrating Advanced Clinical Practitioners into General Practice teams through clinical supervision: a realist evaluation

Researcher: Dr Benjamin Jackson   **IRAS project ID: 281424**

You are being invited to take part in a research project. Before you decide whether to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask if anything is unclear or if you would like more information.

What is this research about?

This research aims to understand how Advanced Clinical Practitioners in primary care are supported to integrate into primary care teams through clinical supervision. One way the NHS is addressing the relative shortage of GPs is to invest in more Advanced Clinical Practitioners to join general practice teams. These include Physician Associates, Paramedics and Advance Nurse Practitioners.

Many Advanced Clinical Practitioners have had little formal training in general practice settings. They start by seeing selected problems but over time Advanced Clinical Practitioners need to develop as generalists: dealing with multiple conditions and using time and shared decision-making to manage uncertainty when necessary. An important part of this development is through clinical supervision.

As supervision of Advanced Clinical Practitioners is relatively new, this research aims to find out how this works in practice. We have already spoken to patient groups and in this study, will interview Advanced Clinical Practitioners, GPs, and groups of practice staff to understand more about what works, for whom and why. The findings will be used to produce guidance on how to best help Advanced Clinical Practitioners to support the best quality generalist care.

Why have I been invited?

You are a GP responsible for supervising a relatively recently appointed (within 3 years) Physician Associate, Advanced Nurse Practitioner or Paramedic working in an Advanced Clinical Practitioner role within your general practice team.

You are a Physician Associate, Advanced Nurse Practitioner or Paramedic relatively recently appointed (within 3 years) to work in an Advanced Clinical Practitioner role in a general practice setting. Your practice has offered to be part of this research.

You are part of the staff working in a practice with a relatively recently appointed Physician Associate, Advance Nurse Practitioner or Paramedic working as an Advanced Clinical Practitioner role in the clinical team. Your practice has offered to be part of this research.

Do I have to take part?

No. It is up to you whether or not to take part. If you do decide to do so we will ask you to sign a consent form after reading this information sheet. You will still be free to withdraw at any time and without giving a reason.

What will happen to me if I take part?

We will invite you to take part in an on-line (virtual) interview lasting up to 45 minutes. This will be on the telephone, via video-link or in person depending on your availability and CoVid-19 restrictions. In the interview we will ask you to reflect on your experiences as a supervisor and provide some thoughts on how supervision arrangements may work to enable new Advanced Clinical Practitioners to support generalist medical care for your patients. We will record this interview to ensure there is an accurate record of what was said.

We will invite you to take part in on-line (virtual) interview lasting up to 30 minutes. This will be on the telephone, via video-link or in person depending on your availability and CoVid-19 restrictions. In the interview we will ask you to reflect on your experiences as a new Advanced Clinical Practitioner to provide some thoughts on how supervision arrangements may work to enable you to support generalist care for your patients. We will record this interview to ensure there is an accurate record of what was said.

We will invite you to take part in a focus group interview lasting up to an hour. This will be via a teleconference due to the CoViD-19 restrictions. In the focus group we will ask you to reflect on your experiences and give your thoughts on how the Advanced Clinical Practitioner has integrated into the team to support clinical care. We will record this interview to ensure there is an accurate record of what was said.

Why should I take part?

Whilst there are no immediate benefits for you in participating in the project, it is hoped that this work will support the development of the future healthcare workforce. The findings will help develop guidance to support the future workforce and to share best practice.

Will there be any harm from taking part in this study?

It is very unlikely that the interview will cause any distress. However, we recognise that reflecting on clinical work can sometimes cause anxiety and will be sensitive to this. Additionally, in line with Good Clinical Practice in research, it is important that individual patients are not discussed in a way that may reveal their identity.

How will we use information you provide?

We will need to use information about you for this research project. This information will include your name, age, ethnicity, place of work and professional background. People will use this information to do the research or to check your records to make sure that the research is being done properly. People who do not need to know who you are will not be able to see your name or contact details. Your data will have a code number instead. We will keep all information about you safe and secure.

We will destroy the digital recordings after transcription and all other information we collect during the research will only be accessible to the research team, be kept under lock and key or password protected and stored for no longer than 5 years. If we wanted to use the information for further research during this time, we would need to apply for further approval from a research ethics committee.

We will analyse the interviews to identify any patterns that help explain important or common processes that are occurring as these Advanced Clinical Practitioners are integrating into GP teams. The conclusions will be written up as part of a Doctoral thesis, used to develop guidance to support the workforce and submitted for publication in appropriate journal. We will write our reports in a way that no-one can work out that you took part in the study. Once we have finished the study, we will keep some of the data so we can check the results.

What are your choices about how your information is used?

You can stop being part of the study at any time, without giving a reason, but we will keep information about you that we already have.

We need to manage your records in specific ways for the research to be reliable. This means that we won't be able to let you see or change the data we hold about you.

If you agree to take part in this study, you will have the option to take part in future research using your data saved from this study.

Who has reviewed the study?

All research in the University of Sheffield is looked at by an independent group of people, called a Research Ethics Committee to protect your safety, rights, well-being and dignity. This study has been reviewed with favourable opinion by this committee. In addition, this study has been reviewed by the Health Research Authority who agreed it can proceed.

Where can you find out more about how your information is used?

This study is being carried out by Dr Benjamin Jackson, a PhD student at the Academic Unit of Primary Medical Care, University of Sheffield, supervised by Professor Chris Burton. The study sponsor is the University of Sheffield.

You can find out more about how we use your information by the following methods.

on-line at https://www.sheffield.ac.uk/govern/data-protection

e-mailing bejackson1@sheffield.ac.uk or ringing 07710432362.

from the Health Research Authority at www.hra.nhs.uk/information-about-patients/ or www.hra.nhs.uk/patientdataandresearch

What if something goes wrong?

If you wish to raise a complaint on how we have handled your personal data, contact our Data Protection Officer, Anne Cutler by e-mailing dataprotection@sheffield.ac.uk and she will investigate the matter. If you are not satisfied with our response or believe we are processing your personal data in a way that is unlawful you can complain to the Information Commissioner's Office (ICO).

Thank you for reading this information sheet.

Integrating Advanced Clinical Practitioners into General Practice teams through clinical supervision: a realist evaluation

Topic Guide - Semi-structured Interviews – Advanced Care Practitioners

<u>**Aims**</u>

1. to test a model of supervision processes against the experiences of supervisors of ACPs starting in GP.
2. to focus on particular elements of supervision related to key features of generalist healthcare.
   a. person-centred approach
   b. managing complex presentations
   c. dealing with uncertainty
   d. care-coordination / advocacy
   e. integration into clinical care
3. focus on urban underserved communities

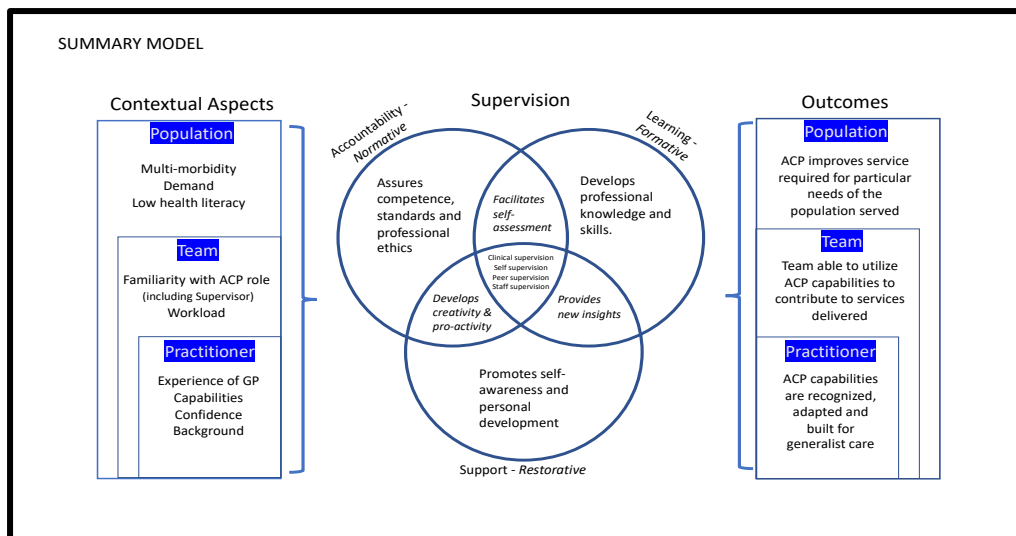<u>**Set-up and Consent**</u>

Introduce myself – *roles/responsibilities within University and General Practice,*

Explanation of aim and objectives of research

Check Consent

- Check participation information sheet are understood
- Record consent (if not provided previously)

Complete participant information checklist

Possible areas to cover:

Supervision

- Availability / trust
- Awareness of competence / skills/ previous training.
- Frequency of requests for advice – influences on this

Confidence

- at start of post, reflection, self-awareness of level of competence.
- Near misses / Significant events

Stress / Anxiety

- Uncertainty / Complexity of caseload / Workload

Generalist approach

- Change in approach [person-centredness, advocacy, continuity]
- Change in approach to investigation / referrals

Practitioner cultural background

- Any effect on communication / job satisfaction

Acceptance / integration

- Population acceptance / Team acceptance / Job satisfaction

Utilisation of competence

- ACP background (i.e. nursing), across scope of service, primary for access

Any other comments

Thank participant and end interview

APPENDIX EIGHT – CODING FRAMEWORK FOR QUALITATIVE DATA

Name	Description
aaNewProgramme	
1safety	Mechanisms through which practitioner feel safe - mainly for ACP but also supervisor
ACP unsure=anxiety	If ACP doubts has capabilities for generalist context [C], the sharing of data gathered during supervision [M] reduces ACP anxiety [O].
Patient response to ACP	
lack of confidence - dissatisfaction	If population served has low level of health care agency [C] uncertainty and lack of confidence in ACPs capabilities compared to a GP [M] leads to increased dissatisfaction with the service provided [O]
patients accept supn	If the ACP needs to request advice when consultating with patients [C], information provided for population regarding ACP scope of practice and supervision process [M] leads to increased patient satisfaction in care provided [O]
prefer the GP please	If population unsure about what ACP role can offer [c] established confidence in role of GP [m] leads to requests to see GP instead of ACP when arranging appointments [o]
Practice_supervisor	
practice preparation	

Name	Description
regulation=trust	If ACP role has statutory recognition in law [C], the professional register and confidence of ACPs professional oversight [m] leads to increased acceptance of ACP as member of clinical team [o].
prescribing	any data that related to the ability or not to prescribe independently and the impact of this.
can px = accptance	If ACP has rights as a non-medical prescriber [C], the autonomy of ACP with respect to prescriptions [M] leads to acceptance of ACP as useful member of clinical team [O].
Sup confidence prev experience	
supervisor skeptism	Contextual codes where skeptism of supervision team is described
can't px=doubts	If ACP lacks rights as a non-medical prescriber [C], requests of GPs to prescribe and uncertainty who holds clinical accountability [M] lead to a doubts that ACP as useful member of clinical team [O]
2trust	These codes relate to contextual factors supporting the development of trust in the relationship between a supervisor and their supervisor.
ACPs	
ACP likes safe space	NEW CODE - If supervisor protects ACP from stressful circumstances [C], ACP appreciation of safe learning space [M] leads to trust in supervisor [O]
different understanding of ACP role	Where there is shared responsibility for supervision across team [C], ACPs reflection on different experiences of supervision [M] leads to recognition of GPs variable investment in role [O]

Name	Description
Managed challenge=job satsfn	If ACP is unsure about how capabilities for generalist care [C], managed exposure to challenge in case load with support [M] leads to increased ACP confidence/job satisfaction [O]
pressure appts = acp stress	If GP team is under pressure to deliver greater access to patients, additional appointments available from ACP and a sense of urgency to get as many patients seen as possible creates increased stress and reduced job satisfaction for ACP
Patients	
inform	date relating to information on ACP role provided to the public and its impact
pt understndng ACProle	population awareness of the how the ACPs scope of practice fits into wider general practice team
info = pts accept role	If population served is unsure of clinical scope of ACP role [C] , information and dialogue with patients about supporting clinical capacity of whole team by integrating ACP [M] leads to public valuing ACP role as part of service [O]
info = trust and satisfn	If population served is low levels of health agency [C], trust in tailored information about ACP role from practice (as a community health asset) [M] leads to high utilization of ACP appointments [O].
Practice_Supervisors	
ACP is sure = trust	If the ACP displays self-confidence about scope of practice [C], reduced requests for supervision and supervisor's trust ACP will seek help when necessary [M] leads to greater appreciation of utility of ACP role [O]

Name	Description
skepticism --} resistance	If both ACP and supervisor are unsure about boundaries of practice within clinical team [C], increased ACP requests for support from a supervisor [M] leads to further resistance to transition of clinical teams to use ACP roles [O].
supervisor checks EPA (hx and ex)	NEW CODE -If supervision relationship is not yet established [C], GP checking specific details of data gathering [M] leads to confidence in ACPs history and examination skills [O]
Supervisor getting to know ACP	If ACP is unsure about how scope of practice relates to others within clinical team [C], induction period for supervisor to understand ACPs scope of practice [M] leads to supervisor trust that ACP will seek help when required [O]
superVISION	
poor sup prep=poor supn	If supervisor lacks understanding about ACPs scope of practice (i.e. through poor preparation) [C], assumptions about ACPs scope of practice [M] hinders development of supervisory relationship [O].
sharing information	If there is shared responsibility for supervision [C], a system for sharing a record of supervision and ACPs developing scope of practice [m] leads to more appropriate allocation of case-load to ACP within the team [o].
supn=early develpmt	If ACP lacks self-confidence at start of supervision process [C], intensive debrief and supervisor appreciation of capabilities [M] leads to rapid integration and clinical development [O]
trusting=poor care	if ACP is inappropriately confident about scope of practice in a generalist context [C], a lack of appropriate supervision due to trust that ACP will seek help [M] leads to inappropriate clinical management [O]
3time and space	Mechanism that are enabled by the appropriate organisation of supervision to allow time and space for particular conversations to take place. - related to the foundations and frames

Name	Description
multimorbidity	'the co-occurrence of multiple chronic or acute diseases and medical conditions This includes both physical and mental health conditions (Van Den Akker et al., 1996) ---- Contextual aspects - particular related to the higher prevalence of multimorbidity in underserved population s
complex = poor care	If population has a high prevalence of multimorbidity [C], lack of ACP capability to deal with resulting medical complexity [M] leads to inappropriate clinical management that requires altering after supervision [O]
complex training=accept	If ACP has to call patient back to alter management after supervision [C], patients trust that ACP is receiving has training in managing their complex problems [M] leads to acceptance of ACP role by population served [O].
pressure effect	Major contextual code with evidence of when the pressure of workload has impacted on clinical supervision
lack of sup=poor care	If the clinical team is under extreme pressure to deliver access [C], a lack of protected time for supervision due to workload pressure [M] leads to near misses / inappropriate investigation and management [O].
supervision stress	NEW CODE - If there is workload pressure [C], stress and distractions from supervision process [M] lead to reduced availability of supervision [M]
professional development	data that relates to the statutory regulation of a professional healthcare role, the requirements this brings on a practitioner and possible impact on the integration / relationship
supn complexity--}good mx	If ACP has experience in primary care [C] supervision on the challenges of managing diagnostic uncertainty [M] leads to a appropriate referrals and investigations for primary care [O]

Name	Description
supn complexity--}timeliness	If ACP has experience in primary care [C] supervision on the challenges of managing diagnostic uncertainty [M] leads to reduced anxiety and requests for advice during clinical practice. [O]
supn PC context--}advocacy	If ACP has experience in primary care [C], supervision around the importance of continuity and care-coordination [M] leads to increasing adoption of advocacy role for patients [O]
supn PC context--}person-centred	If ACP has experience in primary care [C], supervision around the importance of continuity and care-coordination [M] leads to increasing person-centredness in clinical practice [O]
unmet need - demand	This relates to the fact that primary care services are unable to meet the demand for access from their communities
4reflection	mechanisms underpinned by various levels of reflection - what triggers the reflection and what the outcomes are
ACP inc. aware=self-conf	If ACP has previous experience in primary care [C], ACPs increasing awareness of relevant scope of practice within the team [M] leads to improved confidence and job satisfaction [O]
aReflective practice	Codes suggesting ACP is engaging with reflection: Reflective practice: many definitions of reflective practice have been described (Mann et al., 2009). In this analysis, I consider reflection in generic terms as the cognitive and emotional process that practitioners engage with to consider their experiences to form new understanding and awareness.
Feedback-reflection- generalist	NEW CODE - If supervisor provides feedback on aspects of care related to generalist approach (investigations, follow up and safety netting, person-centredness - without more detailed discussion) [C] ACPs reflection on own practice [M] leads to clarity in adaptation of approach required for generalist care [O]
Observe-reflection-generalist	NEW CODE - If ACP observes GPs in practice (without discussion), [C] reflection on GPs approach to care [M] leads to recognition of aspects of generalist approach [O]

Name	Description
Practice-reflect-generalist	NEW CODE - If ACP has experiences practicing in general practice setting [C], reflection on own practice and patient narrative [M]leads to adaptation of approach with respect to medical complexity and continuity [O].
capab--}satisfaction	If ACP is competent in practical skills for primary care [c], their sense of contribution to team [m] leads to increased ACP confidence and job satisfaction [o]
cultural=satisfaction	If the ACP has aligning cultural capital with the population served [C], their perception of an enhanced cultural competence [M] leads to a greater job satisfaction in new role [O].
FEEDBACK-obs	
mutual aware=utility	If ACP has experience in primary care [C], mutual recognition of relevant capabilities [M] leads to accelerated utility within team [O].
NURSE=holism	If ACP has nursing background [c], time in job plan to utilize nursing approach for patients [m] with leads to more holistic approach to care patients with multimorbidity and frailty [o]
NURSING=frailty	If ACP has nursing background [c], time in job plan to utilize nursing approach for patients [m] leads to more responsive organisational approach for patients with multimorbidity/frailty [o]
peer-learning	These codes relate to the way that practitioners use discussion and support from peers to support their personal development.
peer suppt=satisfaction	If the clinical team includes a number of ACPs [C], peer-support and a perception of ACPs usefulness within team [M] leads to improved confidence and/or job satisfaction in new role [O].

Name	Description
Peer-reflection-journey	NEW CODE - If ACP has opportunity for peer-discussion with other ACPs at similar career stage [C], benchmarking of own experiences and career-trajectory [M] allows clarity about own requirements for personal & professional development [O]
pt trust and see again	If population has a large unmet need for health care [C], trust and satisfaction in ACPs capability to manage health care problems [M] leads to increased continuity of care for patients [O].
5self-direction	codes related to mechanisms where the supervisee starts to develop a sense of authorship over their role / also where supervisee is able to lead their work/supervision conversation
ACPs decides supervisor	NEW CODE - Where there is shared responsibility for supervision across team [C], ACPs reflection on different approaches to care [M] leads to ACP deciding on who to approach for supervision [O]
capab--}acceptance	If ACP is competent in practical skills for primary care [c], employer confidence of ACP's utility [m] leads to acceptance of ACP as member of clinical team [o]
pressure appts = poor care	If clinical team is under pressure to deliver greater access [C], prioritising additional capacity from new ACP over scope of ACP [M] leads to inappropriate clinical management [O]
6collaboration	codes where supervisor and supervisee are actively collaborating and sharing time and expertise towards patient care
access 1st wasted skills	If clinical team is under pressure to deliver greater access [C], focusing additional capacity from new ACP delivering access [M] leads to wider aspects of capabilities not being fully utilised for community [O]
cavalry is here thank god	If clinical team is under pressure to deliver greater access [C], possibility of additional capacity from new ACP reducing workload for others [M] leads to acceptance of ACP role as useful to clinical team [O]

Patient participation group one: 16 Jul 2021; four participants

Generally positive	Generally negative
GENERAL COMMENTS • Support for more services, offer choice, • May alleviate pressure on workload. • Will upskill ACPs • Experiences from other countries suggests that non-physicians can provide high quality care • Practitioners need to have opportunities to train as much as possible and need to be compensated for their extra responsibility • 'don't mind who I see, as long as it is the same person' • Some of the ACPs are much easier to pick up on the important issues with patients [Totally aware that everyone has to learn, but many of the training GPs have so far to go in terms of developing relationships with people] • ACP need describing properly to patients, 'a very experienced nurse who has the training to deal with your problem' and then offer the patient a choice to see anyone sooner or wait to see another practitioner. Practices need to promote the role in a positive way. • From ACP – most patients who then do see me – they are satisfied	• Public still generally consider that unless see GP have not had a good service • People like to 'see the same GP' – would also be happy to see same other practitioners, continuity is very important as generally generates trust • Nurses can be undermined by patients if 'not GP' • Not easy when people call each time and get allocated to a different person each time. • Trained in acute care and needed help to adapt to primary care • Interested in how GPs developed trusted ACPs in understanding of issues • Still issues about patients 'accepting' being treated by a nurse practitioner, and patients need to understanding how the roles are changing. Without them the NHS would fail. • Still need to break the 'stigma' about new roles SOME ISSUES WITH PATIENTS ACCEPTING NEW ROLES • Practitioners need to recognise the scope of practice and not worry about asking for help – if they can't do that, then problems will arise.

- Lead GP provided some guidance on how to practice
- Continuity helps in both quality and efficiency as you don't need to go over the same information.
- Aware that the notes also provide continuity and that notes should provide this information: practitioners should promote the other roles and how they contribute to individual care

STRONG FOCUS ON CONTINUITY FROM PATIENTS

Comments on concerns about competence of practitioners
- Suggest patients not bothered about who they see and recognise that the practitioners are safe – 'stigma' needs to be broken – recognition that 'even physicians' have to check care with others practitioners and that patients don't know about all these types of conversations
- Support conversations between practitioners and no particular concerns when a practitioner calls back and changes the management plan – accept that people are learning
- Consider that the discussions are very positive
- A patient will understand quickly whether the practitioner can talk to them in a way that gives them confidence
- Consider that some of the practitioners are 'better' than doctors

- ACPs are more likely to get complaints than GPs

- Problem for ACPs when are asked to keep to 10 minute apt slots, as just as patient have more than one problem with other practitioners
- Also need to be aware that practitioners might need some time
- Many patients recognise the ability to 'prescribe' as being something important [? Give the practitioner more validity]

• Practitioners should be encouraged and 'empowered' to use the observations they have made and try to make some sort of judgement. • Recognition that skills from previous roles [particularly for Pas] should be acknowledged and 'refined' for a new role rather than dropped • Recognition about how the power affects the stature of different practitioners.	

Group Two: 26 May 2022; Two participants

Generally positive	Generally negative
• P1 - Generally people do know who they are seeing – accept expertise – and though hasn't seen any of the professionals I am explaining would accept them [more chronic disease] • If receptionist signposted to a different role, in general would be happy to see them. • P1 - Recognition that for people who are not from UK, the level of health care more generally is great deal better than elsewhere, • P2 – if qualified then would trust, **concern that receptionist may not 'latch onto' the main issue you have**	• Questioning: if has a new illness, rather than a chronic illness thinks, hang on, what issue will I have that I don't need a GP for, not clear where these new roles 'fit in' • More concerned about personable skills • P2: from area where she is from, aware that there are some people will be keen to see GP and can see a challenge in integrating these new roles into the team. • P1 – may take up to 10 years for them to be accepting

- Recognition of other life experience being brought to the role from previous roles
- Recognition the layers of protection that are in place, regulation, and supervision

- No problems about supervision – happy for practitioners to ask for help, and has had situations where a practitioner has done this before **patient approach - don't worry about it**

- Picking up on problems with triage and ACPs very stressed – person practicing needs to be put in a position where they feel confident

- Continuity important but can develop with lots of different practitioners

- Related to bio-psycho-sociocultural model noted that 'perception' is most important – and recognition that 'trust', 'respect' and a recognition that the practitioner is really listening to understand – 'respectful curiosity'

- If needs to be go to a further practitioner (GP) then needs to be seen on that day or very quickly rather than put back on the waiting list.

- Public are relying on supervisors to 'empower' and develop these new practitioners as much as possible to develop themselves in the interest of patient care as much as possible….
  …and use the practitioners skills to the best for the team
- Can see how practitioners can go from one practitioner to another to get the advice they want and this links with empowering them

- Would suggest that the bio-psycho-social model should become bio-psycho-sociocultural model is and cultural awareness (competence) is very important
  and recognise that within the UK – class is part of this sociocultural experience and this will generate different social behaviours.

END