An exploration of the Student journey for the Professional identity of the physician associate as a catalyst of change and innovation to support a future Healthcare Workforce

Jane Perry

A thesis submitted to the University of Worcester in accordance with the requirement of the degree of

Doctor of Business Administration

Worcester Business School.

Supervisors: Dr Theresa Mitchell and Dr Robin Bell

Submitted 31st May 2021

Declaration:

I declare that the work in this thesis was carried out in accordance with the regulations of the University of Worcester and is original except where indicated by specific reference in the text. No part of this thesis has been submitted as part of any other academic award. This thesis has not been presented to any other education institution in the United Kingdom or overseas.

Any views expressed in the thesis are those of the author and in no way represent those of the University.

Signed: Dated: 31st May 2021.

Abstract

The introduction of the new role of the physician associate (PA) has the potential to redefine, disrupt, challenge and provide solutions to workforce challenges in healthcare organisations. Introducing the PA role may cause confusion and threat to other practitioners and disruption in organisations who do not understand the parameters of this role and how it might complement an existing workforce. This research sought to establish the challenges of implementing the role of the PA into UK healthcare practice by understanding the PA student journey with other practitioners who may work alongside them. The study seeks to understand how PAs could contribute to the evolvement of healthcare in the UK and to put forward recommendations as to how they can be supported to effectively contribute to the NHS through their role. This study also aimed to challenge what action should be taken to successfully implement the PA role and how such an innovation might evolve by listening to the views of future PAs and stakeholders. Through achieving this aim, the study will challenge new ways of working using effective business models to support innovation and change and challenges whether the PA might become a 'disruptive innovation' and create a new market for healthcare services in the future. Existing literature acknowledges a significant gap in research in this uncontested field of healthcare practice and calls for further research. This study aims to address the gap by offering new insight into understanding the views of PA students and stakeholders about what might enable, support or threaten this journey.

Using four qualitative methods to gather data, the research obtained the views of PA students and stakeholders and observed a number of students in a multi-professional environment. Narrative inquiry was used as the methodology to listen to the stories of both PA students and stakeholders using focus groups and semi-structured interviews to understand how they perceived the role and what enablers and barriers might exist. Ethnography was used to observe students from a range of professional groups to understand how they interact together to manage a patient journey. PA students also produced reflections of this experience.

Findings from the study suggest that PA students understand that they need to be entrepreneurial and ambassadors for the role demonstrating resilience and patience in their evolvement. Stakeholders were concerned that the role might fail without national guidance and support to create greater awareness and understanding, this was also a finding from PA students. Further research and national guidance at Macro, Meso and Micro levels was considered a key driver for supporting this new role. Regulation, prescribing and professional identity are considered fundamental to future implementation and a major barrier now to the implementation. Role boundaries and greater understanding of roles across different professional groups would be an enabler which could be enhanced with more dedicated inter-professional learning and teaching. Innovation and change and whether the new role of the PA might be a 'disruptive innovation' to create a new market in healthcare were the drivers for the research and are significantly inhibited without regulation.

This study concludes that the role of the PA has the potential to be a catalyst for change and innovation in healthcare. It is currently inhibited by a lack of regulation, prescribing and general awareness, restricting them from finding their niche. Removing these barriers might enable positive solutions to the workforce crisis and support gaps in healthcare services by offering a more cost effective, efficient and generic practitioner to support a future multi-professional workforce.

Acknowledgements

Becoming part of the journey for the new role of the Physician Associate has been one of the most interesting and exciting journeys in my career as both an academic and healthcare practitioner. In developing a new course, I had the pleasure of meeting some wonderful people who were equally passionate about this role but had been trailblazers for many years before my own involvement. Meeting Professor Ruth Ballweg and Professor David Kuhns, both global experts in the field was truly inspirational and they welcomed me to their universities and taught me what a good PA course should look like. I will always be indebted to them for this. Working with Health Education England, with Professor Elisabeth Hughes and Dr Matthew Aiello working with the PA schools Council and being part of the development in the UK was an absolute privilege. I have made some excellent friends and special memories and I always reflect fondly on this time with so many people who didn't ask for anything more but to be involved in supporting this role, not financial, not incentive, just passion. In the UK, the work of Dr Jim Parle, Dr Janina Iwaszko, Karen Roberts, Jeannie Watkins and many others should not go unnoticed, they have been pivotal to supporting the implementation of this role.

I would also like to thank Professor Stephen Chick from INSEAD who gave me the opportunity to be part of a course called 'Innovating Health for tomorrow.' This stretching programme reshaped my thinking and helped me to understand the notion of 'disruptive innovation' and developing new business models to drive innovation in healthcare. I cannot begin to describe how valuable that course has been to my future working practices and networks.

Finally, I cannot thank enough my incredibly supportive Director of Studies, Dr Theresa Mitchell and Supervisor, Dr Robin Bell, whose patience, support and guidance has been beyond exemplary and I could not have either started or finished this journey without them. Theresa, for her support and guidance through methods, methodology and her complete enthusiasm for this study and to Robin who methodically, reliably and diligently navigated me through the business side of a DBA with constructive, helpful and structured direction. I cannot thank you both enough for this support.

I would like to thank my family who have been patient and supportive, particularly my husband Dr Stephen Perry who has always supported me unconditionally and my two children Alex and Oli and their partners who have been supportive, patient, encouraging and who I am extremely proud of. And finally, to my dear friend Ian Cassely for his support with proof reading and formatting.

Abbreviations:

Physician Associate (PA) and who are students in this specific study.

Health Education England (HEE)

Department of Health and Social Care (DHSC)

Department of Health (DH)

Continuous Professional Development (CPD)

National Health Service (NHS)

Royal College of Physicians (RCP)

Nursing and Midwifery council (NMC)

Health care Professionals Council (HCPC)

General Medical Council (GMC)

British Medical Association (BMA)

Faculty of Physician Associates at the Royal College of Physicians (FPARCP)

Sustainable Transformation partnerships (STP)

Local Education Training Boards (LETB)

Local Workforce Action Boards (LWAB)

Contents

List of Figures

List of Tables

Chapter 1. **Introduction**

1.1 Context for physician associates (PAs) in healthcare organisations.

The future of healthcare delivery is undergoing dramatic change with organisations being tasked to produce high quality services that are patient centred and cost efficient (NHS, 2014; NHS, 2015) and this radical re- think requires large scale transformational change and involves the delivery of new services and the creation of new roles (DH, 2011 NHS, 2012; NHS, 2013 NHS, 2014, NHS AND PHE, 2017). In 2015, the NHS failed to meet the Nicholson challenge to produce efficiency savings of over £20 billion and news headlines continued to report workforce shortages and an increasing strain on services (Kings Fund, 2015). In 2011, the Department of Health document DH (2011) 'Innovation in Health and Wealth: Accelerating Adoption and Diffusion' tasked everyone to embrace innovation and quality improvement for better patient outcomes and to disseminate examples of any good practice across organisations. This was further enhanced and endorsed by DH (2012a) with a plea to 'Liberate the NHS: Developing the Healthcare Work Force.' This document set out new proposals around how the future healthcare workforce could be trained. The document gave employers more accountability and control in planning, delivery and shaping of the workforce (DH, 2012a). With a changing Healthcare landscape ahead, it became important for practitioners to work collaboratively with Health Education England (HEE), relevant professional bodies and interested Universities in order to understand and implement new roles and models of healthcare provision. This collaboration was to support the development of a new and different healthcare workforce and to explore options for developing and creating new roles in healthcare.

The NHS, however, continued to face significant delivery challenges and the adoption of innovative solutions that achieve quality improvement was slow to develop. It became ever more pressing for staff working in healthcare to deliver improved patient outcomes whilst also reducing costs (DH, 2011, DH, 2012a and DH, 2012b). Dramatic changes were expected of the NHS in April 2013 following the documentation of the DH (2012a) Liberating the NHS: developing the local healthcare workforce which gave employers a greater input into planning and supporting their own workforces and made them accountable locally (DH, 2012a). The reporting structure also changed with the formation of HEE who had direct contact with the Department of Health (DH). Local Education and Training Boards (LETB) were formed to be accountable for workforce strategy and the LETBs devolved this more locally to Local Education Councils (LETCs) who agreed priorities for workforce transformation in specific areas (DH, 2012a). During this period there were a great number of workforce streams in areas such as urgent and acute care, primary care, leadership, advanced clinical practice and many more supported by pilot projects to encourage new innovations and new roles. In 2016, the LETBs became Local Workforce Action Boards (LWABS) and sustainable transformation partnerships (STPs) were developed to support greater service delivery across the boundaries of health and social care (NHS and PHE, 2017). The new LWABS had a mandate to support STPs in planning against the HEE national key priorities to support workforce transformation and to support sustainable workforce plans. This upheaval required leadership and organisational development to support staff, patients and carers with system change across organisations and pathways (NHS and PHE, 2017).

The NHS commissioning board (2012a) developed a framework called '*Everyone counts: Planning for patients 2013/4'* which supported commissioners to use evidence-based

practice to deliver improved patient outcomes with innovation at the heart of new initiatives. Key policy papers tasked a review of the values and behaviours of a future workforce, incorporating 'Caring, Compassion, Competence, Communication Courage and Commitment', (often described as the 6 Cs), into education and training. This became a much-discussed precedent (NHS Commissioning Board, 2012b). Other reports such as the Willis report (2012) supported the development of the new role of the nursing associate, creating a professional set of expected values and requiring support for Continuing Professional Development (CPD). The *Innovation, Health and Wealth report (DH, 2011); NHS change model (NHS, 2012c)* alongside the *Health and Social Care Act (DH, 2012b)* supported new ways of working but these new ways were slow to be adopted.

The second half of the decade saw a new urgency and drive for change. The launch of the NHS five-year forward view in 2015 was considered a key policy driven initiative that presented a workforce strategy for the future and tasked organisations to completely rethink models of service delivery and the use of alternative roles in healthcare delivery. Further key policy papers were introduced such as the *Nuffield Report* (Imison, Castle-Clarke and Watson, 2016), *workforce planning in the NHS (*Kings Fund, 2015), the GP five-year Forward view (NHS, 2016) which all supported new and innovative approaches to shaping a future workforce. The release of the *Draft workforce strategy* (NHS AND PHE, 2017) was a significant document that pulled together examples and suggestions that were relevant to all health professionals and emerging new roles and was the first of its kind.

The re-emerging role of the Physician Associate (PA) was reintroduced in the West Midlands at a workforce conference exploring options to support the 'urgent and acute care crisis.' This meeting addressed the severe crisis in emergency and frontline services, reporting two million unplanned admissions a year, an aging population with an average age of 65 at presentation and a general increase in presentations with more complex health needs (NHS, 2014). This was against the backdrop of a diminishing workforce, particularly doctors and nurses (NHS, 2013). Attendance at this meeting included academics, clinicians and policy makers and the intention was to identify and support effective and sustainable solutions to the workforce crisis (HEE, 2015). Delegates talked through established and evolving roles and considered the roles of: Nurse, Paramedic, Pharmacist, Physician Associate, Advanced Clinical Practitioner; General Practitioner, Speciality training doctors (ST3; ST4; and ST5) and Consultant. Each established profession had a place in providing Urgent and Acute care, but the PA role was new and contentious. This role, originally developed and established in the USA, had been introduced five years earlier when four UK Universities pioneered the UK development, but it did not gain sufficient traction as a new role in healthcare and appeared to have gone out of vogue - although a small number of universities continued to offer the programme which kept a small supply of PAs in London, the Midlands and Scotland. This workforce conference set the scene for a re-emergence of the role of the PA and raised an important question around organisational readiness to accept new innovative roles in healthcare; Understanding a need to alter perceptions of this role, to promote trust, understanding and confidence in the value and purpose and place for such a new initiative and thus to preventing a second failure in embedding this potentially extremely effective role.

1.2 Healthcare Transformation.

HEE in collaboration with the NHS and Public Health England, released the draft workforce strategy called 'Facing the facts, Shaping the future.' (NHS AND PHE, 2017). This was the first ever workforce strategy overarching the NHS and highlighted the challenges and deficits in workforce planning, lack of innovation and the importance of embracing new ways of working to that date (NHS AND PHE, 2017). This strategy complemented the NHS five-year Forward view (NHS, 2014) by suggesting seven new models of healthcare to support a few key priorities for healthcare delivery moving forward (NHS, 2014; Kings Fund, 2015). Suggested models included 'multi -specialty community providers; primary and acute care systems; urgent and acute care networks; viable smaller hospitals; specialist care; modern maternity services and enhanced health in the care homes' (NHS, 2014). The strategy also discussed the importance of community practice to support wellness over illness encouraging general practitioners to work more closely together rather than as independent businesses and to form federation networks/super partnerships utilising a range of allied health and social care practitioners (NHS, 2014; Kings Fund, 2015). The pressures facing both acute and primary care provided a context of significant demand but with a limited supply of services. In order to change the situation, services needed to change and to meet patient needs through extended easier access and longer consultation times (NHS, 2014). This pressure was against a backdrop of an acute reduction in available doctors and nurses through early retirement leading to acute workforce shortages (NHS , 2014). Furthermore, with an increasing emergency care crisis reporting two million unplanned admissions a year; an ageing population with increasing complex long-term conditions; the demand for radical change had become imperative (NHS, 2013). The NHS five year

forward and the GP forward view (NHS, 2014, NHS, 2015) were looking for 'early adopters' of new and innovative approaches for the safe, effective and efficient delivery of health care services (DH, 2014, Kings fund, 2015). The adoption of new models of Healthcare would be implemented through large scale transformational change and system leadership matched with the identification of diverse and innovative ideas and approaches (Kings Fund, 2015a). These proposed models sought to challenge with new ways of improving productivity.

Without a deeper understanding of the challenges facing healthcare organisations and staff working in highly pressurised jobs, this transformational 'ask' would also be perceived as disruptive, 'change for change sake' or as not required.

The NHS and Independent health and social care organisations were charged to deliver large scale transformational change and additional cost efficiency savings which whilst ensuring high quality patient centred care (DH, 2011; NHS, 2013; NHS, 2014) could also be portrayed as cutting costs and replacing some practitioners with a less well known and possibly less efficient or effective workforce. Effective implementation would require considerable change management.

The current NHS workforce accounts for approximately 1.4 million staff and is both the most valuable asset and the most expensive (Kings Fund, 2015; NHS AND PHE, 2017) which is why the workforce strategy was designed with a view to amalgamate the discussion and raise the level of debate (NHS AND PHE, 2017).

1.3 Healthcare Education and reform: The role of the Physician Associate as an innovation.

The Physician Associate is a new role in healthcare in the United Kingdom and has been defined by the Department of Health, Competence and Curriculum Framework (DH, 2012, P6) as:

'a new healthcare professional who, while not a doctor, works to the medical model, with the attitudes, skills and knowledge base to deliver holistic care and treatment within the general medical and/or general practice team under defined levels of supervision'.

This role has been in existence in the USA for over 40 years and has a successful reputation for high quality, effective healthcare delivery across a wide range of services and disciplines that span primary and secondary care (Ross *et.al,* 2012). In the UK a PA is currently ***not*** regulated by a professional body and therefore unable to prescribe medication or order radiological examinations (Ross *et.al,* 2012; Royal College of Physicians (RCP), (2014). However, they are actively encouraged to join the Managed Voluntary Register (MVR) for PAs (DH, 2012). This was originally set up through the United Kingdom Association of Physician Associate Educators (UKIAPAE) to support future regulation of the role. This situation is about to change with confirmation that the General Medical Council (GMC) will in time become the new regulator for PAs; a significant development that will support trust and confidence in the role.

Many universities wanted to be at the vanguard of new innovations in healthcare and began working together to support the re-creation of this role. There was a clear purpose and passion to bring about effective change that would support the future

delivery of healthcare programmes. There was also a strong commitment towards developing graduates with appropriate expertise and knowledge to equip them to be ambassadors that would fulfil the requirements for a future workforce and advocate for their place in future healthcare agendas. These new developments would be part of a new era to encourage, motivate and inspire future generations to be part of highly effective multi-professional teams that embrace relevant change and manage a culture of resistance or inappropriate behaviours that stifle innovation (Hesselbein, Goldsmith and Sommerville, 2001). In developing a PA programme it was acknowledged that, although the UK health system may be different to an American healthcare system, there was much that could be learned from American colleagues and global pioneers in the field who could add context and insight into the complexity of the curriculum and delivery method and stress how important it was to develop a robust curriculum that embraced a medical model of delivery.

For the scope of this research, which is related to a UK healthcare system, the literature reviewed is predominantly related to the evolution of this role in the UK. This is because the study aims to look at what needs to happen within the UK to support this role and whilst there is an acknowledgement of some excellent literature from America, our healthcare systems are very different. However, the experience of American colleagues does provide a great deal of synergy to add context and understanding to the journey and the challenges faced in the evolvement of the role in another country. Therefore, it is appropriate to include a brief synopsis of how the role evolved and developed in America. It is also important to acknowledge that many American colleagues came to the UK to support the development of the courses and contributed to a number of UK publications to support the role.

1.4 Brief History of the Physician Assistant role in the USA.

The PA profession emerged in America approximately 50 years ago when military medics from the Vietnamese war were transitioning back into civilian life (Brock *et.al* 2015). This group of highly trained individuals were identified as being useful to support a workforce shortage in the USA, and to open patient access to primary care and support underserved populations (Brock *et.al*, 2011 and Ballweg, 2017). The origins of the PA role were bought about to support military medics and corpsmen who had been working on the frontline saving lives (Brock *et.al,* 2011). Transitioning these highly trained skills from a group of individuals who could manage stressful situations and transferring them to a new role in healthcare as a PA would offer them an opportunity to establish a new career in civilian healthcare (Brock *et.al,* 2011; Wick and Tozier, 2015). The development of PA educational programmes consequently gained momentum in the late sixties and early seventies, when the number of workers leaving the military was as high as 30,000 a year (Brock *et al,* 2011). These medics and corpsmen would have been performing clinical tasks in a military scenario that would not have been allowed in a civilian setting, but they would have received significant training to undertake these roles in military conditions (Wicks and Tozier, 2015). Pioneering universities developed PA programmes to support this initiative and Duke University was the first to establish a PA programme in 1965, closely followed by The University of Washington who developed the MEDEX programme in 1967 (Ballweg, 2017).

A Global Expert in the field of PA Education: Ballweg (2017, P7) discusses how the PA role emerged:

'The history and success of the University of Washington's Medex Northwest Physician Assistant programme is all about remarkable people; the altruistic and innovative physicians who sought to improve healthcare on the Pacific Northwest; the young returning military corpsmen willing to take a chance on an unproven career path, and the supportive patients who valued the care that these young men provided.'

Ballweg, (2017) goes onto say that there was a strong focus on diversity and cultural competence to support clinics for medically underserved patients and established leaders in the medical schools and medical association drove the legislation and infrastructure to allow this development to happen. These newly established programmes were seeking to provide an educational training programme that would utilise the skills and expertise of these front- line medics and support an over stretched workforce in underserved areas - opening up more access to healthcare for patients, particularly in primary care (Brock *et.al,* 2011). The idea of retraining frontline medics into primary care led to further evolvement of programmes, and in 1970, the air force also created a PA programme (Detro, undated). By 1984, a study had demonstrated that PAs were delivering healthcare to 79% of primary care patients at half the cost of a primary care physician (Detro, undated). The role continued to develop momentum and by 1993 there were over 26,000 PAs working across 50 states in America and in 2000 the army PA workforce received certification for this role by the National Commission on Certification of Physician Assistants (NCCPA) (Detro, undated).

By 2008, there were up to 1.5 million highly trained military personnel who had served in Iraq and Afghanistan who needed to re-enter civilian life (Brock *et al,* 2011). In October 2011, the Whitehouse announced that there would be a pathway for these

military workers to access a PA programme (Wick and Tozier, 2015). However, as PA Education developed, there was a move towards bachelor's degrees and then master's programmes with pre-requisites that created barriers to veterans from non - academic backgrounds (Michaud *et.al*, 2012; Brock *et.al,* 2011). This made the accessibility of programmes to veterans more difficult and it is often now reported that they may turn to other professions that do not utilise their clinical expertise which is a loss to healthcare unless special consideration is given to their admission based on their substantial healthcare experience (Brock *et.al,* 2011; Michaud *et.al*, 2012). The PA role continued to develop into a wider network of applicants and over a period of years, the profession in America has expanded dramatically and a number of Universities in America still have what is described as the 'Yellow Ribbon Programmes' which support military veterans onto a PA Programme (Brock *et.al,* 2011).

From the early days of the 1960s, the USA now has over 150 PA schools producing around 4500 graduates a year (Ross *et al,* 2012). In 2012 there were 81,000 qualified PAs working across every field in healthcare; both primary and secondary care (Ross *et.al*, 2012; RCP, 2014). The profession in the USA has matured to the point of licensing and certification of programmes and PAs in America predominantly have had prescribing rights for many years (Ross *et.al*, 2012). The overarching philosophy of a PA is to be a 'dependent practitioner' working to the medical model in partnership with a supervising clinician (Ross *et.al*, 2012). This section highlights how the PA is now an established role in the US and how it has the potential to bridge the challenges in the NHS described earlier.

1.5 Global development of the PA role

This role is not just unique to the USA and now the UK and Hooker (2015) suggests that internationalisation has a long history in American medicine and as the global market for PA education develops, opportunities for global movement offers many opportunities for international exchange of technology and expertise. He goes on to say that the 'PA Product' is developing internationally with programmes in Canada, the Netherlands, South Africa, Saudi Arabia, Ghana, India, New Zealand and Australia and the UK (Hooker, 2015). The role seems to develop in response to a global shortage of doctors and in a review by Cawley and Hooker, (2018) of 15 States, the successful development of the PA role relied on these facts:

1. Medical Need.
2. Shortage of Doctors.
3. Aging workforce (Doctors).
4. Support from government and medical organisations to facilitate development.
5. A legal and regulatory framework.
6. Evidence of acceptance by other healthcare staff and patients.

The cost of educating a PA over a Doctor is considerably less and is more time efficient. In addition, PAs fill posts that are difficult to recruit to and as dependent practitioners they are not considered in America to be threatening to other doctors but an additional role that offers cost effective access to healthcare for patients (Cawley and Hooker, 2015).

1.6 Attributes for the role in the United Kingdom:

The role in the UK gained momentum following key publications and factual data, predominantly published by Health Education England (HEE) in relation to the workforce crisis (HEE, 2015; BMA, 2017). There was also a number of strong advocates prepared to support the development of this role across the UK which they did very successfully and in 2013, the Department of Health Emergency medicine task force worked with HEE to expand the role of the PA and grow the opportunities for training (Royal College of Physicians (RCP), 2014). The United Kingdom and Ireland Physician Associate Education Board (UKAIPAE) was already formed to support a collaborative University approach and Universities came together to support the development of PA Education. In 2012 when the momentum for this role reignited, there were 150 qualified PAs in the UK. The Chair of UKAIPAE at the time and the President of UKAPA undertook national roles to support Universities in developing programmes.

The role of the PA remained poorly understood in the UK and it was important to establish high level awareness and cultural understanding of the role. Ross *et.al*, (2012) put forward *The Case for the Physician Assistant'* in a paper published in Clinical Medicine which was further endorsed by an editorial by the Royal College of Physicians (2014) who described the evolving role of the PA as '*A new kid on the Block.'*

There was strong rationale developing for the PA to step in and support the acute NHS crisis with continuity of care, workforce shortages and increased demand from patients who are ageing and presenting with complex needs; this was further compounded by the European Working Time Directive (EWTD) that reduced doctor's working hours and increased the number of locums required to provide medical care (Ross *et.al,* 2012).

The paper reports locum doctor spends in 2010 was £767 million- an increase of 100% from 2007/2008 just to maintain medical cover (Ross *et.al*, 2012). It was becoming imperative to consider a 'mid- level practitioner', such as a PA, as a potential solution as they could provide the NHS with a cost -effective practitioner who was consistently available and could provide continuity of care. This new role could offer stability to the workforce and due to the generic nature of the training it could be transferable and adaptable to all areas of medicine and most certainly to Emergency Medicine (RCP, 2014; Ross *et.al,* 2012). Continuity of care has been cited as one of the major issues following the European working time directive (EWTD) and following the Modernisation of Medical Careers (MMC) (Ross *et.al*, 2012). Consultants have expressed concerns regarding this, for example, in the USA, a PA tends to stay in the same role for approximately 9 years during which time they develop familiarity with the workings of the multidisciplinary teams and relationships of mutual respect and trust with the supervising consultant, therefore providing stability to a workforce that changes and rotates regularly (Ross *et.al,* 2012). PAs are described as having the potential to be the 'glue' between nursing, other professions and the medical workforce, and because they are trained as generalists who have to pass a National Exam and re-certify every 6 years, they can adapt within a number of roles and across a large range of disciplines (Ross *et.al*, 2012).

During the time period of this doctoral journey, the original name for this role in the UK was 'Physician Assistant' which is the same in America. In 2014, the role was renamed 'Physician Associate' (RCP, 2014). In 2014 The Council of RCP agreed that they would support the creation of a new faculty for PAs as part of the RCP. This was a huge endorsement to support the role and offered a new credibility of support for the future.

The Faculty of Physician Associates produce an annual PA census that informs the scope and depth of the role across healthcare and defines where all 700 qualified PAs currently work in the UK (RCP, 2018)

1.7 Regulation, prescribing and which professional body.

A considerable barrier to the role has been the lack of regulation and ability to be able to prescribe and this is highlighted throughout the literature and will be discussed further. It has been acknowledged that for the role to be realised and achieve its maximum potential, statutory regulation and prescribing rights are paramount to support the safety of the public and the service (Ross *et.al*, 2012; RCP 2014; BMA, 2017). The *Competence and Curriculum Framework for the Physician Assistant* was first published in 2006 and then updated in 2012. This was also alongside a *Matrix of Conditions* that clarified the skills required to meet the clinical expectation for the role. For a non- regulated profession, PAs work to a nationally agreed set of standards that has both a National Assessment and a 6 yearly re-certification requirement (Ross *et.al,* 2012; DH, 2012). The overarching aim was to support statutory regulation and maintain a set of high-quality standards; however, registration did not follow and the faculty, policy makers, universities, healthcare organisations and PAs themselves continue to lobby. The 'Physician Associate' is also not a 'protected title' which is why the Physician Associate Managed Voluntary Register (PAMVR) keep a record that employers can check to ascertain if their employee is both qualified from a university and approved following the national exam. All this information and more is on the Royal College of Physicians/Faculty of Physician Associates website. All new graduates from programmes are strongly encouraged to register in the knowledge that when statutory

regulation is granted, they will transition onto a new register and the title 'Physician Associate' will become protected and only those on the register will be legally allowed to practice. The faculty have expressed concerns that the PAMVR is better than not having one, but it remains insufficient to manage the risk.

The momentum for PA programmes spiralled rapidly upwards following Jeremy Hunt's announcement in 2015 that there would be 1000 PAs in General Practice to support workload pressures (BMA, 2017). More programmes were developed nationally with different strategies, funding streams and varying levels of support which meant that some programmes were fully funded, and others were not. In 2018 there were 30 PA programmes across the country and over 1000 students potentially graduating from these programmes.

With PA programmes several years into development, there is now a national HEE funding strategy that is equitable across the country.

The recent announcement from Matt Hancock, the Secretary of State for Health and Social Care, that they will start plans for statutory regulations has been a welcome announcement and this new development will support embedding the role across Primary and Secondary Care and is a new milestone to the journey. This is now a confirmed development for the General Medical Council (GMC) as the new regulator (GMC, 2020).

This study uses the third person to give a factual overview of the context, background and evidence discussed in this thesis. The first person is used in a reflexive account of my philosophical perspectives, experiences, thoughts and feelings at the end of each chapter. The first person is also used in the methodology chapter as this presents my

philosophical view-points as a practitioner and academic, using the perspective of a practitioner with insider knowledge, wishing to observe and hear the stories of students on a journey through a new course, learning to work with other practitioners as they find their identity in the workplace.

1.8 Developing a PA Programme - A reflexive overview

From the inception of this study, my career has had a strong focus on leading and managing healthcare courses, academic teams and external partnerships, aligned to workforce development and new roles in healthcare. Before I became an academic, I worked at an advanced level as a clinical practitioner which gave me good insight into the challenges and potential solutions to workforce shortages, looking at new ways of working and the skill sets practitioners are aligned to. I have undertaken a number of senior leadership roles and I am now the Dean at a University in East London for Health, Sport and Bioscience, looking after a large school of health, science and sport courses. I bring the experiences of a practitioner to this thesis and it is because of the level of experience I have in this field that I particularly chose this study as I bring inside knowledge and experience . The University in which my research was conducted, was the 4th new programme with the first intake in 2014. It was also the first full Master of Science (MSc) Physician Associate programme in the UK. I travelled to America to the University of Washington to research the programme and learn from experts in the field.

The existing and newly developing programmes were, at that time, all post graduate diplomas (PGDIP), but during a visit to America, I became aware that the programmes in the USA were, in fact, predominantly master's programmes. Despite differences in

USA and UK educational systems, it was decided that a full master's award could be delivered instead of a PGDip. However, this was not well received, and this was where I first discovered my own tendencies towards 'disruptive innovation' as I firmly stood my ground and defended the rationale. Equipped with knowledge about the curriculum where each 20 credit module required 400 not 200 hours of study to meet the requirements of the competency document (DH, 2012), I was determined to ensure the students achieved a qualification that reflected the extensive level of work to achieve the qualification, and to ensure that it would be comparable to other advanced roles, for example 'the Advanced Nurse Practitioner' or the new developments for 'Advanced Clinical Practice.' Interestingly there are now many programmes that are also full master's programmes as other universities have taken this approach.

All new programmes are written using '*The Competence and Curriculum Framework for the Physician Assistant' and the DH Matrix of Conditions'.* External Advisors are sought from established programmes to act as critical advisors and we worked with two universities with established courses and many years of experience. Both Universities had extensive experience and knowledge of the programme, one as an American trained PA of many years and the other as a General Practitioner and Professor of Primary Care. Both advisors held significant roles as: Chair of the National Exam and Chair of the UKIAPAE and were very supportive of growth and diversity in development. In addition, we had forged successful relationships with two global experts from America who came across to support the programme and added a wealth of knowledge and experience to the curriculum. A key concern had been that we were not a medical school and did not have the infrastructure to support medical education. This is not an uncommon feature of the American model where PA education is delivered as a

separate faculty in a number of states and we were reassured that this should not be a barrier to our development but that we would need appropriately trained staff to deliver this programme. We chose to write a curriculum similar to the American model which has a 'Didactic Year' of taught theory across general internal medicine, emergency medicine and critical care, maternal and paediatric medicine, clinical science and pharmacology, behavioural medicine, clinical skills, evidence-based practice and research methods with a dissertation that supported a quality Improvement initiative. In the first-year students would complete 140 credits with one day release into clinical practice to prepare for their 2nd year which has full clinical rotations across primary and secondary care for 1600 hours to include: medical, surgical, emergency/frontline medicine, general practice, mental health and paediatric experience. Clinical Simulation played a key part of the first year and students would return for one day every 3 weeks in their 2nd year to practice their skills in a safe environment. Assessments included: Objective Structured Clinical Examinations (OSCES), exams, reflective accounts and a portfolio of evidence for clinical hours and skill acquisition- students in practice worked under the supervision of a medical supervisor and close collaborations and partnerships were formed between the university and practice partners.

To enter the programme students were required to have a science related degree or a be a registered healthcare professional. On completion of the award, students were then prepared for taking the National Exam which would allow them to register on the PAMVR.

My role was to work with HEE, practice partners and lead the team to develop this programme which has been one of the most exciting and inspiring experiences of my life. The role was very new and was ground-breaking at the time and it was important to ensure that the potential for the role was described and understood accurately. HEE supported the programmes in the West Midlands by raising awareness and through offering a tariff for practice placements and a financial contribution to their fees. This helped support widening participation and increased access to the programmes.

In 2013 when I was developing the PA programme, I applied to undertake a leadership programme at INSEAD, and I attended a programme of study with them at the Fontainebleau campus called 'Innovating Health for Tomorrow.' (INSEAD, 2014). The programme was attended by people in influential positions across the globe who were developing innovative solutions to the health economy in their own countries. This experience taught me a great deal about new ways of thinking and behaving and allowed me permission to be creative and accept that not every venture would be successful…but that was not a reason for not taking part. I was introduced to the values and behaviours that nurture strong and effective leadership, the value of business models and 'design thinking' and engaging a culture of mutual respect and value to the workplace (INSEAD, 2014). This programme was undoubtedly one of the most stretching and inspirational activities that I had ever undertaken, and I felt empowered and compelled to use the knowledge to support the development of healthcare programmes. I was fascinated by the term 'disruptive innovation' and to the early work of Professor Clayton Christensen who developed this concept.

Disruptive innovation creates something 'new' and disrupts the status quo of an existing market or business which can destroy successfully managed companies (Christensen, 2016). However, if the company is creative, responsive and integrative, it could significantly improve the economy of a successful company, particularly if the company understands the systematic benefits of the innovation (Dyer, Gregersen and Christensen, 2011). During the programme, I became captured by the concept of 'disruptive innovation' and what types of characteristics belonged to the world's leading 'disruptive innovators.'(Dyer, Gregersen and Christensen, 2011) It also made me want to explore if introducing a new role into healthcare could also be described as a 'disruptive innovation.' This will be discussed more in chapter 2.

1.9 Research and research questions.

There are both practical and theoretical reasons for undertaking this research which will contribute to new knowledge in a field of healthcare where there is limited research and understanding about this role. In the design of the research questions, consideration to the culture of organisations, innovation in healthcare and transformational change for a sustainable workforce were key areas of consideration. Contemplation to the implementation of the role as a 'disruptive innovation' was also considered and whether the PA might be an agent of change management and 'disruptive innovation.' In order to understand the challenges of this new role from different perspectives and to contribute to new knowledge in this area, the following, aim, research questions and objectives were formulated:

1.9.1 Aim

To explore the challenges of implementing the role of the Physician Associate into UK healthcare practice, understand how Physician Associates are contributing to the evolvement of healthcare in the UK and to put forward recommendations as to how Physicians Associates can be supported by stakeholders to effectively contribute to the NHS through their role.

1.9.2 Research Questions

Question 1. What perceived challenges exist to effectively implementing the Physician Associate in the NHS?

The question will be answered by seeking views from a range of stakeholders as to how they perceive the challenges in effectively implementing the Physician Associate in the NHS.

Question 2. How might Physician Associates contribute to the evolvement of the NHS and other healthcare organisations?

This question will consider how different professional groups interact with one another and whether this interaction is a 'disruptive innovation'. Data from future PAs who are currently studying for the role will be sought to understand how they could contribute to the evolvement the role.

Question 3. How can Physician Associates be supported by stakeholders to effectively contribute to the NHS through their role?

Recommendations as to how the challenges identified might be tackled will be developed by taking views from a range of stakeholders. These recommendations are

designed to support the successful implementation and embedding of PAs into the UK healthcare system.

1.9.3 Research objectives:

Objective 1. Review relevant literature on the challenges and difficulties in implementing change and innovation in healthcare.

Objective 2. Interview healthcare professionals to establish their views on the role of the PA and the challenges of introducing a new role.

Objective 3. Interview PAs to establish what challenges they may have encountered and how they see the role embedded in a practice setting.

Objective 4. Observe how a range of students interact inter-professionally in a simulated clinical setting.

Objective 5. Contribute new proposals for NHS leaders, stakeholders and practitioners from the views of practitioners and PA students that will enable greater understanding for implementing the role.

1.10 Thesis Overview and Summary of the Chapters

The focus of this study explores and observes the journey of Physician Associate students as they progress through the taught part of their curriculum into a variety of placements where the role will be new to healthcare organisations.

This thesis will be presented in chapters.

Chapter 1. Introduction.

This first chapter will give an overview of the context and background to the NHS, the call for education and reform and the evolving role of the PA. It discusses the introduction of a new role in healthcare; the evolvement of the role in the context of developments in America and globally and how policy makers, practitioners and academics have worked together to support the development. The chapter sets the scene for research questions to support the aim and objectives for the research.

Chapter 2 Narrative review of the literature.

The purpose of this chapter is to explore the relevance and purpose of more research into this uncontested new role and to provide new insights into the value of the role in healthcare. In order to do so this chapter explores the links between a narrative review of the literature, observing the complexity of innovation and change in organisations as the theoretical framework, and the limited research to date. The literature explores innovation, 'disruptive innovation, innovation in healthcare, barriers and challenges that come with introducing a new role into healthcare, the culture of the NHS and how acceptance and change management can present challenges to organisations. The chapter also includes one paper from America which is worthy of discussion because it specifically looks at the role of the PA as a 'disruptive innovation.' This is helpful against the paucity of current UK literature on PAs in a UK health service. The contribution to new knowledge is to specifically look at the application of this role in the UK. This chapter concludes with an overview of the theoretical framework 'innovation and change.'

Chapter 3 Methodology and Research Design.

This chapter provides a reflective account of my world view of this research using my experience as a senior academic and practitioner from an ontological and epistemological perspective. It analyses the choice of methodological approach and provides a rationale for the use of narrative inquiry and ethnography and why this methodology resonates with my philosophical viewpoint. This chapter will also explore the rationale for using a qualitative approach to this research. This chapter will be written in the first person and will explore and reflect on addressing bias and ensuring trustworthiness in the research.

Chapter 4: Data collection and data analysis.

This chapter will provide an overview of the four methods used for data collection:

- Semi-structured interviews with academic staff who are also qualified as a healthcare professional.
- Reflective reports (on the simulated scenarios) from the physician associate students.
- Focus groups with physician associate students.
- Observation of 4 multi-professional clinical scenarios with selected students from professional programmes (physician associate, physiotherapy, nursing and paramedic sciences).

This section will also include the application for ethical approval, the selection of participants, information on obtaining informed consent, and how the data will be coded, categorised and themed. It will also describe how the data will be thematically

analysed using the six phases of the framework from Braun and Clarke, (2006) and used to answer the research questions.

Chapter 5 Results and discussion from the Data Analysis.

This chapter will present and discuss the findings from four methods of data collection and will analyse the specific areas of relevance to the research questions and to the contribution of new knowledge. Specific parts of the data will be selected to answer the research questions, using raw data quotes and an accompanying narrative of the analysis.

The findings will seek to establish new knowledge from the study and triangulate this with information from the literature. Detailed analysis of the findings from answering the research questions, discussed against the literature, will aim to develop new knowledge and support future research for the role. A detailed discussion relating to the findings will be presented with the research questions.

Chapter 6. Conclusions and recommendations.

This chapter will draw together conclusions and recommendations from the findings from the literature and the 4 methods used to answer the research question.

The purpose is to establish new knowledge from the findings of the study and triangulate the evidence to ensure a robust process has taken place.

Conclusions and recommendations will be drawn from the findings and presented for dissemination and future research.

Chapter 2. Narrative review of the literature.

This literature narrative will take a staged approach to each part of the narrative to support the aim of the research in understanding the challenges to the implementation and evolvement of a new role in healthcare. The review will explore innovation, disruptive innovation, innovation in healthcare, change management, barriers and facilitators, organisational culture to acceptance, adoption and diffusion by breaking down key sections that explore the research questions. This is important to support future stakeholders in understanding how PAs can be supported in effectively contributing to the NHS and create a process for understanding where the connections between business models and health interventions/innovations interconnect. This requires looking at the causal effects of disruption and overarchingly the complexities of change management and role demarcation. Relevant literature from the last ten years will be evaluated under the themes of innovation, disruptive innovation, the application to health, barriers and challenges, benefits and more recent research and analysis on the role of the physician associate in the UK. in addition, the seminal work of Professor Clayton Christensen who developed the concept of 'disruptive innovation' as introducing something less expensive and more accessible into a market which may then disrupt an existing market (Christensen and Raynor, 2003) will also be considered to understand whether this new role could produce a disruptive, solution focused new business model in the healthcare industry (Christensen, Grossman and Hwang, 2009) This narrative is seeking to understand what is required to drive change and what needs to happen for a new role to be embedded looking at the challenges to change, innovation for change and innovation and diffusion (DH, 2011). Many creative and

innovative ideas are known to fail (Dyer, Gregersen and Christensen, 2011) and therefore the challenge in ensuring that the role of the physician associate is successfully implemented requires a level of trust within a given healthcare setting and a commitment to make it work. This doctoral research is conducted in a UK setting and will review what is required to implement this new role in a UK healthcare setting.

2.1 Innovation.

Innovation is one of the most topically used terms in healthcare and has become a forum where leaders in healthcare are constantly tasked with finding new and innovative ways to work in a leaner and more efficient way, both to improve patient outcomes but also to model, adopt and diffuse, new ways of working (DH, 2011, Kings Fund, 2015, NHS AND PHE, 2017). This directly relates to my research which looks at a new role in healthcare as an innovative solution to future workforce challenges but is also a role that may be perceived as threatening and negatively disruptive.

Innovation as a term is associated with creative ideas, new thinking and growth and is often closely linked to the business world and entrepreneurial behaviour (Christensen 2016, Dyer, Gregersen and Christensen, 2011, Stenburg, 2017) but innovation goes beyond business and is a part of people's daily lives reaching beyond economic impact to a wider scope implying that innovation needs to be understood more broadly (Stenberg, 2017, Ries, 2011).

Innovation is imperative to survive in the dynamic and turbulent world of globalisation, technological advances and new markets and has a far reaching aspiration for a smarter new future (Lee, and Trimi, 2018) but many organisations still find the notion of innovation confusing which can make the process misunderstood (Kahn, 2018).

Innovation is a commonly used ‘buzz’ word and a highly topical discussion point which has evolved substantially over a considerable number of years…but what does innovation mean and why is it a crucial part of business development and failure such a common outcome? (Dodgson and Gann, 2018). For organisations to embrace innovation, it must be an outcome that seeks an output, a process that organises a successful output and a mindset where the innovation is encouraged to flourish in a supportive and creative environment (Kahn, 2018).

Innovation as described in the authors book ‘the innovators solution’ is about creating growth which is sustainable (Christensen and Raynor, 2003) and in order to achieve this it may be important to do this incrementally (Christensen and Raynor, 2003, Ries, 2011). It is also important to note that even well tested methods and high performing managers can suffer failure when new disruptive technology is introduced into the marketplace (Christensen, 2016). Managing innovation can also be a resource issue which may stifle development and the adoption of new technology which might account for the fact that some bigger companies can be more successful if they have a more stable financial picture (Christensen, 2016, Sarooghi, Libaers and Burkemper, 2015).

Creativity has a strong focus in innovation, which is why it is described as having a wider focus than just business but in business, the relationship between creativity and the development of novel ideas works well where there is a positive positioning for ideas and innovation which is why the infrastructure in larger firms seems to be able to facilitate this more easily (Sarooghi, Libaers and Burkemper, 2015). Despite this, larger companies with more resources are not necessarily more successful as they may be

more inclined to a conservative approach using smaller incremental changes than perhaps a new company or start-up who may come forward with a breakthrough innovation which disrupts a current business and market (Christensen and Raynor 2003; Dyer, Gregersen and Christensen, 2011). However, it does appear that it is also important to have the space for ideas creation at different levels of the organisation which the company IDEO are renowned for doing (Amabile, Fisher and Pilemar, 2014, Ries, 2011). IDEO have demonstrated impressive achievements over a significant number of years through a collaborative approach of 'many minds make bright work' and ensuring that status is no barrier, adopting a philosophy that everyone might need help to take an initiative forward (Amabile, Fisher and Pilemar, 2014)

Innovation has been described as looking at the same thing in a new light, being courageous and accepting that failure may happen (Marquet, 2019) or as a novel or new idea that needs to be implemented to be described as innovative (Mayle, 2009). Successful innovators are often those who can try, accept failure, learn and then try again, learning their customer and market needs (Christensen, 2016, Christensen and Raynor, 2003). Innovation appears to relate to establishing a worth of new ideas and their relationship to future economic and social growth and during more recent years, the relationship to disruptive technologies and the implications for new technologies, for example, artificial intelligence and the impact this may have on future working patterns (Dodgson and Gann, 2018). Innovation also has the capability to unleash transformational change through new ways of thinking and working and an entrepreneurial attitude and determination to succeed but it can also be entrenched in the notion of too much talk and jargon, often inspired by trips to Silicon Valley as opposed to real change with many leaders inspired by the notion of innovation (Rowan,

2019). Empirical research also provides evidence of large-scale failure with a tendency for companies to resist or reject innovative approaches (Rowan, 2019). This could then be a problem for a successful company if they do not respond to new emerging technologies to advance their companies.

There is a philosophical view that Innovation should include everyone and be part of a working portfolio where creative and new ideas can become small projects that may succeed but are also calculated risks made by individuals or companies (Dyer, Gregersen and Christensen, 2011). However, of significant importance is the reality and acceptance of failure as a natural phenomenon removing the all too familiar fear of getting something wrong (Dyer, Gregersen and Christensen, 2011). In todays' society the reality is that failure has many negative connotations, and this will stifle innovation but through adopting this philosophy, Innovation becomes part of the day job and a risk-taking attitude can be a good approach (Brown, 2008). This creative and risk-taking approach used by the highly successful company 'IDEO' whose philosophy is 'fail soon to succeed late,' and whose values in ideas creation and working in effective teams are inspirational (Brown, 2008, Dyer, Gregersen and Christensen, 2011).

In defining a 'smart future' for innovation, it is important to have shared visions and an environment that supports aspirational ideas, well-being, the speed of technological advances and interventional methods to disrupt barriers (Lee and Trimi, 2018). It is also important to note that there is a difference between 'sustaining innovation' as described in the 'Innovators dilemma' (Christensen, 2016) where companies make ongoing incremental changes to their current products to improve customer service and the disruption that occurs from developing a new and ground breaking product or

service as a ‘disruptive innovation’, sustaining new growth in a new market (Christensen, 2016 and Reis, 2011).

Creativity is described as the key ‘leadership competency’ and powerful innovative ideas steep through history as the one main source to generate industrial growth and wealth (Dyer, Gregersen and Christensen, 2011). Innovation is a key strategic priority across many organisations and entrepreneurs such as Steve Jobs became world famous for his work with Apple and he consequently became ranked as a number one innovator with his logo of ‘think differently’ (Dyer, Gregersen and Christensen, 2011).

The key points of this section are that it is important for organisations to have a free-flowing healthy commitment to embracing creativity for successful innovation at all levels of the organisation, to listen, embrace and support the organisation to adopt inclusive models that take their teams with them so that they feel a part of sustainable and transformational change.

2.2 Innovation in healthcare

All current healthcare reports and literature are calling for large scale transformational change that is patient led, meets the requirements of patients who are living longer and has quality improvement, efficiency, and cost-effective methods as a model (Kings Fund, 2014, NHS AND PHE, 2017). The challenge will be the application of organisational change that will need to take place for this to happen (Kings Fund, 2014, NHS AND PHE, 2017).

In the UK, what is known is that there are pockets of innovative practices and the Health Foundation, (2014) cite several quality improvement collaboratives where ideas are shared, and teams are motivated to be creative and think differently. Although the

impact of these collaborations had mixed reviews the reality of the interconnectivity of teams working together to improve services was very evident (Health Foundation, 2014).

Innovation is constant in healthcare practice and encouraged as a continual means of improving patient outcomes (Moussa, Garcia-Cardenas and Benrimoj, 2019) but one of the great difficulties is that new scientific advances can be slow to disseminate whereas a single clinical innovation from one clinical trial can be adopted at pace (Balas and Chapman, 2018) but what is fundamentally clear is that it is essential to adopt and disseminate innovations that drive high quality health and rule out old practices that need to change (DH, 2011; Balas and Chapman, 2018)

Innovation is a strategic priority for virtually every Chief Executive Officer in healthcare and the NHS Constitution place healthcare improvement literature with organisational change literature as a model for leading large-scale transformational change (NHS, 2013).

It is thoroughly documented that for healthcare to reform, the culture of organisations needs to review values and behaviours (Kings Fund, 2015; NHS, 2014)

Innovation across a health system appears to have a lag in time in relation to early ideas and spread of the intervention or innovation. It is hard to recognise what factors contribute to transforming large scale change in healthcare systems (Partson *et.al*, 2015). A number of case studies from across the globe imply that the approach must be purposeful, phased and create a climate for change that involves the whole organisation in order to achieve a sustainable implementation (Partson *et.al*, 2015) and the healthcare world often question why some healthcare lean projects are successful

and others are not, examining the factors that contribute to successful change management (Bedgood, 2018).

Many innovations in healthcare are often cited, for example, a study that looked at 3 specific design innovations in a mental healthcare setting where two out of three of the design innovations evaluated really well and were adopted and the third had mixed evaluations and was further reviewed but the outcome did support new and innovative strategies for future mental health services (Kalantari and Snell, 2017). Innovation in healthcare seems to happen at many different levels and staff should be empowered to make their ideas become a reality by empowering them to be part of the solution (Chandler, 2014). Another great example was where 'Lean thinking' was used to support reduced waiting times for gastroscopy services creating a more patient focused efficient service which received high levels of patient satisfaction (Hydes, Hansi and Trebble, 2012). Lean thinking transformation has been discussed in relation to healthcare innovation on many levels of healthcare practice but does require investment of time at many levels of the organisation which also includes the patients view of their priorities (Trebble and Hydes, 2011).

What does seem to be evident in the journey of understanding innovation in healthcare is that even when evidence-based innovations are put forward, the ability to adopt, disseminate and diffuse (DH, 2011) can be unpredictable and given the challenges that the NHS faces, it has become imperative that improvement programmes gain traction for sustainability (Nursing Times, 2011). This raises key issues for the influences of future policy and the importance of wider influence in connecting innovations that understand the social and political challenges alongside the needs of staff at all levels

who are key to future sustainability in the different organisational contexts that help shape success, removing the notion that a 'one size fits all' and will not be transferable across the different contexts of healthcare delivery (Nursing times, 2011).

In conclusion, the future of healthcare delivery relies on new approaches and ways of working where the patient is put at the heart of new practices but as discussed earlier, there can be a number of challenges and barriers to innovation in health that need system wide leadership to support adoption and diffusion of good practices and this may require some understanding of the culture of an organisation like the NHS and how they support and manage health care innovation and change.

2.3 Disruptive innovation.

Very specifically to this research, 'disruptive innovation' plays a key part in introducing an unknown role into the workforce and therefore could be very disruptive if the role is considered a 'new market' where other practitioners may feel that their place in the organisation is disrupted, threatened and misunderstood. This contrasts with the strategic overview that new roles should be complimentary, not threatening which is why it is so important to understand the concept of 'disruptive innovation,' as part of this thesis.

Disruption does seem to be an effective strategy to beat the competition if business ideas can be shaped into a disruptive strategy, but it does rather rely on knowing which strategies are likely to succeed and which may fail (Christensen and Raynor, 2003).

The term 'disruptive innovation' was first defined by Harvard Business Professor Clayton Christensen in 1997 and was described as:

'A disruptive innovation is an innovation that creates a new market and value network and eventually disrupts an existing market and value network, displacing established market leading firms, products and alliances.'

Clayton Christensen has been described as a prolific author of seminal work on innovation and is the founder of the concept of 'Disruptive innovation' (Christensen *et.al*, 2017, Christensen, 2016, Dyer, Gregersen and Christensen, 2011, Mayle, 2009, Christensen and Raynor, 2016, Christensen and Eyring, 2011, Christensen, Horn and Johnson, 2017).

Disruptive innovation is a concept that challenges the status quo and is a term that is often used to describe some of the most famous and world leading businessmen (Christensen, 1997; Dyer, Gregersen and Christensen, 2011). A 'disruptive innovation' creates something 'new' and disrupts the status quo of an existing market or business (Dyer, Gregersen and Christensen, 2011). In business a 'disruptive innovation' can completely destroy successfully managed companies (Christensen, 2016) or alternatively if the company is creative, responsive and integrative it could significantly improve the economy of a successful company; particularly if the company understands the systematic benefits of the innovation (Dyer, Gregersen and Christensen, 2011).

Christensen (2016) suggests that 'disruptive innovation' is a new service designed for a new set of customers. The most successful companies and businesses have all used 'disruptive technologies' and creative thinking to become some of the world's greatest market leaders (Dyer, Gregersen and Christensen, 2011) and the question is whether this is also transferable to the health service if business models are adopted and organisations think differently about how they can change their current ways of

working to deliver more effective care (Christensen, *et.al*, 2009). Clayton Christensen the original founder of this term was renowned for his two pioneering books called 'the innovators dilemma' and 'the innovators solution' which gave insight into the reasons why some companies are so successful (Christensen, 2003, Christensen, 2016 and Dyer, Gregersen and Christensen, 2011).

Dyer, Gregersen and Christensen, (2011) have observed the behaviours and skills adopted from the world's leading innovators in their book the 'innovators DNA.' This book unpicks the characteristics of disruptive technologies, business models and companies and has been derived from an 8-year collaborative study. In this study, they sought to uncover the origins of innovation and the disruptive business ideas that made truly successful businessmen/women (Dyer, Gregersen and Christensen, 2011). Successful businesses are derived from people, processes and guiding philosophies and leaders of people require a quota of people who are adept at decision making and innovative processes (Brown, 2008). The people who are chosen to lead on innovative projects are considered one of the main factors to successful innovation, suggesting the initial selection of the right person is imperative (Bedgood, 2018). Dyer, Gregersen and Christensen,(2011) in the book the 'innovators DNA' unpick the skills required to develop entrepreneurs and these skills relate predominantly to behaviours and innovative ideas. They are thought to be generated through the cognitive use of association and the behavioural skills of questioning, observing, networking and experimenting (Dyer, Gregersen and Christensen, 2011).

A model for 'disruptive innovation' is described in the 'innovators dilemma' and has three elements that measure performance over time (Christensen and Raynor, 2003,

Christensen, 2016). The first of these acknowledges that technologies that are generally good enough will usually show a level of improvement that companies can use or absorb but the trajectory is small; the second is a different and increased level of improvement with a higher trajectory when a new company introduces either a new or improved product that can sell for a higher profit to a market that is poised for new technology; the third element makes a distinction between sustaining and 'disruptive innovation' (Christensen and Raynor, 2003). Sustaining innovations can be customers looking for incremental improvements or it could be a completely new and ground-breaking product that takes the competition out and can command higher profit margins (Christensen and Raynor, 2003, Christensen 2016). 'Disruptive innovations' are different again as they are not about bringing better high end products but often are about introducing simpler, cost effective products that appeal to a new customer market or to those who do not wish to pay high end prices (Christensen and Raynor, 2003, Christensen 2016). It is this contrast of bigger companies working with a sustainable rather than a disruptive focus that can paralyse industry leaders who do not look to lower end disruptive markets which is what has been described as the 'innovators dilemma' but understanding this is also part of the 'innovators solution.' (Christensen and Raynor 2003).

Paper 1: Kushins, Heard and Weber, (2017). Disruptive innovation in rural American healthcare: the physician assistant practice

In the context of 'disruptive innovation', chapter one provided an overview of the PA role in the American context and on reviewing the literature, it is worth mentioning that a recent study in America did explore the role of the PA as a 'disruptive innovation' by

using a business model for a physician assistant (the American name for a physician associate) setting up a new business in rural community settings, to treat and care for an under-served population (Kushins, Heard and Weber, 2017). The study looked at the shortage of primary care clinicians in the USA and how a PA might provide a solution to the problem (Kushins, Heard and Weber, 2017). This is not dissimilar to the primary care crisis in the UK where solutions to this area of workforce crisis are also being considered and PAs are cited as one of the possible solutions (NHS AND PHE, 2017). The American study demonstrated favourable outcomes for both PA and Nurse Practitioners (NP) but with restrictions to their role needing oversight by a medical clinician and legal scope of practice limitations preventing a 'PA owned and operated model' (Kushins, Heard and Weber, 2017). The proposed model was defended as a 'disruptive innovation' as it had a specific remit for the underserved population, supporting high quality with cost efficiency savings with less competition which offered a sustainable advantage (Kushins, Heard and Weber, 2017). The paper highlights a number of challenges and benefits to the role of the PA but acknowledges the large scale implementation of change that would be required to fully implement such an idea and how this would also impact on the training and education of a PA to embed business skills to support them to be more entrepreneurial. Healthcare systems in America are different to the UK and will present different challenges but the role is very established in America compared to the UK *(Ross* et.al, 2012). Interestingly, this paper demonstrates that even 40 years later with an established role, there are challenges and limitations to certain aspects of the role.

In observing the evolving role of the PA, this is a completely new market in the UK, introducing a different level of practitioner into the workforce who is not at the level of

a doctor but is potentially less expensive and can carry out many of the tasks that a doctor can do. This is where the notion of the role as a 'disruptive innovation' initially occurred.

In conclusion to this section, for organisations to succeed, there needs to be an element of disruption to understand the scope of the business and strategy for managing development based on knowing what the customer market wants and senior leaders have a key role to play across the sustaining and disruptive interface (Christensen and Raynor, 2003).

2.4 The barriers and challenges to implementing innovation.

This section reviews the barriers and challenges to innovation, particularly in light of a strong call to embrace innovation and change, to help understand how to work through these barriers and challenges to support an open and free culture that can be embraced in a positive way and address concerns in a helpful and meaningful way.

Internal politics be a major barrier to innovation as it can have powerful influence (Black and Fitzgerald, 2018) and Institutional forces can often block change unless there is a sense of shared values, beliefs and patterns that provide consistency (Gool *et.al,* 2017). People seem to respond to change in many ways but often in a manner likened to grieving, beginning with denial, resistance, exploration and then commitment (Selivanoff, 2018). Many professionals are not comfortable with moving outside of what they know, and this causes resistance and prevents dynamic innovation and change (Gool *et.al*, 2017). The healthcare industry can be subject to constant change and there is no immediate sign of this changing which does impact on employees (Selivanoff, 2018) and this sense of constant change can feel exhaustive to staff. There can also be

an emotional impact on how people feel about change which can be one of the strongest factors in resistance to innovative ideas particularly when staff might feel manipulated or the change has a negative impact provoking suspicion, fear and anxiety (Selivanoff, 2018). Several barriers have been described as based in poor communication, a sense of hierarchy, the complexity of understanding across diverse backgrounds, lack of time and financial support (Sullivan *et.al*, 2016). These issues reflect the importance of remembering to ensure that ideas that can come from the workforce are not lost because of these potential challenges. Seeking outside help for transformational change rather than looking for solutions inside an organisation, can damage staff confidence and morale, prohibiting lasting change (Tiley, 2013; Marshal, Miani and Nolte, 2013). It is also important to note that power and responsibility can be devolved to clinicians who may not have the leadership skills embedded in their education and may need training to enable this successfully (Long and Spurgeon, 2012). Large system change can also bring a tension between old practices and new practices if there isn't a meaningful narrative for staff to understand (Greenhaugh *et.al*, 2012). A literature review of teams and inter-professionalism in healthcare practice suggests there are many barriers related to institutionalised ways of working which would be a fundamental block to an evolving new role (Tataw, 2012) and it has been suggested that a move from an institutional/physician focus to putting patients' needs at the core of healthcare practice is a challenge that may support future innovative workforce practice (Avgar, 2011).

An example of some of the barriers and challenges in healthcare were also found in a number of studies following the Francis report which highlighted significant failings in healthcare services and where one of the key interventions was to support nurse

leadership to prevent and mitigate against such failings (Francis, 2013). In the *Compassion in Practice* report (NHS, 2012b), one of the actions to prevent such failings in the future was to support ward managers to be supervisory rather than 'counted' in staff numbers (Regan and Shillitoe*,* 2017). This would require a large scale change in organisational structure and was a recommendation which was voluntary rather than a mandate and therefore, despite a strong advocacy for a model of supervisory leadership, this was not adopted due to the extra investment that would be required for this type of nurse leadership and subsequently the notion of this type of model was blocked (Regan and Shillitoe*,* 2017). Another example was a study that looked at the implementation of 'healthcare trainer services' to offer one to one support for healthier living where the model of delivery lost the focus of the role over time, preventing adoption and diffusion of the role and threatening the original ethos as it became more medicalised instead of aligning it to a more medicalised approach for future sustainability. (Mathers, Taylor and Parry, 2014).

A number of the early research studies that are described later in this narrative really do highlight a number of concerns and misconceptions that can occur with the evolvement of new roles and highlight concerns that may feel threatening to other practitioners' assumptions of their own role in the workforce and the disruptive nature of a new role that they may fear will supersede their own. What is known is that obsolete and ineffective practice can be resistant to change but this can also be difficult to assess through an overload of information (Balas and Chapman, 2018).

2.5 Acceptance of innovation and change management and how to deal with this.

In order to drive innovation and change, it would be important to understand the change management processes to support the introduction and subsequent embedding of a new role.

System wide leadership seems to play a key role in managing innovation and change but it is also worth noting that managing change is a process that is adopted in different approaches that can be: behavioural, cognitive, humanistic, psychological, personality based and psychodynamic (Cameron and Green, 2020). Change is something that can be welcomed or feared and those who embrace change embrace opportunity and risk while those who more reluctantly embrace change tend to focus more on the risks (Galli, 2019) Examples of change models are Kotter, Adkin and Lewin's change management model and a comparison of these models suggest that Kotter's eight steps in the process of change was more useful for the implementation of organisational change, particularly when working with senior management (Galli, 2019). Kotter's model aims to capture the opinions of practitioners and works particularly well with collective leadership (Caulfield and Brenner, 2020 and Rajan and Ganeso, 2017) and utilises a sense of urgency, team building, vision, buy in, empowerment and quick wins, which must work and stick (Kotter 2014).

The identification of leaders has been described in one article as developing the 'health care black belt leaders' requiring staff to have skills and knowledge in a number of areas including: measuring performance, managing change which was result driven, leading on operational strategic direction, strategic execution and utilising support from wider

services thus yielding impactful results in a clinical environment offering good patient care and customer satisfaction (Bedgood, 2018). Social capital as a concept is discussed at management levels and can bring about a collective asset which affects individuals by offering a sense of membership, relationships and networks that allow individuals to cooperate and collaborate allowing them to feel they have an identity (Black and Fitzgerald, 2018). Social ecological theory suggests organisations need to be fully engaged through a combination of 'individual interpersonal organisational community and macro policies' (Gool *et.al*, 2017). Key findings from 19 studies suggest that this is difficult and there is no strong evidence base to support how this can be achieved but does imply that influencing proactively across an organisation at all levels will help support the constant changes and change management. (Gool *et.al*, 2017). The skills and attributes of good leaders seem to have a willingness to learn and an aptitude for success, adopting good facilitation and communication skills that can work across cross cutting teams with the ultimate test of success usually achieved through financial savings, high quality and good access to healthcare producing good results for the organisation (Bedgood, 2018). These collaborations can create trust, a sense of belonging and therefore more effective collaboration. In creating a climate of change and innovativeness, facilitating people to interconnect helps to form team spirit, acceptance of new ideas, a commitment to doing things differently and encourages staff motivation (Black and Fitzgerald, 2018). It is important to understand that there are many stages to change management, but they must begin with an understanding of the intellectual impact of the change, with employees requiring factual evidence to support the rationale (Selivanoff, 2018). It has been considered that strong leadership as shown in the black belt leaders can facilitate masters in change management

(Bedgood, 2018). Bevan (2010) describes healthcare and the financial challenge as a global problem and suggests that building capacity and capability has to be a strategy that it is built at every level of the healthcare system and asks the question as to what needs to happen to enable the health care system to create a workforce of change agents. Davis, (2011) advocates lean thinking using principles from the car industry designed to develop holistic and efficient health systems which have helped transform the culture of wards in the Countess of Chester hospitals NHS trust.

It has been acknowledged that flexibility within healthcare organisations is essential to help the adaptation of new working patterns (Gool *et.al*, 2017). The level of flexibility is also important as too much flexibility might cause chaos and fragmentation whereas creating a flexible stable environment is thought to be a factor for successful change management (Gool *et.al,* 2017). To implement change, there needs to be a clear and concise process that outlines the new path and within healthcare this may mean taking different paths to evaluate the most successful one but if the path is considered not to be the right one then failure will occur (Selivanoff, 2018). Change management often shows genuine signs and potential resistance to change (Gool *et.al,* 2017) and negativity is always a concern, but this can be replaced with a positive attitude that aligns with people's values and aspirations helping the pendulum to turn, particularly when people can see the value in adopting the change (Selivanoff, 2018). Government policies and healthcare insurance can be major influencers that may impose certain rules or requirements that prevent flexibility (Gool *et.al,* 2017). It is important to remember that social capital may provide new perspectives to address these challenges and create a sense of openness through a collective approach that manages internal politics and

develops organisational commitment. This is thought to be achieved by being people focused (Black and Fitzgerald, 2018).

For flexibility to be successful people need to be adventurous and managers must release control and allow experimentation (Gool *et.al*, 2017). Using a model of social ecological theory may help management create more flexibility within the system and manage any ambiguity (Gool *et.al,* 2017).

In conclusion to this section, change management is a process that needs to be managed well to ensure both inclusivity and effective measurement of success. This could be perceived as quite disruptive in a large organisation that is under constant scrutiny and change producing a negativity that is not conducive to accepting a new role. However, with good planning, a shared vision, a clear model for change clear, flexibility, inclusion and collaboration successful change management incrementally can be achieved.

2.6 The culture of the NHS as an organisation- Introducing a new role into the NHS.

This section seeks to provide an understanding of how complex it can be to manage cultural change across large organisations like the NHS and why it might be challenging to introduce a new role across services but also why it is important to move innovation through change forward.

The growth in demand and accessibility of health services has a profound effect on the financial challenges faced by providers of healthcare, for example, long waiting lists for certain services (Christensen, Grossman and Hwang, 2009) and managing change by creating a receptive culture to enable this is a key priority in workforce strategy (NHS

AND PHE, 2017, Imison, Castle-Clarke and Watson, 2016). There are a number of philosophical viewpoints about what makes a company successful, and these relate to a culture in organisations that encourages bravery in trying out new ideas, which also supports staff to feel empowered and valued through active involvement in new solutions in the workplace (Dyer, Gregersen and Christensen, 2011). Design thinking remains in evolution in its application to setting a cultural change in organisations that applies value creation to value - based healthcare for patient focused outcomes (Koomans and Hilders, 2017). The process needs more impetus to yield results but the concept of using design leadership and design capabilities using an inter-disciplinary leadership approach is thought to be necessary in the application of healthcare change and innovation (Koomans and Hilders, 2017). This is also what Aiello and Roberts, (2017) advocate in introducing the PA role into the workforce. Creating a positive attitude has also been known to transform the workplace by creating positivity and reducing staff anxiety in relation to change but this also relies on clear concise messaging with positive reinforcement and a solution focused approach (Bedgood, 2018).

Introducing lean techniques has been encouraged with examples from the car industry, showcasing examples of lean principles that have changed the culture in certain practices at ward level and offered efficient new holistic and patient centred pathways (Davis, 2011) but to enable transformation for integrated patient centred services, leadership development is required (Jeavons, 2011). Organisations also need to seek out talent and there could be a link to managing recruitment more strategically, at higher board levels (Rodgers, 2010) perhaps using external agents which could suggest that recruitment may not take on board new roles. Holmes and Chamberlain, (2010)

discuss the importance of the Chief Nursing Officer in action planning and staff autonomy for change but also acknowledges that there are challenges with the fear of failure during implementation of change. Clinical innovation has been advocated as supporting both patient safety and organisational reputation (Staren, Brown and Denny 2010) and in line with this thinking, there is a notion of putting people before processes, an example, is a devised seven stage approach of cultural change, powered by a clinician who sought to transform care following a poor experience with a family member; Key attributes were commitment, leadership, responsiveness, action, enthusiasm and clear focus (Brown, 2009).To create an understanding of what guiding principles are required for sustainable organisational change, a policy focused literature review looked at what the key factors for sustainable change may require to implement a change in culture in healthcare organisations- creating a sense of urgency, identifying incremental changes from a clear strategy, strong leadership, a collaborative approach and an ability to constantly learn and review as the key drivers for success. (Willis *et.al*, 2014). Leadership for change should integrate interdisciplinary methods comprising of a range of clinicians including various support and business staff as well, using an inclusive approach (Bedgood, 2018). This is also endorsed by Simmons, (2015) who suggests that organisations need to review the way they operate and be more entrepreneurial, fully collaborative creating solutions and involving the entire organisation and by Manley, *et.al,* (2014) who strongly advocate the importance of a shared purpose through valuing the workplace for active learning. One of many examples of where this worked well was a patient safety initiative that focused on listening to patients, staff and carers to learn about the patient journey thereby creating a culture of constant open and transparent learning (Dight and Peters, 2015). Another example was to develop toolkits for good

care to see how well staff were compliant with the Care Quality Commission by asking the opinions of patients (Callard and Williams, 2012). Greenhaugh *et.al*, (2012) used a case study organisational design to look at 3 different services as part of a whole system change approach, the findings did show that there were a number of key cultural factors that were influenced by the ability of the NHS to have to respond to relentless implementation of constant change, holding a tension between striving for best practice, with stakeholders sometimes having conflicting understanding of what is being asked and what each stakeholder may have to lose and therefore losing a potential meaningful narrative to take new practices forward (Greenhaugh *et.al*, 2012). In order to achieve implementation of any intervention and to adopt the behaviours required to support change in organisations, a systematic review conducted by Moussa, Garcia-Cardenas and Benrimoj, (2019) suggested the implementation of facilitators of change to help people understand the need for change and how to make it happen using strategies that are evidence based and offer advice in relation to goal setting, progress reporting, outcome data, using tools and resources that support effective facilitation of change and although more research has been suggested, this approach does at least provide a structure for implementing new innovations in health (Moussa, Garcia-Cardenas and Benrimoj, 2019).

The relationship between workforce management, new innovations and the influence of strong HR practices for organisational implementation of new work roles is described as innovative (Kesler, Heron and Spilsbury, 2017). However, this also highlights how fragile new roles can be in the workplace and how macro and micro processes need to be in place for emerging new roles to be accepted (Reay, Golden-Biddle and Germann 2006). Supporting new work roles requires development within organisations and

systems in place to manage this process at both macro and micro levels (Kesler, Heron and Spilsbury, 2017). Therefore, HR practices could play a key role in supporting the behaviours attitudes and values required to manage this as there are ways in which new roles can become institutionalised, but this does require an interest in service innovation which HR can play a key part in (Kesler ,Heron and Spilsbury, 2017). Reay, Golden-Biddle and Germann (2006) looked at the Nurse Practitioner role which had faced challenges to implementation but also how there were key phases to the process which led to the development of emergence and acceptance of this role. The Nurse Practitioner is a role that is now widely used in healthcare, but it has emerged over time. Managing change well requires careful planning and a review of organisational culture, particularly if there is what can be described as 'cultural inertia' (Selivanoff, 2018). If during a change process, employees are too resistant, most innovations and change will fail (Selivanoff, 2018). Money is often used to help foster change, but this is not deemed to be a major factor in change management, particularly when money is not an incentive for some employees. Moreover, the adoption of change has much more to do with value and where there is internalised value, employees demonstrate willingness to embrace change more successfully (Selivanoff, 2018).

In conclusion, changing the culture of organisations is a common theme in the literature, particularly in relation to large scale transformation of healthcare, recognising that this is a significant challenge if the right values, processes and actions are not put in place. It does also link very clearly to the research questions looking at the views of stakeholders and the challenges they may face introducing a completely new role across large organisations and the many different layers of the organisation

that may need to be involved to support such an initiative and there does appear to be a strong theme for taking the team with the organisation.

2.7 The value, contribution and gaps in research related to the new role of the Physician associate.

There is a paucity of information related to this role which has been highlighted by several early researchers and authors in the field (Halter *et.al,* 2013; Curran and Parle, 2018). Although positive outcomes and an understanding of the need to diversify to support work force pressures has been reported, the lack of awareness, regulation, prescribing and role identity can lead to scepticism, lack of understanding and confusion about the scope of the role and role boundaries (Jackson, Marshall and Schofield, 2017). This may cause unnecessary threat to other practitioners and affect the implementation of the role if a PA is considered less effective and not appropriately understood. There has been a call for more research into the experiences of the PA educational journey and their work experiences to establish how they are being integrated into the healthcare system (Howarth *et.al,* 2020). This is a fundamental reason for why I conducted this research to meet a clear gap which is limiting the scope of development for this role. The role of the PA could offer a new practitioner to support a growing workforce crisis but, despite calls for new ways of working, the PA will struggle to be a 'disruptive innovation' if NHS organisations are unclear about the role and do not value the potential. This study addresses this gap and provides an opportunity to bring new understanding of a potential new market for the PA, applying new knowledge into the field. At the inception of this study, there had been a small number of papers published that were relevant to the research questions and to the

evolving role of the PA that merit discussion. Included in this section is a brief narrative around some of the opinion, debate and analysis pieces and a review of specific research papers related to the evolving role of the PA, looking at how they are being implemented into the workforce, what challenges they might face, how they are contributing and what support might be required for stakeholders to understand the role.

The purpose of this next section is to critique some early seminal articles about the evolving role of the physician associate. This has been specifically included as it provides key learning points for this research and helps to add some context to the early evolvement and perceptions of this new role and will help to inform the research.

Early opinion pieces suggest PAs are seen as one solution to the workforce crisis: *The case for the Physician Assistant (Ross et.al, 2012) and a new kid on the block (RCP, 2014)* which were discussed in chapter one as early literature that supported the re-emergence of the PA role in 2013. Both articles were published in Clinical Medicine, a journal which would appeal very specifically to clinicians and was likely identified as a good medium to create awareness of what a PA does, how they may contribute and how their place in healthcare service delivery would be very aligned to working under the supervision of a doctor in the medical model. A further opinion piece by Aiello and Roberts, (2017) discussed favourably the development of this new role but rather than just align a PA to medical clinicians, they suggested that traditional medical models for workforce solutions need to be guided to more multi-professional models and the PA could be pivotal to this due to the very generalist nature of their training which could support a clinical workforce across the healthcare economy (Aiello and Roberts, 2017).

This ideology aligns to research plans to look at the role from an inter-professional perspective to establish how other professions beyond doctors see the role and what challenges to implementation they may perceive. To enhance ongoing awareness for stakeholders to understand what a PA does, a video capturing the role was released in 2015. This was in collaboration with HEE and the George Elliot Hospital who were one of the early pioneers of embedding the role in a hospital environment. The video '*Physicians Associates in the workplace'* explained a great deal about a day in the life of a Physician Associate and has been used as an effective resource to showcase the role. What was helpful about this video was the depth and breadth of areas in which a PA could work, allowing stakeholders to see where a PA could support continuity of care in almost any healthcare setting.

The re-emergence of the role also caused much controversy and negative press, one example in 2017, when the Daily mail announced that critics had called the 2-year training of Physician Associates into the workplace 'Doctors on the cheap' (Mc Cartney, 2017). Jeremy Hunt later tweeted that this was not the case and that they were widely welcomed (Mc Cartney, 2017). However, Mc Cartney, (2017) did challenge the cost effectiveness of the role with concerns in relation to lack of regulation and prescribing rights, suggesting doctors would have to offer extra supervision to a PA which would interrupt the GP and compromise patient safety, all of which could negate any savings (Mc Cartney, 2017).

In 2016, as a co-author of a debate and analysis article in the British Journal of General Practice, a proposal was put forward for general practice to be remodelled to include a multi-professional workforce that included the new role of the PA. This new model

would be hosted in a new innovative building adopting a business model to support patient flow through the system (Lewis *et.al,* 2016). Patient appointments would be determined by a new skill mix of non -doctor clinicians supported by Consultant Primary Care Physicians (CPCPs), a new name for the GP in a transformed service delivery of healthcare. The new building the 'Roundhouse' would host a triage team (in the round room) of triage nurses supported by CPCPs who would refer patients to an appropriate practitioner in a consulting room. The consulting rooms would have a mixture of PAs, advanced clinical practitioners, practice nurses, community pharmacists, mental health practitioners, GPs and GP returners and CPCPs would be available to support consultations when required. The model had patient experience at the heart with the CPCPs supporting the triage system and navigating patient appointments to the most suitable practitioner. This would require a significant culture change to seeing your 'usual GP' and to realising that many other different practitioners may in fact be able to solve patients concerns/problems more appropriately. For the GP, it offered an opportunity to lead a multi-professional team and have overarching clinical responsibility for day to day running of services to include advice via video links to home visiting PAs and paramedics. The role has the potential to offer a more satisfying career as the new GP would act as a clinical support role to practitioners for whom a large majority of the work could be devolved allowing the expertise of the GP to be utilized to the full. This article received mixed responses both positive and negative.

The ongoing debate of the PA role has undoubtedly remained contentious as the role evolves and most research to date is predominantly 'case study based.' However, there are several research papers discussed below, some of which are interlinked through a NIHR funding stream, but they are all related to the introduction of a new 'innovative'

role in the workplace and the challenges associated with implementation. These papers and an additional paper are individually discussed below and are predominantly observing primary care specifically.

2.7.1 Paper 1. Drennan *et.al,* (2015) Physician Associates and GPs in Primary Care: A Comparison.

This early UK study demonstrated positive outcomes for the role of the Physician Associate and aimed to compare cost efficiency and outcomes of same day consultations in general practice to that of a GP. This large observational study observed 2086 patients records across 12 practices in the UK. The method was to compare a GP consultation and a PA consultation, with re-consultation as a measurement for the same or connected problem and care processes as a secondary outcome. This was one of the most exciting studies in the early evolvement of PAs where results showed that there were no significant differences in: rates of re-consultation; ordering diagnostic tests; referrals; prescriptions ordered; or patient satisfaction. Overall a PA consultation was 5.8 minutes longer and each consultation was £6.22 more cost effective. PAs generally saw same day referrals and younger patients with less medically acute problems, they had longer appointments than GPs but shorter appointments than nurses.

This study had a sample size that gave 80% power to the study with an anticipated 30% return on the patient satisfaction surveys. Although this was an observational study, this was one of the most significant studies to measure the impact of a new role in general practice and PAs received high levels of satisfaction which was very encouraging. What became very clear from this study was that PAs seeing same day

referrals predominantly see patients with fewer complex problems, leaving the GP to manage more complex cases. Despite the consultation length with a PA of 15 minutes versus 10minutes for a GP, it should be acknowledged that this is an evolving role and UK PAs will have far fewer years of experience than a GP and comparing them always to a GP may not be a fair comparison…. A GP in training may be a fairer comparison. What this paper does acknowledge is the ability of a PA to contribute to the workforce.

2.7.2 Paper 2: Drennan *et.al*, (2017) Physician Associates in Primary health care in England: A challenge to professional boundaries.

This paper describes the evolvement of the PA role in the UK over the last 10 years and how this role might fit into the NHS as a 'mid-level or non-physician advanced practitioner.' This paper is useful to look at how stakeholders may effectively see where a PA fits into an organisation. The current NHS workforce is described as 'a well - developed panoply of health professions' highlighting the potential challenges with existing professionals, let alone introducing a new one. This paper is underpinned by a theoretical framework which explores the dynamic systems of healthcare professionals which is an interesting approach when considering how a new professional might fit into an organisation.

This research draws from a previous project in 2014 which analysed PA' s in general practice. This analysis was undertaken at macro and meso levels where data was obtained from policy documents and from 25 interviews with civil servants, NHS managers and national experts across nursing and medicine. At the micro level, interviews were conducted with staff who were operational in the workplace: GPs, nurse practitioners and the wider practice team. The paper suggests that there already

exists a shifting of boundaries across existing healthcare organisations with changes in work roles and leaders of healthcare systems seeking a flexible workforce to support shortages, productivity and costs. However, it is suggested from findings from the literature (Abbot, 1998) that a crossing of professional boundaries becomes one of 'power, status and control' with medicine remaining the most significant example of this with the use of the term 'subordinate' to address using other health professions to support the workforce. The research undertaken by Drennan *et.al,* (2014) asked the question of what constitutes jurisdictional boundaries and relations when introducing a new role at the macro, meso and micro levels- a good approach to establish opinions and drivers at different levels of the organisation.

The methodological approach to the study was a purely qualitative 'interpretivist' paradigm using a mixed methodology for macro, meso and micro analysis. At macro levels purposive semi-structured interviews were conducted with key stakeholders, these interviews determined the interviews at a micro level. A document and text analysis were used at Macro/meso level and a synthesis of all papers from 1980 through to 2013 was undertaken. Fifty participants were identified for interview through website identification of senior roles and 25 agreed to participate by phone or face to face. At micro level, 11 general practices were identified and 6 of them already had a PA and 5 did not. The range of GP practices spanned across rural, suburban and inner cities and the sample was purposive to ensure a range of opinions from staff across roles in general practice. There were 39 participants who agreed to take part and areas explored were in relation to the factors that might support or prevent the embedding of this role in general practice. The interviews were all digitally recorded, transcribed coded and themed to form a 'narrative synthesis' of the findings.

The findings were presented at all levels:

Macro level.

Macro level data was obtained from government and professional organisations. The analysis of documents identified an acute workforce crisis, for both doctors and nurses. To counteract this, the PA role emerged as a strategy from the government to fund 2 pilot projects between 2002 and 2005 with the aim to introduce PAs from America into the UK health system. Interestingly, the evaluations from this pilot project were positive with patients and practitioners accepting the new role with patient safety not compromised (Woodin *et.al,* 2005; Farmer *et.al,* 2011). However, the authors conducted an analysis of 63 papers with differing opinions on this new role at that time and although senior officials in the Department of Health were highly supportive of the development, this was not the case for leaders in nursing and medicine. Their view was very different and there was real opposition to the introduction of this role which goes some way to explaining why the role was not developed at that time. There were also concerns that an American role would not transfer to a UK market and that the emerging role of the advanced nurse practitioner (ANP) was already fulfilling the gap. Policy documents from the Department of health supported the role right up until the development of the competency and curriculum framework for the education of PAs was developed in 2012. The support from this high-level macro level started to tailor off and analysis of policy documents shows a gap in any reference to PAs between 2010 and 2014 when it re-emerged again as one potential solution to the workforce crisis.

Macro and Meso levels.

This included the views of doctors, nurses and managers. There was a strong emphasis on cost-effective flexible working patterns from the managers, but this also caused a blurring of boundaries and role confusion. Without the push from the government, the managers saw no reason to move forward with this role and were quite neutral in their views about PAs. The issue of regulation was again a common theme and managers felt that this would be a barrier to cost effective services. Many participants felt that there was tension between the dynamics of different healthcare professionals and this resistance to working together might limit the cost effectiveness of services. Doctors had a variety of responses and those in strong leadership positions saw the PA as an opportunity to protect doctors in training although they were ambivalent as to which profession could support the medical workforce. The views of doctors interviewed were predominantly negative and there were some very strong feelings that a two-year training could not compensate for the role of the doctor and would not secure value for money. The nursing workforce had a variety of views on the role and those in managerial roles were supportive of the PA and responsive to NHS change with a sense that in times of workforce crisis many tasks deferred to Nursing which detracted nurses from being able to nurse. The role of the PA was often compared and likened to the role of the advanced nurse practitioner. However, nurses who were ANP's were more resistant arguing that they were best placed to support doctors rather than introduce an unknown role. The major findings at this level suggest that without support at state level there would be little to no impetus for developing this role.

Micro level

This included participants who were working on the ground floor in general practice and the findings were themed as: staffing, jurisdictional boundaries, vertical substituting for doctors and relationships and boundaries.

In relation to staffing some GPs had employed a PA when they could not appoint a doctor, and some had been assisted to appoint an American PA to support their workforce. GPs run their own businesses and therefore it would be in their interest to support cost-effective approaches to staffing that ensure clinical patient safety. In the second set of GPs' they describe themselves as needing to be more specialist managing complex patients and that they required a team with a mix of skills from phlebotomy through to minor illness and less complex care. Jurisdictional boundaries were based on competency and PAs themselves described boundaries and how time and experience developed trust which consequently expanded those boundaries. Again, the issue of prescribing was described as a major barrier and PAs developed creative ways of minimising the disruption to doctors signing prescriptions, however this was only achieved once there was a sense of trust. The PAs described how they had been put into areas of vacancy that were difficult to fill and that this sometimes meant that they were offering vertical substitution for the doctor but also horizontal substitution for the nurse, hence demonstrating the flexibility of the PA role. Other professionals and members of the wider team seemed to accept a PA as a good substitution for a doctor. However, initially some consultants and ambulance services were not keen to take a referral from a PA and some patients would also specifically ask to see a doctor although it was also reported that some patients preferred to see a PA.

Practice managers and GPs employing a PA spent time preparing staff to understand this new role and although there might have been some initial resistance, once a working relationship developed and the reality of needing to see and treat patients became apparent, the addition of the PA allowed them to focus more on their areas of expertise. PAs were compared with nurse practitioners, but the PA was considered to have a wider range of competency although there were many similarities. PAs were more comfortable with direct referrals and over time nurses' managers and receptionists found themselves consulting a PA when a doctor wasn't available and found them very approachable. Some reported that the role of PA s crossed the boundaries of both doctor and nurse and the main differences between the nurse practitioner and the PA was their medical model of training and a lack of official credentialing of the nurse practitioner role.

Limitations of the study

The authors were unable to obtain interviews from GPs in training which would have been a useful addition, however, the sample remained broad across 3 levels.

Conclusions

There were mixed levels of acceptance of the role mostly affected by 'inter-professional interaction' and the impact of 'State Agency' The announcement from Jeremy Hunt that there would be 1000 more PAs in general practice (BMA, 2017) clearly influenced the re-emergence of the role. There was a mix of acceptance from medical leaders looking to develop support for the mid- level practitioner through to some resistance from junior doctors and ANP's who felt their roles and jobs may be threatened. The restrictions of regulation and prescribing remain a key problem and the development

of working trust a key enabler. The paper concludes that there is more still to know as the role of the PA starts to unfold.

This paper outlines the complexity of implementing new roles in healthcare and demonstrates that barriers to successful implementation may well relate to a perceived threat by other professional groups to their own roles and a concern about competence and scope of practice. However, time and trust appear to remove those fears and the PAs appeared to demonstrate a recognition of needing to prove their worth over a period. The differences at Macro, Meso and Micro levels was also insightful in relation to different perceptions.

2.7.3 Paper 3. De-Lusigan *et.al,* (2016) Physician Associate and General Practitioner *Consultations: A comparative Observational Video study.*

This paper aimed to ascertain the quality of consultations of a PA versus that of a GP. This was a comparative observational study based on consultations that had been videoed with the consent of patients and by volunteering PA' s (4) and GPs (5) across 12 practices already involved in a further and larger study. In total 62 consultations took place with adult patients presenting on the same day with 41 GP Consultations and 21 PA Consultations. They were assessed by experienced GPs using the 'Leicester Assessment package' for safety and level of competence. This package is the only reliable and valid test for clinical competence, although the reliability of the test has been questioned by others, there appears to be no other alternative. All consultations were anonymised and reviewed by 2 GPs and a Mann-Whitney U test was used to compare the median scores between the two.

The results of this study demonstrated that all consultations were safe, but GPs had higher ratings than PAs, but the authors also acknowledge some inconsistencies with the package.

This was one of the first studies of its type and although the GPs performed better in all consultations and across all data, it would be hard to agree that this was a comparable study. The GPs had significantly more experience than the PAs and this likens itself to similar studies comparing nurse practitioners- the authors do acknowledge this.

The small numbers involved in the study also does limit the generalisability of the study.

The paper acknowledges that it was excellent that the GP assessors could not spot the difference between PAs and GPs and suggest this is a credit to their education for the role which is 2 years over 9 years.

The conclusion of this study was that the PA was a complimentary addition to the workforce and that the consultations were safe.

2.7.4 Paper 4. Halter *et.al,* (2013) The contribution Of Physician Assistants in primary care: a systematic review.

This systematic review was carried out to establish an evidence base for the role of the PA in a primary care setting and adopted a search criterion from 1950 through to 2010.

Databases used were Medline, CINAHL, PsycINfo, BNI, SSCI and Scopus .

Eligibility criteria was a qualified PA working in general practice or family medicine.

The results identified 49 papers which met the inclusion criteria and 46 of these were from America, with 1 from the UK, Netherlands and Australia. PAs appeared to have a different workload to doctors, seeing more acute presentations and younger patients

and it was acknowledged that they need the supervision of a doctor but importantly, patient acceptability was consistently high.

The conclusion to this paper endorses that research evidence for the role of the PA is limited and more research is needed.

2.7.5 Paper 5: Halter, M; Drennan, V and De-Lusigan, (2017). Patients experiences of consultations with physician associates in primary care England: A qualitative study.

This paper looks at the patient experiences of PAs as an innovation to GP services where the nursing workforce are already established, and this role introduces the PA as substituting for part of the GP role.

This study used patient satisfaction surveys with volunteer patients who had consulted with a PA across 6 general practices in urban and rural areas and within different levels of deprivation. The survey explored: patient satisfaction, understanding of the role, experience and how referral and prescribing were managed leading a perspective to whether a GP or PA might need to be consulted. Some had had one individual consultation and others had seen a PA more regularly. Four of the PAs were from America and three were UK trained. In addition to the survey, patients were also invited for an interview and 34 patients participated in an interview which was digitally recorded and analysed using interpretive analysis and a thematic index developed, 4 interviews were removed as they were not relevant to the role of the PA.

Thematic analysis revealed 4 themes:

1. A variation in understanding of the role, with some patients thinking they had seen a doctor and others not understanding the role, seeing it more as an 'apprentice' to the doctor.

2. Trust and Confidence, this seemed to be built on positive consultations, trust in the NHS and GP employers and the knowledge that a referral could take place from a PA. PAs were described as having good communication skills. Some participants however reported more negative experiences.

3. Comparisons to GPs: Patients described similar consultations with the only difference related to the inability to prescribe. However, this was not seen as a problem in most cases where PAs had facilitated as short a wait as possible.

4. Future consultations with a PA. Although most of the participants were not offered a choice of whether they saw a GP or a PA as they were same day appointments, a number actively sort to see a PA over a GP and reported good experiences. The only major differences were when more complex prescribing consultations were required, and a GP was considered more appropriate.

Conclusions: Although the outcomes of this study were generally positive, it does highlight the importance of awareness raising and good communication of the PA role to ensure patients understand the role but it also does highlight that patients like continuity and when the GP is pressurised and busy the PA has more time to communicate and listen.

2.7.6 Paper 6: Jackson, Marshall and Schofield, (2017). Barriers and Facilitators to integration of Physician Associates into the general practice workforce: A grounded theory approach

This paper explores the new role of the PA in an area where there had been less exposure to the role to understand what 'barriers might prevent the integration of the role and what 'facilitators might enable the integration of the role. An adaptive grounded theory approach was used to obtain qualitative data from stakeholders which included Clinical Commissioning Groups, General Practitioners, PA Educators and Health Education England. The authors had no previous experience of the role which could be a positive way of ensuring objectivity to the study, through ensuring no pre-determined bias. However, they did keep a diary of events and data was collected using field notes and audiotaped recordings that had been transcribed. This informed a constructive literature review using the terms PA and primary healthcare/primary care/general practice. Emerging themes from fieldwork and literature searching identified 3 overarching themes:

1. 'Integration'
2. 'Service Delivery'
3. 'Quality'

CCG leaders were more open to the role but there was a general concern that the number of graduating PAs was still very small to make any significant differences to services in primary care. GPs expressed concerns about this role being a potential political move to undermine their own role and potentially privatise the NHS and they

were also unsure of how a PA would fit into teams and how the issues of prescribing would be overcome. Additionally, the fear of managing the complexity of cases that appear in general practice and dealing with uncertainty was expressed as a concern for this new role alongside needing more understanding about the level of supervision required to support a PA and whether they would be cost effective. Comparisons were made alongside the Advanced Nurse/Clinical Practitioner and whether this new role would take away the junior doctor role.

Focus groups were then developed using the emerging themes as a discussion point. The sample was drawn from the post graduate training community to include patients who were linked to the medical school and then the sample was widened to include younger doctors and advanced nurse practitioners. In total, the sample was 30 GPs, 10 ANPs and 11 patients, all of whom were involved in a discussion across one of eight focus groups. This was a substantial sample and saturation and triangulation of data was achieved by focus group 3.

Data from the focus groups were analysed and coded using NVivo and this was also reviewed independently to support credibility and validity of the data.

The authors present their findings as a conceptual model demonstrating the facilitators and barriers to the role. There are 3 key focus areas related to: a pragmatic response to increased demands for access to healthcare services with diminishing resource; concerns of competence and skill ability of a PA in a primary care environment and the legislation required to enable regulation and future prescribing of PA the role. This is explained in more detail below:

Facilitators and Barriers:

1. Patient Demand: There was overwhelming agreement that there was an acute workforce crisis and demand for health care was greater than the current workforce could sustain. Patients articulated that this was affecting patient access to care. There was complete agreement that supporting the workforce would be a facilitator.

2. Safety: Although there were mixed responses, prescribing and regulation were expressed as a key concern. There was also no clear understanding of what level of supervision would be required to support PAs in practice and whether this would add an additional burden. Patients were less concerned by the supervision but understood the restriction that a lack of prescribing rights would give.

3. Training in the medical model was a facilitator with ANP's and Patients seeing this could support continuity of care but with GPs uncertain that complex care could be managed by a PA, further supporting a general lack of understanding about the role.

4. The Generalist nature of the role provoked a discussion about managing uncertainty and risk and identifying that the role was not well understood. Where the PA would fit into a skill mix was also not well understood and how they would or could manage complex cases was a significant discussion point.

5. Undermining general practice through a political agenda was not supported in the focus groups but felt by some GPs although there was also understanding for the need to diversify. Some GPs showed opposition to the role with strong feelings amongst a few and one quote which described them as 'subordinates' was a

startling comment. There was some empathy from ANP's who recognized this position from taking on their own new roles which was interesting and confirmed again a general lack of understanding about the role.

6. Continuity of care: This was popular with patients who valued developing a relationship with a healthcare professional as seen with the role of the ANP.

7. Support for a national strategy to support regulation and prescribing to allow a PA to contribute fully to the role as a professional with an established identity.

Strengths and limitations

The strength of this study was the methodology which allowed the creation of themes that were formally tested for the focus group using triangulation of the opinions of both GP, ANP and patient to ensure credibility and a measured response. The analysed data was independently verified, and a reflexive diary supported robust data. The limitations were the acknowledgement that some of the GPs were closely linked to the medical school and had more working knowledge of supervision in the workplace as they were closely involved in training students. Lack of knowledge about the PA was cited as a limitation as the role is more well known in other parts of the country and the lack of knowledge will have influenced the participant responses.

When the authors compared the findings to the literature, there was a general understanding that when new roles had been introduced using a strategic approach, practitioners who at first might have been sceptical of the role, will develop more understanding, value and recognition of the role as it begins to be established and the benefits are seen. The generalist nature and training in the medical model are a positive advantage for working in general practice.

The research concludes that there remain several barriers to the integration of PAs into general practice. The authors suggest a strategic approach that supports regulation and prescribing is one of the most fundamental priorities. This approach has been used internationally with positive effect.

The authors also suggest raising awareness of the role with support from the FPARCP and through other professional bodies and policy makers would also support integration.

This study had ethical approval and was funded by the University of Sheffield as an innovation grant to support research that would inform the development of their curriculum.

2.8 Final reflections:

There is a great deal of literature that supports the need for new ways of working, new models of healthcare and this literature narrative concludes with a literature review of early papers that relate to my research questions quite specifically. Key writers in the field, such as *Drennan et.al, and Halter et.al* and others do highlight some of the early challenges and potential for this role, with *Jackson, Marshall and Schofield* unpicking the facilitators and barriers of the role and these authors may continue to contribute to inform research in this field. However, what is clear is that these early findings need further research to inform and support the development of the role in healthcare organisations and therefore the role of the PA remains an uncontested field where further research is required to inform its destiny. This role needs more than a few key ambassadors to drive this role forward and this thesis aims to support new knowledge to the early work of these researchers.

Exploring the narrative around innovation, disruptive innovation, innovation in health, change management, facilitators and barriers all resonate with these early findings from the limited research on the evolving role of the PA to date. The PA is a new creation, introducing a new role, disrupting the status quo with barriers and facilitators for implementation and a lack of understanding at different levels suggesting support for cultural change and greater awareness. The literature indicates that PAs are a practitioner who can work between the nurse and the doctor and provide continuity of care and therefore do have the potential to contribute to the workforce. It is very clear that the role is not well understood at all levels and has been perceived as unnecessary or a threat to other roles, and this may have contributed to the unsuccessful implementation the first-time round. In the second implementation which has gained momentum, these early studies, informed by the narrative are helpful in ascertaining the challenges to introducing a new role but also in understanding how innovation, disruptive innovation, healthcare innovations, culture and change interact and add context into the early research and challenges identified. What looks to be reassuring is that over time the role of the PA starts to embed through the development of trust, reliability and consistency. Although not implicitly stated as a finding, the PA appears to accept that the role will evolve with time, working towards the establishment of continuity, mutual respect and trust. Other new roles, like the advanced nurse practitioner had some empathy with that journey. The narrative and literature review have helped inform the theoretical framework for the research.

2.9 Theoretical Framework

The role of the Physician Associate could be a 'disruptive innovation' if staff in NHS and other healthcare organisations had more opportunity to embrace understanding new markets and how business models might help them. In order to explore this further, I applied a theoretical framework of 'innovation and change' to explore the barriers and facilitators for new roles but also to construct new knowledge using the theoretical perspective of symbolic interactionism between practitioners (Crotty, 2008). Within this framework is the underpinning theory that the role of the PA, without current restrictions, could be a 'disruptive innovation' and an agent of change management by creating a new market as a new mid- level practitioner, easing the burden of the growth in demand for healthcare services (NHS AND PHE, 2017). It could also be argued that this will not necessarily produce a new market but be a complementary additional role offering continuity and easing the burden and costs of locum doctor spend (Ross *et.al,* 2012). My intention was to explore how a PA might evolve in the workplace by exploring the views of students on that journey and if they might alter the position of an organisation if the scope of the role is more clearly understood. This will be particularly pertinent if the organisation is not ready or prepared for a new role and does not understand or acknowledge the professional identity of where they might fit into an organisation.

Innovation and change as a theoretical framework for this research aims to explore what needs to happen to embed a new role in healthcare but also asks the question whether a new market is potentially emerging through the new role of the PA or conversely is the role just an evolution of healthcare reform. Understanding innovation

and change will help form a structure to the research whereby the theory will help to understand phenomena which will then challenge existing and new theories. My aim is to get as close to understanding the PA experience in order to observe them as future clinicians in healthcare organisations and to observe their interactions with other professionals to establish what is required to embed this role. This research challenges the potential for the PA role to be a 'disruption' which also requires large scale change and understanding to uncover the challenges of an evolving role with both stakeholders and other practitioners within healthcare organisations. This may need to be reviewed from a macro, meso and micro level as discussed in the literature narrative.

There is undoubtedly a significant research gap in applying, understanding and articulating this new role in healthcare that this study addresses. There are currently only a small number of early researchers in this field with a paucity of literature available. There are calls for more research, increased awareness and information sharing into understanding and supporting this new role (Curran and Parle, 2018, Halter *et.al*, 2013; Drennan *et.al*, 2017; Jackson, Marshall and Schofield, 2017; Halter, Drennan and De-Lusigan, 2017). A recent paper by Howarth *et.al* (2020) looked at the early experiences of PA students, again reporting a significant lack of understanding about the role, their demographic and the specific needs of these students calling for more research to support PA students in their training and into new roles. This study will address this through seeking the opinions of PAs and stakeholder to gain further understanding of the challenges of implementing this new role. This study will entail observing how PAs and stakeholder can contribute to the workforce and what they perceive needs to happen to support implementation. This will be achieved by listening

to the views of PAs and stakeholders to gain a range of perspectives that can inform future recommendations and undoubtedly further research.

Chapter 3. Methodology and Research Design

3.1 Aim and research questions.

The methodology and research design offer a structure for the research aim, objectives and research questions, using an explorative world view to find answers to the questions. This chapter explores the overarching influences for the methodological approach and research design and is centred around the aim of the study. This chapter acknowledges a level of bias and potential pre-conceptions towards a world view of the research questions and the reasons for exploring this topic.

3.2 Ontological influence.

Ontology is concerned with the nature of reality and the philosophical study of being (Cresswell, 2007). For this research I wanted to explore the perceptions of practitioners both as a physician associate student with other students from different professions and from academics from different professions. As an early pioneer of new roles in healthcare some years earlier and a senior academic working across healthcare courses, I had some empathy for the journey they would be undertaking. My ontological perspective was to step back from my own assumptions and experiences of the role and understand the true perspective and reality from those who are on that journey (Crotty, 2008). The reality is that the physician associate is part of a multi-professional team and have their own challenges to uncover and overcome in their journey and I need to understand what this means for them and other healthcare colleagues. I aspire to understand how they can be effectively implemented and where they would align themselves in this team and how other professionals also see this. This type of

information could not be achieved with a positivist approach as I wanted to observe and explore the dynamics and relationship between this profession and their relationship to their place in the workforce and I wanted to hear direct thoughts and opinions from practitioners in the workplace. To achieve this, I wanted to ascertain how the physician associates view themselves as part of an integrated team and a new practitioner.

3.3 Epistemological Influence

Epistemology is concerned with how the researcher knows what they know (Cresswell, 2007). My philosophical perspective includes my previous experience as a practitioner and a senior academic involved in new roles and inspired me to be an integral part of this research (Drake and Heath, 2011). I wish to use my experiences from a situation that appears like that of the new PA into the workforce and try to understand how a PA might position themselves in order to support effectively implementing this role in the future.

3.4 Developing a methodological approach

Research has historically been 'Quantitative or Qualitative.' Quantitative data lies in the positivist paradigm and relies on objectivism, large numbers, a detached researcher and statistical analysis and links to the 'hierarchy' of evidence; methods include randomised control trials, systematic review, cohort studies, observational studies, surveys and questionnaires. (Broom and Willis, 2007). Conversely, qualitative data relies on understanding social meaning where values are explicit and the researcher is immersed in the research, there are fewer cases and analysis is done through themes and research

questions (Crotty, 2008). Data is often collected through focus groups, unstructured interviews, fieldwork and narratives (Frost, 2011, Myers, 2009).

For my research I have considered a number of methodological approaches and have considered 'phenomenological inquiry' looking at the lived experiences of practitioners in the field through 'story telling' and interviewing (Bevan, 2014, Kupers, Mantere and Statler, 2013) alongside action research which is also practitioner driven (Dyer, Gregersen and Christensen, 2011). However, my perceptions of a more naturalistic inquiry have led my research towards an interpretivist approach and initially ethnography (Cohen, Manion and Morrison, 2007) which has been fuelled by my own observations of many years. However, as the study developed, it became more obvious that the methodology would need to be part ethnography but with a stronger focus on narrative inquiry as the story telling part of the student and practitioner journey in the semi-structured interviews and focus groups were more specific to my research questions, whereas the simulated scenarios although informative for how different professional groups interact were based in the ethnographic principles of observation.

3.5 Narrative enquiry and an interpretivist approach.

In a healthcare context, the researcher's standpoint and the context in which they position themselves comes from an epistemological standpoint of the researcher's knowledge and understanding of the area and to the ontological perspective of the reality (Broom and Willis, 2007). As an interpretivist researcher, I must acknowledge that knowledge is socially constructed and reality may be subjective (Broom and Willis, 2007) whereas a positivist approach would follow natural science but with a detached observation looking for explanation (Crotty, 2008). Cohen, Manion and Morrison,

(2007) argue that the educational and social world can be messy and full of complexity and contradictions and this does not lend itself to a positive paradigm. Thomas Schwander (1995 p 125) states 'interpretivism was conceived in the reaction to the effort to develop the natural science of the social' (Crotty, 2008). The interpretivist approach is immersive in human enquiry and is culturally situated with interpretations of the social world (Crotty, 2008) and therefore research needs to see itself through the eyes of others which is why narrative inquiry for living the story and ethnography for observations as methodologies, captured my interest (Neyland, 2008, Clandinin. Caine and Lessard, 2018).

Qualitative methodologies that use in-depth interviewing and observation lend themselves to understanding the life and experiences and subjective meanings that guide decision-making in real-life situations and interpretivist researchers focus on the understanding and developing of a constructivist ontology theorising that individuals construct knowledge through the reality of association with events or actions (Broom and Willis, 2007). This research observed the real-life experiences of this new role from a student perspective and the challenges perceived for implementation.

Symbolic interactionism explores understanding and culture related to meaningfulness and constructionism and originates from the early work of George Herbert Mead who was a pragmatic philosopher and a social psychologist whose work was capsulated in 1934 by some of his students who wrote a book called Mind Self and Society (Crotty, 2008). The most well-known of these students was Herbert Blumer (1969) whose work is often quoted and who says there are three basic assumptions about interactionism that include: human action based on a meaning something may have for a person;

meanings often come from social interaction; they are then modified by the interpretation of the person who encounters these meanings (Crotty, 2008).

Interpretive research allows an acknowledgement that there may be conflict, subjectivity and tension in data, but that subjectivity presents an opportunity to reflect on consistent parallels alongside a variety of nuances (Broom and Willis, 2007). Increasingly qualitative approaches are being used to support health care policy and practice and include lay people to provide a different perspective (Saks and Allsop, 2007). For this research, I was interested in the subjective, individual views and opinions of student PAs working with other students in practice settings and other qualified healthcare professionals' opinions about this role. Although it could be argued that this was not a generalisable study, it may, however, be relatable to other practitioners as it will likely unfold personal experiences and individual perspectives. A quantitative paradigm would be more generalisable but would not provide the detail of the lived experience, perceptions and observations of the evolvement of the role (Cohen, Manion and Morrison, 2017).

3.6 Researcher pre-conceptions in interpretivist research

Researcher bias is one of the most common pitfalls of qualitative research and with the advantage of background knowledge

Researchers may make assumptions and prompt questions and answers rather than establish what the participant really thinks (Broom and Willis, 2007). Mitigating this can be managed through reflexivity which acknowledges that a researcher should openly disclose themselves and understand their influence by opening this truth to the light (Cohen, Manion and Morrison 2007). The researcher can therefore manage pre-

conceptions through considering their stance and place in role relationships, balancing distance and that level of involvement in the research and using reflexivity (Christenson and Eyring, 2011).

Cresswell (1998, p 20-22) suggests there are several stages to evaluate a good qualitative study. These include: multiple methods and rigorous data collection; research framed around the assumptions for qualitative research; enquiry as the major feature linked to a methodology, a single focus used rather than a hypothesis; verification criteria which are laid out with rigour applied to the report; readers who can imagine being in the situation; analysis of data that is critiqued at a number of levels that engages the reader's attention. For this research, the single focus was the journey of the PA and whether they are a 'disruptive innovation' both by themselves and other practitioners. Their journey was observed through 4 different methods which were not all undertaken by me as the researcher to help minimise researcher influence.

3.7 Philosophy and approach.

This thesis aspires to reflect critically on a research journey through the Professional Doctorate in Business Administration to realise the rationale for both my research questions and the methodological approach for the study. I wish to reflect on the impetus that has steered my research and to be honest and open about what drives me to undertake this research in the hope that this will ensure objectivity and minimise influence.

I am a qualified nurse and academic who has worked across a number of professions in healthcare and I have discovered that there are many dimensions to the contributions of different professional groups and particularly the value that they can add to a multi-

professional team and to a future workforce. I have actively observed the responses to change that can develop when something 'new' is introduced into the workplace and I question what is required to overcome these challenges and understand the commonalities of different viewpoints.

In my Professional role I have developed an interest in 'new models of healthcare' which corresponds with current trends in healthcare re-design (DH, 2011, DH 2012a, DH 2012b, NHS, 2014, NHS, 2015, Kings Fund, 2015, HEE, 2015, NHS AND PHE, 2017). This developing knowledge and interest evolved from being an early adopter of prescribing rights for nurses in which there were numerous barriers to the early implementation (Bradley and Nolan, 2007). I have been challenged to reflect critically and acknowledge the importance of remaining open minded in a new circumstance (Ortlipp, 2008). In my current role, I am actively engaged in health and social care workforce development creating new ways of working through partnerships and curriculum development (HEE, 2015). I have been involved in many diverse journeys and pioneering new practices that are innovative and disruptive and I have both a strong passion and a belief that these new roles are pivotal to the future of high quality and cost-effective healthcare (DH, 2011, NHS, 2015). I acknowledge that my beliefs are not without bias, but my beliefs are stemmed from observation throughout my career. In light of many observations over a number of years, it would be reasonable to assume that embedding new roles can be complex and it would be pertinent to explore what these challenges are for organisations in order to help them be prepared, ready and able to accept, embrace and implement new practices (Kings Fund, 2015, NHS, 2014, HEE, 2015). I have also become very interested in the work of Simpson, (2014) and similar leaders who have a strong focus on leading with values and creating a culture of nurturing creativity and

value in the workplace. This research journey has helped me reflect on the most valid and sensible approach to finding what needs to be known. During the doctoral journey I have developed ideas and constructed new knowledge about the type of researching professional that I wish to be. I started to understand what a reflexive practitioner was by reading an article by Ortlipp, (2008) which describes how researchers must acknowledge their own bias to remove subjectivity and create objectivity through critical thinking. I also began to learn about the power of knowledge and how to construct this and use this specialist skill within my own role and workplace (Blackler, 2002; Choo, 1996). In addition, I have reflected on my career both in clinical practice and as a healthcare educator through the use of reflective practice which I have always used to underpin and evaluate the work that I have undertaken as a 'clinical practitioner' in the workplace in order to maintain high quality patient centred care and to critically analyse how to improve practice (Ghaye and Lillyman, 2010). Part of this reflection has been to consider my own assumptions of different roles in healthcare and how I interact with different healthcare professionals.

As a healthcare educator, I have a strong passion for preparing practitioners to undertake their clinical roles to the maximum effect to support safe, confident, competent practitioners and to protect public safety (NHS, 2014). Throughout my working life I have been a nurse, medical sales representative, marketing executive, practice nurse, nurse practitioner, senior lecturer, principal lecturer, Head of Academic Unit, Associate Head of Institute for business and workforce development; Head of Allied Health and Social Science, Deputy Head of the Institute for health and more recently Director of Strategy and External Engagement for healthcare and now the Dean of Heath, Sport and Bioscience. I bring a wealth of knowledge and experience to the

study. I have undertaken a variety of roles, many of them externally facing where I have constructed knowledge and developed my thinking experientially (Kolb, 1984), each part of the journey adding new knowledge to each role I have undertaken and adding new observations and analysis and using the power of that knowledge to be confident in my place in the organisation (Nonaka and Konno, 1998). By maintaining a research informed approach to my practice, I have used strong evidence to support my practice through the use of clinical evidence but I have also learned the value of observation, interaction and discussion to form a deeper view of what people really understand and believe.

Engaging with Doctoral research as a practitioner brings together the relationship between ideas, concepts, theories and their application to professional life and combines the development of the highest academic level to bridge a gap between theory and professional knowledge (Drake and Heath, 2011). However, with the practitioner central to the research the importance of keeping a 'critical distance' is one of the many challenges I face as a researcher and will challenge my own personal journey as an active participant (Ortlipp, 2008, Drake and Heath, 2011).

Ortlipp,(2008), argues that the transparency of a research journal might demonstrate to the researcher good reasons why they might want to steer away from standard quantitative methods that do not allow for the personal and professional investment that I have in this project. This is a fundamental factor as I explore the potential blocks to organisational change and explore in-depth challenging questions based on my own strong values and beliefs. I aspire to challenge an identification of 'core values' and the need to honour them through trusting intuition and taking action on those instincts

with courage to make change happen (Simpson, 2014). This is a fundamental reason for ensuring critical reflection and establishing a critical friend to help examine, acknowledge and explore this self-disclosure.

In order to answer my research questions, I modelled the theoretical framing of this thesis around the concept of 'innovation and change' but with the perception that embedding new roles and changing a marketplace can also be described as a 'disruptive innovation.' Innovation and change has been discussed in the business world for a number of years now alongside methodological approaches such as narrative inquiry, ethnography and more recently organisational ethnography which has become increasingly popular for researching the culture of organisations and exploring the barriers and blocks to the facilitation of change (Neyland, 2008).

3.8 Why Narrative Inquiry and Ethnography

The early work of Mead suggests that to uncover the attitudes of a community, we have to become social objects who can place themselves into the roles of other people and by doing this symbolic interactionism can occur which evolves from interaction and from communication with one another (Crotty, 2008). It is this dialogue that allows the researcher to be aware of the feelings, attitudes and perceptions of those they study to ensure effective interpretation of meaning (Crotty, 2008). One of the characteristics of ethnomethodology and symbolic interactionism is that it will appeal to the educational researcher as the research can be situated in the classroom where much of the active discussions take place (Christenson and Eyring, 2011). This does reflect the work that took place in a simulated classroom environment and in work/office environments.

However, narrative inquiry was more appropriate for in-depth discussions with both PAs and stakeholders/other professions.

3.9 What is Narrative Inquiry?

Narrative inquiry is a means of story-telling and helps to make sense and meaning to real lived experiences and can be a means of capturing memories from the past to help inform the future, particularly as people generally do like to listen to stories and people's lives are embedded in stories/narratives, linking back to childhood tales that children learn and shape their lives from (Bochner and Hermann, 2020). It has even been suggested that likening stories is an essential human need, in the same way that food is essential to our existence, which shows how essential the importance of this narrative can be in sustaining lives (Clandinin, Caine and Lessard, 2018) Narrative inquiry is also collaboratively enacted and negotiated with those we are connected with, sometimes described as 'interpreting animals' who work their way through life to find something good and meaningful understanding the psychology of how humans are shaped as an interpretative science where the researcher is part of the process and may want to give something back to their participants (Bochner and Henman, 2020). There is also a relational link, often described as the relational ethics of narrative inquiry that looks to the importance of those who tell the stories and those who listen offering a respectful observance that acknowledges how listening might influence and shape the destiny of both parties (Clandinin, Caine and Leassard, 2018). This really resonates with my aspirations for this research to have a meaning that will influence and support the development of a new role, through the relationships of those who are crafting their way through a new career, with those who are trying to understand the role and

ultimately seeking to establish how this journey of researcher, PA and stakeholder might shape the future of the physician associate as a result.

3.10 What is ethnography?

Ethnography requires access to the field with the researcher an active participant gathering data and observing and analysing that data (Neyland, 2008). Ethnography has its roots in anthropology and deals collectively with people in studies that involve organisations, management, sociology, culture and health (Neyland, 2008 and Angrosino, 2007) and therefore fits well with my research aim and questions that span an interest in business models and change management in the landscape of healthcare. Atkinson, *et.al,* (2007) suggest that this methodology sits in a diverse range of worlds adopted predominantly by the social sciences. Bloor, 2007, suggests this is a boundary spanning activity. In ethnographic methodology, the researcher is often a participant as the methods often requires the observation of groups and communities (Neyland, 2008; Saunders, Lewis and Thornhil, 2011 and Frost, 2011). This resonates with my desire to participate in this research which is also a common feature of ethnography as a methodology (Neyland, 2008). However, for this research, the observation of the simulated scenarios was achieved through video footage to ensure minimum disruption to the participants undertaking a clinical scenario. I considered and critiqued grounded theory as a potential methodology as it has roots in ethnographic research which widen the debate around culture and practices but considered ethnography, with natural inquiry a more closely designed strategy for the research, with a particular interest at the time in organisational ethnography which focusses very closely to the research question (Neyland, 2008).

Ethnographic research can also use a narrative approach which appealed to my notion of feeling there is a story to be told as this methodology is being used to understand day to day activity. In this study, the observations of simulated scenarios were complimentary to the narrative inquiry in interviews which is why both approaches were used. There are many ways that ethnography can be used and as the focus of my research developed, visual ethnography as described below, was the means for capturing the observations.

3.11 Visual ethnography

An alternative way to engage with the field of ethnography is to video or take photographs (Neyland, 2008). This technique was used as one of the methods for this study as this research includes a video of PAs and other students undertaking simulated activities. In this instance consideration was given to how my presence might disrupt an otherwise natural environment of clinical teaching and that through video analysis, as a researcher, I could observe from a distance. Visual anthropology has a long history in field settings and over time visual ethnography also evolved in an attempt to establish an opportunity to negotiate interactions (Neyland, 2008) but equally it has been argued that this can be left open to research interpretation; suggesting that ethnographers should not assume that a video is telling the exact story in that organisational settings (Neyland, 2008). It is also imperative that the participants are aware and agree to being videoed. Video data can create problems for analysis, in terms of what the researcher wishes to capture but equally one of the great values of video recordings is the ability to re-watch allowing close concentration and attention (Neyland, 2008). Video analysis in this instance became the observation of symbiotic interactionism between a group

of different professionals in a simulated clinical activity to ascertain symbolic meanings that help explore the relationships between a PA and other healthcare professionals.

3.12 Narrative inquiry and Ethnography in healthcare research

Bloor, (2007) describe four themes that have been identified in ethnography for health and medicine, starting with symbolic interaction within the medical workplace; this is followed by socially constructed professional medical categorisation; then the sociological experience of illness and the body and finally the challenges of post - modern fragmentation and policy influence. Early ethnographic studies in health were based around the sociology of occupation, work, and deviance, followed by a few feminist studies (Bloor, 2007). However, ethnography rich studies do occur in health and medicine often to secure evidence of good or poor performance and many of the medical ethnographic work is in relation to imaginative responses to the influences of policy and there are concerns that ethnography is seen as discursive practice which through reflexivity helps to support the theoretical relevance of this methodological approach in this field (Bloor, 2007).

This research uses narrative inquiry and ethnography as the methodological approaches and data was collected through an understanding of the current literature linked to observations from data from video footage, focus groups and semi-structured interviews to establish themes (O'Leary, 2013). Narrative inquiry and ethnography were specifically chosen because of the potential to listen and observe and hear a story to understand the potential to reveal the culture of organisations, communities, and people (Neyland, 2008; Angrosino, 2007; Saunders, Lewis and Thornhill, 2011). This is very specific to the research proposal which seeks to examine, enable and facilitate

active discussion related to the culture of healthcare practices and the responses to implementing change. The flexibility of narrative inquiry and an ethnographic approach assists the researcher to widen the critique and debate around cultural practices as a recognised methodology for understanding the complexity of organisations such as healthcare in both acute and primary care settings (Bryman, 2008). It is also used in a variety of professional groups to explain culture and further unpick an understanding/symbolism of the workplace to support large- and small-scale changes for improvement (Neyland, 2008). Even in the early 1960's ethnographic studies in health observed the socialisation of practitioners and were based largely on professional groups such as medical practitioners to ascertain, for example, the interactions between the doctor and patient relationship (Bloor, 2007). Data from ethnographic studies informs the researcher of social and cultural influences in situations, giving real world information on individuals, groups and communities of practice (Spradley, 1980, Neyland, 2008). Findings can claim resonance across organisations if environments are similar and therefore provide a greater understanding across professional boundaries and groups (Morgan and Drury, 2003). Over the last seven years, the number of physician associates moving into the workplace has increased substantially (Drennan, *et.al*, 2014) and has prompted the need to explore organisational readiness for implementation. Therefore, for the role to become successfully utilised in the workplace, it is imperative to listen to stories that explain that journey and observe how physician associate students handle their relationships with other practitioners, leaders and managers. It will also be important to understand how other professional groups tell their stories on how they recognise the role, understand the relevance, scope of practice and support required to develop

the role. In addition, this research aspires to understand whether physician associate students and stakeholders will challenge leaders and managers of healthcare organisations to understand how to apply this new role productively and pro-actively in their workforce plans.

3.13 Final reflections

Innovation is a term repeatedly used in healthcare and it has become common place for organisations to be asked for large scale transformation of services and new delivery models (Kings Fund, 2015; Health Foundation, 2014 and NHS, 2015). My own stance is that the role of the Physician Associate is innovative; it is new, and it offers a different level of practitioner in the workforce. I regret that I did not research the role of the prescribing professional at the time of its inception or explore innovation and change and the evolvement of this role which is now very accepted as common place practice.

Another area of influence that I must also acknowledge is that as a nurse who had been working at an advanced level of practice and an academic who has been involved in leading this development and writing curricular for the Physician Associate programme, I immediately identified that the level of detail in PA training would have supported me tremendously as a nurse working at an advanced level. I probably would have applied to do this course if it had been available during my clinical years. One of the main passions for moving into an academic role has always been to support high quality education that is transferable to the workplace and I identified a new opportunity from this role.

If I am truthful, I really do hope that this role has a chance to embed and be maximised to support future healthcare delivery as I genuinely believe that Physician Associates

have the potential to make a difference and add a new dimension to future solutions in healthcare delivery.

When I first undertook this doctoral study, I aspired to look at many different areas of clinical practice and new roles to the extent that I would have been unable to realise these aspirations. I discovered the level of deep critical analysis that research requires and have therefore been able to refine my thinking.

As an educator, I have been an ambassador of new roles in healthcare having led the development of pharmacist independent prescribing, advanced clinical practice and the physician associate programme in my local University. Initially, I wanted to explore all 3 of these roles but discovered that this was too ambitious which is why I refined my research to a role facing new and more immediate challenges. I have an interest in the role of the Physician Associate as this is a pathway I would have considered for my own career and because it has at times been a 'disruptive' new role. Having led the development of this complex programme which follows a 'medical model of training' over an intensive two year post graduate programme of study, I wanted to understand and observe the experiences of early students on this programme. I was interested to explore the student journey and how this new role in practice is accepted and embedded. As mentioned previously, it was while I was developing the PA programme that I also undertook the programme of study called 'innovating health for tomorrow'. In this stretching and enlightening programme of self -discovery, I discovered new knowledge around business models, organisational culture and 'disruptive innovation'. This combination of events led me to want to observe the adoption and acceptance of this new role in clinical practice through observing the journey of these new healthcare

professionals as they trail blaze their way into the workforce. I am also influenced by personal experience of being an early 'nurse prescriber' and I do make some assumptions that the introduction of this new role will not be without problems and that the new role of the Physician Associate will 'disrupt' the normal working patterns of existing healthcare professionals and teams- they may not always be welcomed. I acknowledge that the personal drive for this links to earlier perceptions in change management and nurses causing 'disruption' by being trained to prescribe and links to my own personal experiences in what is now a very accepted role 16 years later. However, it also made me realise that links to business models and LEAN thinking might also add new dimensions to the approaches that could be taken.

In many discussions and with guidance from my Director of Studies and supervisor from the Business school, I began to understand where and how to develop my research and have concluded that a part narrative inquiry and ethnographical approach would be the preferred methodology with listening and observation the catalyst for understanding the culture of this new profession and the organisations that they will work in (Neyland, 2008, Wilson, 2010, and Myers, 2008). I also want to observe the leadership systems that support this new role to understand the complexity of the culture of organisations (Kings Fund, 2015). I aspire that through this doctoral journey, I will uncover 'new knowledge' that will support and enhance the new role of the Physician Associate in the early adoption of new ways of working and that I will be an early researcher to this uncontested field.

Chapter 4. Data Collection and Data Analysis.

This chapter will address how participants were selected for the study and what methods were used to answer the research questions. Staff and students were recruited from a University setting and from a range of professional groups. An overview of the research design, methods, sampling strategy and data collection will be explained in this section.

4.1 Research Design

To address the research questions, I deliberately selected a qualitative approach using narrative inquiry for the semi-structured interviews and focus groups and ethnography for the clinical scenarios, incorporating where possible the 10 sensibilities from Neyland's (2008) approach to organisational ethnography. The strategy (Sensibility 1) was to observe Physician Associate students in their interactions with other students from different professions through simulated clinical scenarios to observe what challenges this may incur and how they might deal with them. These scenarios were then followed up with narrative inquiry with open ended questions to Physician Associate students and to clinical academics from different professional groups. The use of reflexive story telling for acquiring new knowledge was determined through the acquisition of subjective data from individual opinions and views of participants and through the observation of their interactions (Sensibility 2). The location and access (Sensibility 3) for data collection required a great deal of consideration as Physician Associate students undertake clinical rotations across numerous different placements in both primary and secondary care (DH, 2012). Researcher access to NHS organisations

presents several ethical challenges related to patient and staff confidentiality and to sample this effectively across these disciplines would have required access to many different sites. To achieve the required level of detail would have surmounted to the requirement for several ethical applications from many different organisations. Therefore, in order to mimic a range of different types of clinical environment, the use of the simulation centre at the University which the students were very familiar with, ensured a broader range of scenarios simulated at different stages of a patient's journey, thus removing the need for the emergency department or rehabilitation centre for example as location sites. The students were also working in a familiar and non- threatening environment with a clinical tutor that they were familiar with and therefore did not find the situation uncomfortable and could continue with their studies in what was part of a usual teaching day. For students from other professional programmes, this research offered an opportunity to be involved in a multi-professional workshop which helped to enhance their own clinical development and understanding of a new role. To be able to gauge the views of other healthcare professionals, one option was to approach staff from the University who were also a qualified healthcare professional and would also allow all data to be collated from one place.

Narrative Inquiry and ethnographic research require the researcher to be close to the field and as I had been immersed in the development of the programme, it was also important that I had a 'gatekeeper' in the field to manage potential influence and subjectivity. For this research a clinical practitioner, that the PA students were familiar with, was chosen to undertake the clinical scenarios and was also present to take field notes for the focus groups. The use of a gatekeeper also ensured robust data that could be verified by another person (Sensibility 4). At the point of data collection, I had been

immersed in the role of the PA for 4 years and the students who agreed to participate were towards the end of their studies; this helped to support 'thick description' rather than a snapshot of the role (sensibility 5). The use of a 'gatekeeper' and a critical friend, my DBS supervisor also helped to support sensibility 6 which required an attention to healthy scepticism, a few academic debates and note taking in the field (Neyland 2008).

To manage the research questions, the original strategy was supplemented (Sensibility 7) to support being able to triangulate different types of data. The triangulation of data in a qualitative study allows confirmation and verification of information that will add reliability to the approach (Low, 2007). Consideration was also given to the how the thesis would be written to ensure the informants of the study would be completely anonymised and protected from any repercussions from open and honest dialogue (sensibility 8). Sensibility 9 was covered through full ethical approval and once data was collected, as a researcher, I removed myself from the field (sensibility 10) (Neyland, 2008).

4.1 Overview of 4 methods of data collection

Four methods of data collection were used to provide a detailed analysis of the research questions. Each question has a specific method or methods applied which are then subsequently analysed. This is set out in the table below with further explanation of the choice of each method explained individually in more detail below.

Table 1 Methods used for Research Questions.

Research Questions	Method	Analysis
1.What perceived challenges exist to effectively implement Physicians Associate in the NHS? The question will be answered by seeking views from a range of stakeholders as to what challenges they perceive in effectively implementing Physicians Associate in the NHS.	Semi-structured interviews PA focus group Student reflections	Examining a range of data from different sources by bringing together the views of qualified stakeholders (Professionals) and PA students explaining the perceived challenges from different angles. For academics from a range of professional backgrounds, this would be about where they see the role working in practice. For students, this would be understanding what students might perceive about their new role, also taking into consideration that they will be new to a healthcare environment.

2.How might Physician Associates contribute to the evolvement of the NHS and other healthcare organisations? This question will consider how different professional groups interact with one another and whether this interaction is a 'disruptive innovation'. Data from future PAs who are currently studying for the role will be sought to understand how they could contribute to the evolvement the role.	Semi-structured interviews PA Focus group Student Simulation scenarios	Gaining a range of perspectives from different professional groups on how a new role may be perceived in the workplace and what is the organisational readiness for this. Understanding what students understand about the challenges they may have as a new professional in the workplace. Explaining a range of people's views as to what it contributes, how they believe it will evolve and whether they believe it is having a disruptive impact. Is the implementation and embedding of a new role disruptive or an evolvement over time? How is this perceived by both staff and students? General perspective from PA students about where they fit into a multi-professional team and how do they view their role and their alignment with other practitioners. What key factors became apparent through observing students from different professional groups working together in a clinical scenario. Do they understand one another's roles, are they comfortable working together

Research Questions	Method	Analysis
3. How can Physician Associates be supported by stakeholders to effectively contribute to the NHS through their role? Recommendations as to how the challenges identified will be developed by taking views from a range of stakeholders. These recommendations are designed to support the successful implementation and embedding of PAs into the UK healthcare system.	Semi-Structured interviews PA focus group	Make proposals on how PAs could be supported based on the data and other results could be put forward. Do professional groups or students offer reasons for why it may be difficult to embed a new role? Is there a difference in challenge recognition between the experience of qualified professionals and the ambitions of a student embarking on a new and exciting career? Are there any commonalities in the responses from both practitioners and student views that form common themes that could be used as a basis for recognising and confronting the challenges to embedding a new role?

4.2 Methods

4.2.1 Method 1 - Focus group with Physician Associate students.

Focus groups were used to organise a planned discussion that would elicit the observations, stories and views of physician associate students in relation to their role and their experiences in the workplace. The focus groups were designed to allow the participants to answer open ended questions in an interactive setting where ideas and thoughts could be freely discussed. From the three Physician Associate students recruited to the study, only 2 were able to attend the focus group. The focus group was chosen to support the research questions to establish the challenges that the PAs had encountered during their journey through the programme. Focus groups offer opportunities to study attitudes and experiences in a relatively 'naturalistic' environment and this type of group setting works as health topics are often readily discussed in the workplace, they are also a good source of information to discuss views on health services (Green, 2007).

Suter, (2000), suggests that focus groups support the ethnography of communication through participant observation and that this, therefore, provides another method for observing communicative phenomena.

I facilitated the focus group and a number of open-ended questions were used to allow the PA students to talk freely about their experiences and to consider their journey through the programme and the challenges they may have had in the different clinical settings they had rotated through. This was quite inspirational to note and hear as they were keen to tell the story of how their journey had evolved in different ways and how they had navigated themselves into understanding where they might 'fit' most

appropriately. The focus groups were framed around the theoretical lens of 'innovation and change' and any perceived potential disruptive impact in how they were received in practice by understanding the experiences, challenges, barriers and enablers for the role in a changing health and social care environment. To answer the research questions, the focus groups were designed to relate to the theory of innovation and change and the concept of 'disruptive innovation' and evolving new roles. Participant's perceptions and consideration to their personal experiences were sought along with an understanding of where they saw their role in the workplace and how they aligned with other professional groups. Thoughts on the culture of the organisation in which they had been placed were explored and through analysis could be used as a potential catalyst for influencing the future of healthcare provision. In addition, it was hoped that thorough exploration would challenge the students to discuss whether they saw themselves as entrepreneurs, innovators or disruptive innovators and to unpick their journey through the programme and into new roles in healthcare organisations.

The focus groups were all digitally recorded to allow transcription and coding of the data.

4.2.2 Method 2: Semi-structured interviews with healthcare professionals.

Semi-structured interviews were designed to observe the views of a few academics who were also qualified healthcare professionals with the addition of a technician who works regularly with students across all the professions who could also potentially provide insightful data. Semi-structured interviews in natural inquiry, but originally in ethnography, support the notion that the researcher may already have a rapport or

relationship with those being interviewed and this helps to define natural inquiry over other types of interview. It allows an open honest focus on cultural understanding with storytelling where the researcher aims to understand what they know and why they know it (Clandinin, Caine and Lessard, 2018). For all 5 of the interviews, I already had a working relationship with the participants which allowed for freedom of academic debate and discussion.

I undertook the semi-structured interviews and used similar open-ended questions to those posed to the PA students.

In total 5 interviews were completed, all of which were digitally recorded and transcribed.

4.2.3 Method 3: Multi- professional clinical simulated Scenarios

This method involved direct observation of physician associate students in multi-professional simulated clinical scenarios. Four different clinical scenarios were used in a university setting of simulation laboratories to provide a 'real life clinical scenario' facilitated by a clinical tutor and involving all participants at different levels. The participants that took part were: three physician associate students, four paramedics, two physiotherapy students and one nurse. These multi-professional scenarios aimed to support the research question through understanding how different healthcare professionals would interact in a simulated clinical scenario. Each scenario involved a different healthcare professional at different stages of the patient journey. The physician associate students were involved in all four of the scenarios, with the paramedics involved in three, the nurse also in three and the physiotherapy students in two.

Clinical simulation allows students to safely practice real life clinical scenarios using high-fidelity mannequins or acting patients and is an excellent learning tool for gaining confidence and competence. It allows students to practice in a safe place where learning can be achieved through working through a problem-based learning case study where they can freely discover how to assess and diagnose without causing any real harm as the scenario is fictitious. This type of learning tool allows the students to feel supported in understanding that making mistakes is a normal part of learning and will therefore prepare them for safe and effective management of real-life scenarios.

The scenarios chosen ranged from acute emergency admissions through to managing the patient journey and rehabilitation ready for discharge. In total four scenarios related to asthma, diabetes and cardiac care were undertaken.

The scenarios were all video recorded using the discreet cameras also used as a teaching tool in the University and the students were all able to review the videos as part of their learning as well as participating in the research. The Physician Associate students were particularly encouraged to do this before embarking on method four, which was their personal reflections on the experience. The value of this method did prove to be a challenge to specifically answer the research questions as the scenarios themselves did not address the questions but did give insight into working inter-professionally. The purpose and value was the ethnographic observation of the interactions of four different professional groups who were not accustomed to working together which resonates with the findings of the other three methods, seeking to explore perceptions and understanding through narrative enquiry of what is needed to embed new roles in healthcare. Although it was difficult to see how these scenarios

could answer the specific research questions, it was my own personal observations that were fed into the overall findings, particularly from an interprofessional perspective of understanding different roles, the development of the PA role, the professional identity and characteristics of each discipline and the dynamics and nuances between different professional groups.

Students on the MSc Physician Associate programme undertake 1600 hours of clinical practice in rotations across different specialities in healthcare organisations. Observing the dynamics of multi-professional teams across a range of these rotations in real life clinical practice could be challenging and compromising and would need to focus on a specific area which would then be relevant to that area, for example, general practice, or acute medicine, mental health etc. However, observation of simulated practice scenarios allowed direct and structured observations across random practice areas which would have been harder to replicate in real practice time in an NHS setting. Simulation is also a more controlled environment and less stressful for students who were able to practice in a 'safe environment' which also facilitated the ability to allow immediate 'reflection on action' as they progressed through the problem-based scenarios. Consideration was given to observing objective structured clinical examinations (OSCES) as a method but as these are usually conducted under examination conditions, it was felt that this would be more stressful for the students and therefore less appropriate. For method three, it was agreed that I would be a non-participant observer as the scenarios were better led by a clinical tutor from the programme who the students were comfortable and familiar with. As a non-participant observer, I observed the video footage rather than partaking to allow the students to

participate more freely in their normal environment without feeling that I was watching them.

By adding students from other professional groups to the scenarios, the study allowed observation of their working familiarity with different professional groups and their relationships as well as creating a similar environment to real life practice.

4.2.4 Method 4: Reflections of PA students undertaking simulated activity.

The physician associate students were invited to look back on the simulated scenarios and write a reflective piece on the experience.

The PA students agreed as part of their participation and consent forms to discuss their experiences following their participation in the clinical scenarios. Two of the three participants completed this reflection which forms part of the data analysis. Reflection is a useful tool for all practitioners and is regularly used in healthcare programmes. Reflection helps with continual professional development and can be used in groups or with individual practitioners as a learning tool and an opportunity to explore what can be learned both positively and negatively from any given situation (Ghaye and Lillyman, 2010). In this method, the students had had time to reflect on both the scenario and the focus group, adding any additional thoughts that might be relevant or important to them.

4.3 Data Collection

These 4 methods were chosen to enable triangulation of information from a range of perspectives that included the physician associate students, other students from professional programmes and qualified health care professionals working in higher

education. The data brings in-depth qualitative information from listening to and observing the opinions of a range of professionals both verbally and non-verbally through these 4 different methods to answer the research questions.

4.3.1 Sampling strategy.

The study used a purposive sample to select informants who could address the research question (Hughes 2007). Potential applicants were identified from several existing healthcare programmes within the University. To create a simulated clinical scenario, students were approached from the PA programme and from nursing, paramedic science, physiotherapy and occupational therapy programmes. This purposive sample was designed to create an inter-disciplinary approach to the scenario and allow observation of different groups of healthcare professionals interacting with one another. This was achieved once permission was obtained from the Head of the Institute allowing access to the field. The course leaders of the programmes were approached, and they then sent an email to the students on their programmes, outlining the research information and asking for volunteers. On two occasions, I was invited to speak to students directly about the research and for the other professions, the course leaders undertook this on my behalf. Recruiting to the study posed more problems that I had first anticipated because students on professional programmes are also often in practice for 50% of the time as well. Combining a date to include different professional groups in the university at the same time took a great deal of planning, predominantly to avoid exam clashes and practice clashes. This did affect the overall recruitment to the research as I became reliant on the goodwill of some of the students to come in on what was an official day off for them. However, I was encouraged by the

enthusiasm of those who agreed to take part who saw this as a useful learning opportunity alongside a research project. The final sample consisted of three Physician Associate students, four paramedic students, one nurse and two physiotherapists. Despite, several attempts to recruit students from occupational therapy, I was unable to achieve this for reasons already mentioned. However, there was enough variety within the group to allow the simulation to go ahead.

For the wider opinion of qualified healthcare professionals, this was again a purposive sample where professional teams from a few different disciplines were approached to partake in the study. Staff were approached from all the healthcare programmes and five came forward to be interviewed. Time constraints and willingness to take part were challenges in recruitment. The final sample was from: medicine, midwifery, nursing, paramedic science with an extra but potentially insightful participant from the technical team.

4.3.2 Inclusion and exclusion criteria for sampling.

Consideration to the size of the sample related to the interpretivist/qualitative approach, in which individual in-depth accounts rather than large quantitative data sets were sought (Finlay, 2011) With this qualitative approach I was mindful that with too many participants, there would be the potential for large data sets that could pose a problem to handle effectively (Finlay, 2011).

Based on this, for the clinical simulation, I looked to recruit up to four participants from each discipline; in this case specifically to ensure they could be actively involved in one or more scenarios. I also deliberately selected second year Physician Associate students as the first year of the programme is theoretical and the second year is clinical, and I

wanted the participants to have had real life clinical practice experience. Therefore, first year PA students were excluded from the sample as they would not have had enough exposure to the role in a clinical practice setting and would be more vulnerable as participants with less experience of the course. The same principles applied to the other professional groups in that they were selected as second and preferably final year students who had had clinical practice experience in a range of areas.

For the semi-structured interviews with qualified healthcare professionals, I did not exclude any specific professional group but did have to rely on the availability, skill and willingness from each area. For these interviews, I managed to recruit a: Doctor, a paramedic, a nurse, a midwife and a technician which would allow a range of opinions that would add value to the research question.

4.3.3 Participant recruitment.

A participant information leaflet was designed to give participants all the information they needed to partake in the study.

For the Physician Associate students: the participant information outlined the purpose of the study and their involvement. For this group, they were asked to participate in a few clinical simulations, watch the video recordings of the scenarios they had been involved in and write a reflective piece about the experience. Finally, they were asked to participate in a focus group about their role. They were given four weeks to consider what was being asked of them and to ask any additional questions before taking part.

For the students from other professional groups, they were also sent a participant information sheet, outlining the purpose of the research and asking if they would be prepared to take part in a multi-professional simulation. They were also given four

weeks to consider the proposal and consider if they had additional questions before taking part.

For the academics and technician, the same applied. They were sent a participant information sheet outlining the research and were asked to partake in a semi-structured interview about the role of the Physician Associate. They were also given four weeks to consider this before taking part.

I did also consider what approach I would take if I had over recruited to the study and how I would manage this sensitively. I had considered with the clinical tutor that more scenarios could take place but not as part of the research in order to manage the data. However, this was not a problem as it was quite difficult to recruit enough participants. The table below shows the different practitioners involved at each stage of the study.

Table 2 Overview of Methods and Participants.

Method	Participants	Professional Discipline	Methodology
One to one semi-structured taped interviews.	• Technician • Senior Lecturer • Principal Lecturer • Professor	• Clinical Skills Technician • Paramedic • Midwife • Nurse • Doctor	Narrative Inquiry. Listening to the stories and experiences of this role in relation to their own discipline.
Focus Group.	3 x MSc Physician Associate Students	**2nd Year Physician Associate Students** who had completed most of their theoretical training and had completed several clinical placements with NHS organisations.	Natural Inquiry. Listening to the stories and experiences of this role in relation to their own discipline.

Method	Participants	Professional Discipline	Methodology
Four Simulated Clinical Scenarios	Students from a range of professional courses: • 1x BSc (Hons) Adult nursing student. • 2x BSc (Hons) Physiotherapy Students • 4x FdSc Paramedic Science students • 3 x MSc Physician Associate students	**Facilitated by a Clinical Educator**: • Nursing • Physician Associate • Paramedic • Physiotherapy	Ethnography (Visual Ethnography) Observing and translating behaviours using Transana.
Reflective analysis of the clinical scenarios and their journey to date	2 x MSc Physician Associate Students	**2nd Year Physician Associate students** who had completed most of their theoretical training and had completed several clinical placements with NHS organisations.	Natural Inquiry, capturing the narrative of their experiences of the clinical scenarios and how this relates to their experiences in a new role.

4.3.4 Ethical considerations and ethical approval.

An application for ethical approval was put forward for proportionate review through the University of Worcester ethics committee. Full approval was granted on 11th December 2017 following a re-submission request regarding a few revisions related predominantly to participant information, consent and additional clarity about the research. This was revised as requested and met with final approval from the ethics committee. The ethical approval letter is attached as HSREC CODE: SH17180011.

All participants were fully informed about the research and consented to participate in the knowledge that they could also withdraw at any time. There were no other perceived ethical considerations as the research was open, honest and confidential in protecting the anonymity of the participants.

The physician associate role was observed and narrated through simulation, focus groups and semi-structured interviews in a University setting. This provided less risk in terms of organisations as all participants were familiar with the academic environment and were encouraged to use inquiry and contribute to the research through their participation (Thomas, 2009). As there were no plans for any covert observations, participants were assured that this was an overt study (Neyland, 2008).

Therefore, there were no ethical issues or major challenges anticipated other than ensuring storing and managing the data confidentially in line with data protection requirements.

4.3.5 Obtaining written consent.

Once all the participants had reflected on the four weeks to consider their involvement in the research and had been offered every opportunity to ask any questions related to their involvement, a consent form was given to each participant to sign. This was done prior to the simulated scenarios and before each semi-structured interview which allowed a review of their involvement and chance for any additional questions. The Physician Associate students signed a consent for all three of the methods that they would participate in, and the additional students signed a consent form for their involvement in the clinical simulation. The University staff signed a consent form for their agreement to take part in the semi-structured interviews. In total, there were three different consent forms that were signed and then stored in a locked cabinet.

The entire ethical approval and consent and participant forms are appended to this thesis.

Access to participants was fundamental to the research and despite the purposive sampling strategy, participants were made aware that their participation was entirely voluntary before they agreed to partake and the full benefits of the research, their rights to anonymity and withdrawal, publication plans, time frames and risks were all explained to them (Thomas, 2009; O'Leary 2007).

4.3.6 Participant safety and risks to the data.

This research carried relatively low risks because of the overt nature of the narrative inquiry and observation (Neyland 2008). Implications that could arise from legally sensitive or unsafe practice were considered and reflected upon as part of the research

design (Gilbert, 2004; Gomm 2008; 2007; Gray, 2013). Students on professional programmes are already aware that a duty of confidentiality can be overruled in very exceptional circumstances if there is a risk of harm to an individual (University of Worcester ethics policy). The use of a simulated environment enabled the research to be low risk by removing any real risk to patient safety and adding the opportunity to reflect on action. There were no issues or problems encountered or noted during the data collection.

When conducting small scale research in a named University where the numbers are small, it was essential to ensure participant safety and anonymity and for this research, it was particularly important to ensure participants could not be identified (O'Leary, 2013). In order to be rigorous in protecting the identity of the participants, the only time that real names were used was in the consent forms that were signed by participants and these were securely locked away. For the clinical simulations, two CD's were produced for transcribing and for analysis with Transana, which will be discussed later. The only people who had access to this were the University technicians who supplied the CD, who by the nature of their role would keep such information confidential and the clinical tutor involved in the study to which this would also apply. The CD's, one to myself and one to the clinical tutor were also securely locked away so that participants could not be recognised. The filming using camera would then be deleted by the technicians.

In both the semi-structured interviews and the focus groups, no real names were used, and a pseudonym was used.

Table 3 Pseudonyms used in Interviews, Focus Groups and Simulation.

Participants	Pseudonym
Physician Associates	PA1, PA2, PA3.
Nurse	N 1
Paramedics	P1, P2, P3, P4
Physiotherapists	Physio1, Physio2
Doctor	D1
Midwife	M1
Skills Technician	S1

In the focus group, which just had PA 1 and PA 2, the name of one of the participants was accidently used in a discussion. The student involved raised a concern about this and it was agreed that the name would not be used or appear in the transcription.

I personally transcribed all the data for the semi-structured interviews and the focus group and therefore, was the only person with access to the names of the participants. Participants were made aware that the video, audio-recorded data and all research data would be stored and locked in a secure place to comply with the data protection act (1998)

For the clinical scenarios, the only person who knew the identity of the participants were the individual course leaders for their students only and the clinical tutor who conducted the simulations.

None of the doctoral supervisory team were aware of any participant names involved in this research.

4.4 Transcribing the data.

There were two different methods used for transcribing the data:

4.4.1 Interviews- Semi-structured and focus groups.

Both the semi-structured interviews and focus groups were individually transcribed and relate to all 3 research questions:

8. What perceived challenges exist to effectively implementing the Physician Associate in the NHS

9. How might Physician Associates contribute to the evolvement of the NHS and other healthcare organisations.

10. How can Physician Associates be supported by stakeholders to effectively contribute to the NHS through their role?

The semi- structured interviews were individually transcribed to enable immersion into the data. Although very time consuming, I found this particularly useful as the more I played back the conversations, the closer I got to new meanings from the data. The focus group posed one of the greatest challenges for transcribing, predominantly due to the longer length of the audio tape but immersion in this level of detail, through listening over and over to transcribe effectively, really helped with the analysis of the data and the creation of ideas, categories and later themes.

4.4.1.1 Data analysis for the semi -structured interview and focus group.

For both the semi-structured interviews and the focus group, Braun and Clarke (2006) six phase guide was used. This tool was specifically adopted because of the flexibility it

can provide in analysing qualitative data and because it provides clear guidelines for the researcher which supports a rigorous approach to data analysis (Braun and Clarke, 2006). However, despite the increasing use of this method, thematic analysis can often be criticised for a lack of rigour (Boyatziz, 1998; Roulston, 2001). Many researchers claim that thematic analysis is one of the first qualitative analysis tools/or processes that should be used in qualitative research (Ryan and Bernard, 2000, Holloway and Todres, 2003). Braun and Clarke, (2006) suggest that thematic analysis should be a method rather than a tool or process and argue it can be used in a number of ways across a number of approaches both theoretical and epistemological and supports constructionism which can produce rich, deep and complex data accounts (Braun and Clarke, 2006). Thematic analysis is used to recognise, analyse and give accounts for patterns in the data but it is suggested that to do this effectively, the theoretical positioning must be made clear (Braun and Clarke, 2006). For this research the theoretical framework of innovation and change with a potential disruptive impact are the positioning for the data analysis. A theme is normally captured from a series of patterned responses that relate to the research question and if this pattern appears in a large proportion of the data then it can constitute as a theme; It must also capture something important (Braun and Clarke, 2006).

The identification of semantic and latent themes was also given careful consideration; Semantic themes are obvious and are taken from the data as it surfaces and then.

organised and submitted based on patterns whereas latent themes are more interpretive (Boyatis, 1998). Latent themes go beyond this by unpicking the data,

looking for interpretations based on the underlying theoretical framework and this subsequently supports the construction of new knowledge (Braun and Clarke, 2006).

Thematic analysis in this research to answer the research questions uses the 6-stage approach across the 5 semi-structured interviews and the focus group to establish patterns, meanings and themes that construct new knowledge and specifically address the 3 research questions.

4.4.1.2 Transcribing using Braun and Clarke, (2006).

Table 4 Phases of thematic Analysis adapted from Braun and Clarke (2006).

Phase	Description	Approach
1. Researcher familiarisation with data.	Transcribing, making notes and reading the data sets thoroughly.	Immersion in the data, listening to the recordings several times before personally transcribing the data.
2. Coding of data.	Systematically coding the entire data set.	Support from Director of Studies to code data then applied across all data sets.
3. Categorization and establishing themes.	Coding and categorizing to search for themes.	Searching for patterns and categorizing codes to establish themes.

Phase	Description	Approach
4. Reviewing and refining themes.	Checking and rechecking themes, developing a thematic map.	Revisiting and revising and discussing and clarifying with Director of Studies. Developing a thematic map for each interview/focus group.
5. Confirming themes. (Applied to the research questions.)	Establishing and confirming final themes through detailed analysis. (Applied to the research questions.)	Establishing final themes against a theoretical framework of change management. (Applied to the research questions.)
6. Presenting a report of the data set to include Transana in the research questions	An analysis of each research question using extracts from the thematic analysis and the literature narrative.	Producing a coherent narrative of the complete data set.

4.4.1.3 Phase 1: Researcher familiarisation with the data:

In Phase 1, all the data was transcribed in person after listening to the transcripts on several occasions first. The transcription was double spaced to allow for coding of the data and a hard copy was produced and re-read and checked for accuracy. This personal transcription of the data, although exceptionally time consuming, allowed a total immersion in the data and allowed a level of early interpretation of meanings and patterns in relation to the research question. Field notes were taken as initial thoughts before coding commenced.

4.4.1.4 Phase 2: Coding of the data.

All data was coded using support from the supervisory team to have a full and complete data set rather than a selection of interesting data pieces (Braun and Clarke, 2006). This allowed an in-depth exploration of the data and supported the generation of ideas and early thoughts in relation to potential themes that could be driven as data specific or related to the theory (Braun and Clarke, 2006). Where there were significant comments in the data set these were highlighted as potential extracts and notes were made against the text. The data was coded in numerical order with unique participant identification to identify individual participants and to manage the data. This allowed for a data driven analysis rather than an assumption of my own theories (Braun and Clarke, 2006). Using the supervisory team to support the coding of the data allowed a more objective approach to coding rather than adopting potential pre-determined assumptions. This technique has been described as reflexive bracketing (Gearing, 2004).

Examples of how the data was coded are contained in Annex 1.

4.4.1.5 Phase 3: Categorisation and establishing themes that will answer the research questions.

Once all the data had been coded, the list of codes from across all the data sets was immense. However, once the codes were manoeuvred into areas of commonality and categorised as such; this analysis of codes and their relationships became the catalyst for establishing new emerging themes and sub-themes (Braun and Clarke, 2006) which applied to the research questions. Listing them in a visual way helped to further support the emergence of themes and to see what appeared not to fit into any category; in the early stages of analysis, these were put into a section called miscellaneous (Braun and Clarke, 2006).

4.4.1.6 Phase 4- Reviewing and refining themes to answer the research questions

This is a process of establishing that the themes cohere with the coded data and Braun and Clarke, (2006) suggest that this is managed at two levels; with level one checking the coding and identification of data extracts and recognising that if a coherent pattern is not established, you must challenge whether the theme is indeed a correct representation of the data. This might mean revisiting or changing the theme and or removing some of the data if it is not relevant. By undertaking a thematic mapping exercise for each interview, this helped move to level two. Level two challenged the refinement of themes and whether the maps and data were an accurate representation of the data. For all 4 methods, the data were combined from the data sets to merge themes that could answer the research questions as will be demonstrated in the findings.

4.4.1.7 Phase 5: Confirming themes

This process was done in collaboration with my Director of Studies, through looking at the coding and challenging the refining of themes and their relevance to the research questions. After producing a narrative of the data, it became clearer what were sub-themes and what were the main themes and that all data sets could work within the refined themes. After analysing all data sets, the data that will be presented in the findings, was narrowed down into four themes:

1. Challenging organisational Culture (research question 1)
2. PA role development (research question 2)
3. Innovation and change management (New ways of working)- (research question 2, 3)
4. Professional identity (threats and barriers)- (Research question 2, 3)
5. Phase 6: Presenting the data

Writing the report required collating complicated data sets and presenting them in an inspiring and convincing way that also captures and endorses validity of the data and therefore must provide evidence within an analytical account that supports the argument for the research question (Braun and Clarke, 2006).

4.4.2 Clinical Simulations:

The clinical scenarios were video recorded in the simulation centre using the unit cameras and were then transposed onto a CD. The CD was put into a software package called Transana for analysis. This highly technical and increasing popular tool for video

analysis was used with the support of the clinical tutor who had more expertise in its use. Although Transana can also transcribe the data, I undertook to do this manually for each video, working with the clinical tutor to immerse myself in the consultations and to establish if my interpretations were correct or like the tutors. We met several times to review and transcribe and make observations of the videos. This was particularly helpful as a clinical expert could identify a few interesting observations and clarify clinical meaning which helped me to develop my own individual thoughts and observations.

4.4.2.1 Transcribing using Transana:

The different professional groups of students were identified as described above but the coding for the clinical scenarios was very different to the focus groups and semi-structured interviews described below. Through each scenario, the videotape was stopped, and the time recorded for each sequence of events or intervention with a practitioner- this is a unique benefit of using Transana as you can specifically note timings and in these scenarios, the repetition of some events/practices. The sequence of events was categorised as observations of emerging and familiar practices throughout the 4 scenarios as the students engaged with working together and managing a patient in a clinical scenario. The video footage was much more about observing these interactions both verbal and non -verbal with one another and with a patient rather than an analysis of the clinical case. Therefore, the specific clinical scenarios did not relate to the research question but the interactions, teamworking, roles and how they interacted with patients and one another were very relevant to the research question. This method of analysis sought to establish if these students were

familiar and comfortable working together and if and where they saw the boundaries and related links to one another's roles.

The sequence of events related to research question 2: 'How are PAs contributing to the evolvement of the NHS and other healthcare organisations.' This was coded and categorised as follows:

Safety- predominantly checking for a safe environment for looking after a patient and before an intervention.

Consent- asking permission from patient/checking understanding before intervening.

Communication- to patient and other practitioners- both verbal and non-verbal, information sharing and handing over management and checking understanding.

Intervention- undertaking a clinical intervention or task often as a team or on occasions individually- non -verbal intervention included.

Assessment- assessing patient (History taking and Physical assessments) agreeing interventions and management. Checking and re-checking information.

Teamwork- agreeing parameters of care and interventions/notes/discussions/referrals.

Accountability- checking understanding/handing over patient care/ the passing of responsibility usually from the paramedic to the nurse, to the PA and onto the Physio.

Filtering for role- Attributes that were notably specific to one discipline or defined a specific role of that practitioner.

4.5 Summary of Chapter 4

This chapter provides an overview of the methodology and methods used to answer the research questions. It also provides a rationale for the approach, the four methods used and how the data was collected and analysed. Consideration to the research process including ethical considerations is also discussed. The next chapter will analyse the findings from the research analysis.

Chapter 5. Results and discussion from the Data Analysis

This chapter will present data obtained using four methods of data collection and will describe how the four methods below were transcribed into main themes and sub-themes to answer the three research questions.

The coded and categorised data from the semi-structured interviews and PA focus group were used to develop themes and sub-themes to answer the research questions. This is demonstrated in the three diagrams below.

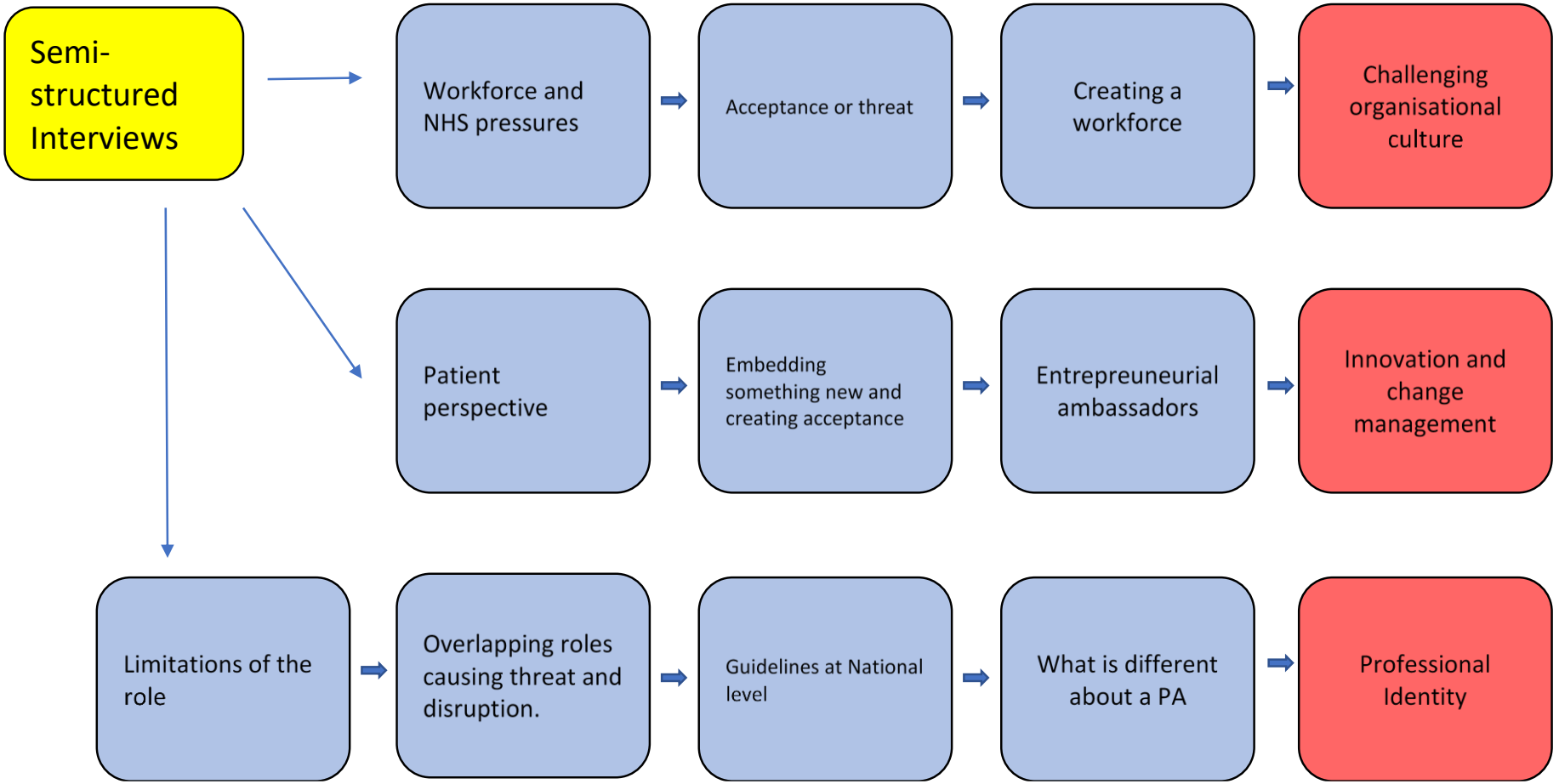


Figure 1 – Development of Themes from the PA Focus Group Discussion

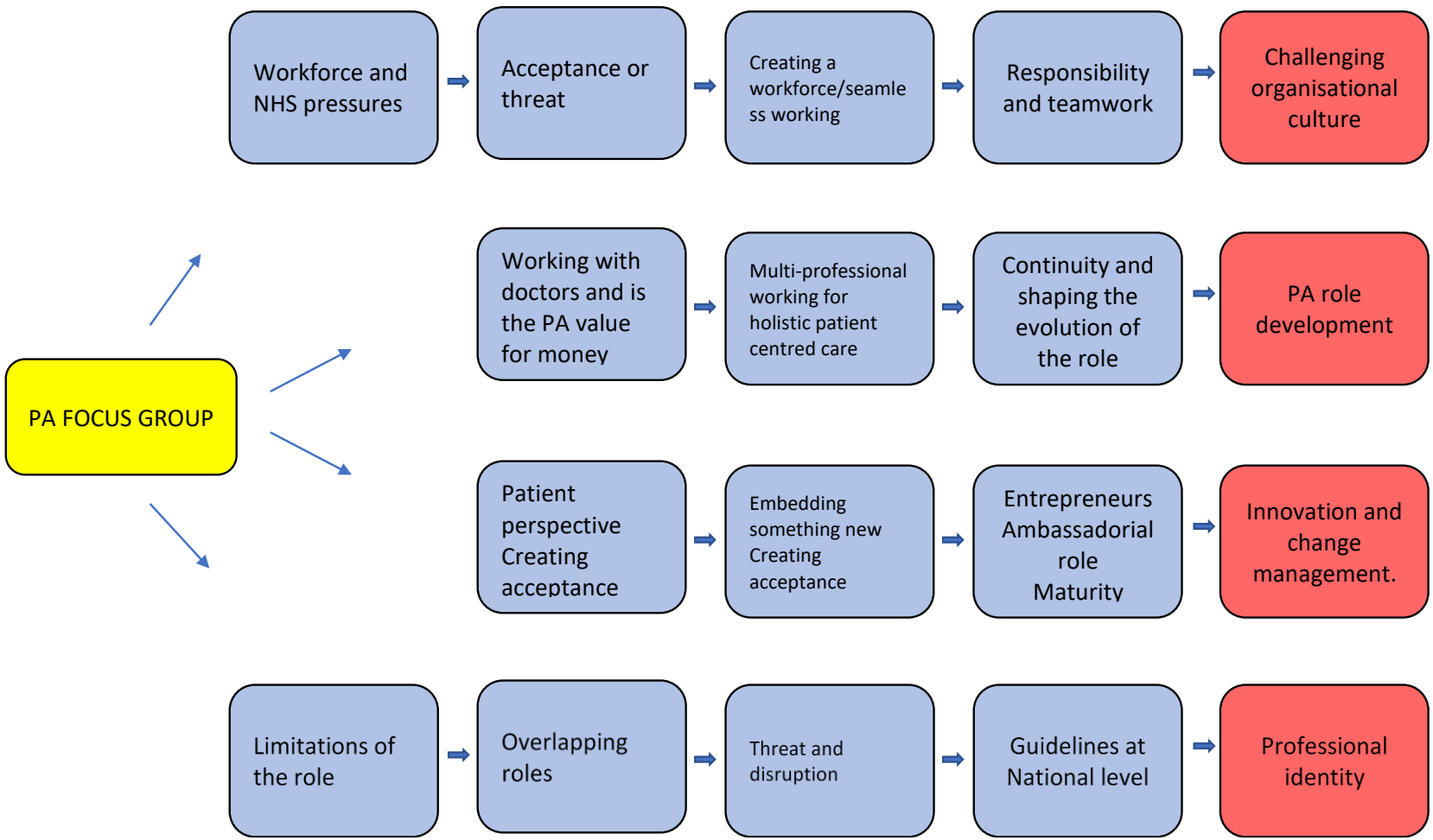


Figure 2 – Development of Themes from the PA Focus Group Discussion

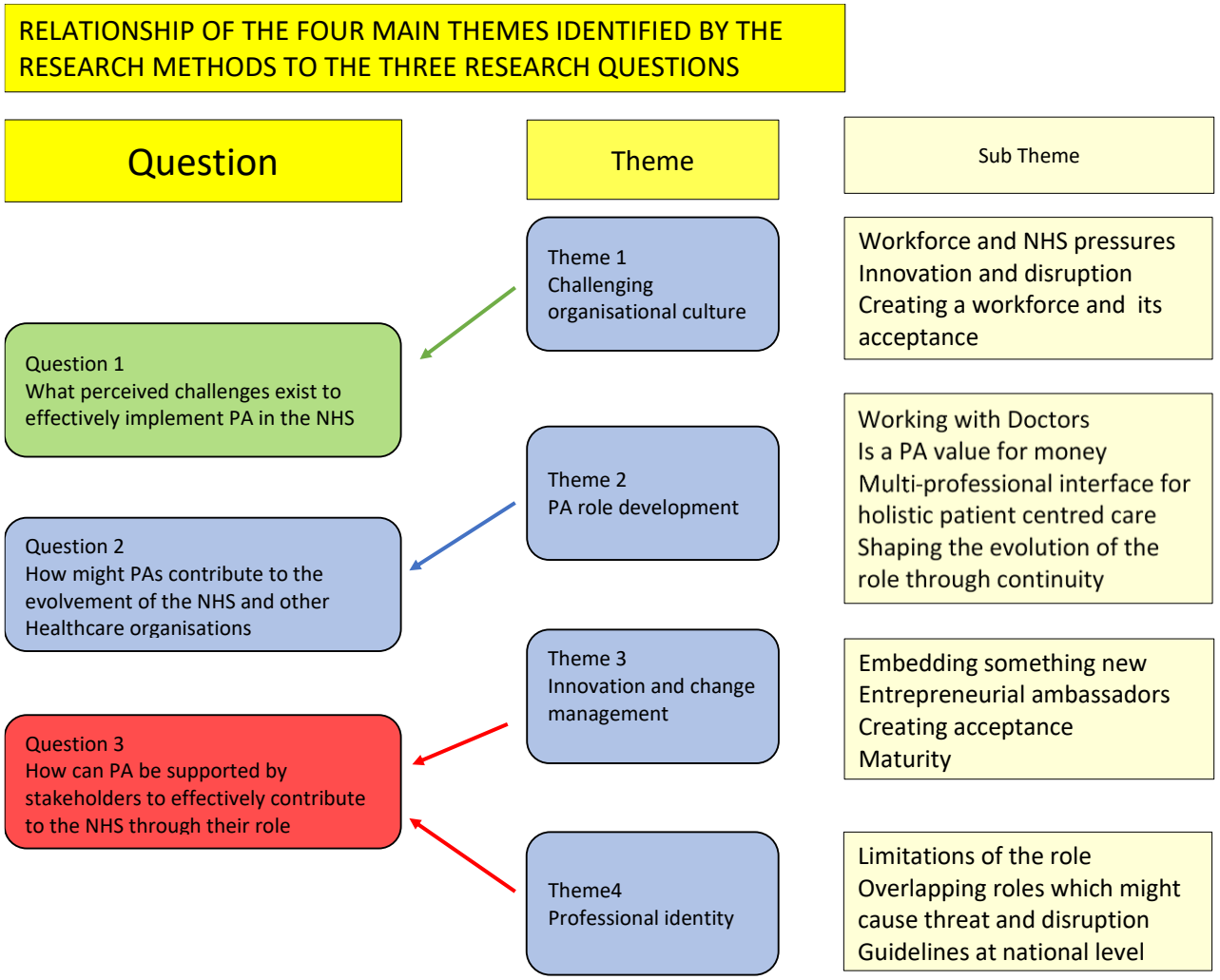


Figure 3 - Relationship of the 4 Main Themes Identified by applying the Research Methods to the Three Research Questions

To answer research question one, one overarching theme emerged from the coding and categorisation of the data with three sub-themes that linked into the main theme. Different experiences were expressed depending on the views of practitioners and their levels of exposure to a PA either in the university or in practice. There were some interesting perceptions from both PAs and stakeholders about how managing the implementation of a new role might be challenging at different levels of the organisation with a clear recognition that one of the main challenges did relate to organisational culture.

5.1 Research Question 1: What Perceived challenges are there to effectively implementing Physician Associates in the NHS?

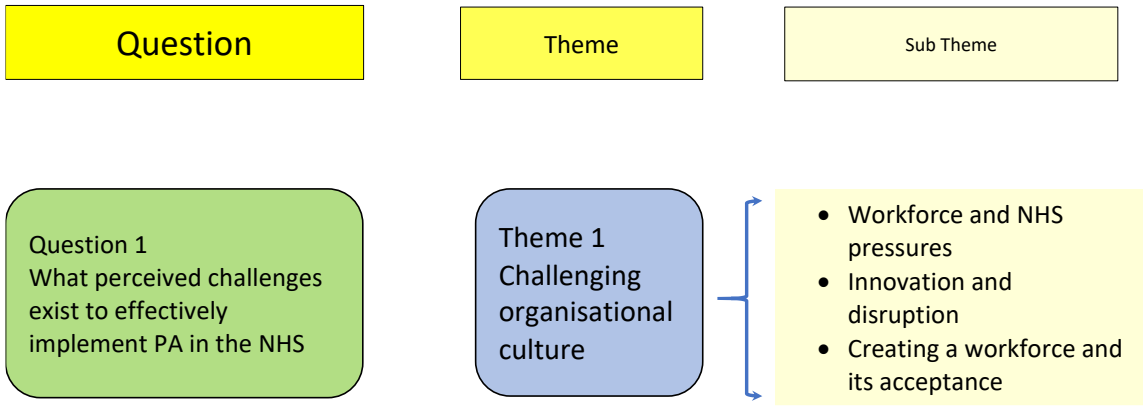


Figure 4 - Themes and Sub-themes arising from Question 1

5.1.1 Main Theme: Challenging Organisational Culture

To answer question one, the analysis originated from the PA focus group, the semi-structured interviews and the PA student reflections. In analysing the data, after coding

and categorisation, I developed the emergent sub-themes from the main theme of organisational culture. This was done by analysing the data responses to the challenges of effectively implementing the physician associate role in large organisations from both PAs and stakeholders from other professional groups. Challenging organisational culture seemed to link to several organisational challenges which is where the sub-themes evolved from and they did relate to the pressures in the NHS, understanding innovation and change and the blurring and lack of clear understanding around role boundaries. In analysing the data there was some synergy with the literature around the multiple challenges of work force pressures, patient demand, constant change, lack of clarity and financial pressures (DH, 2011; NHS, 2012a; NHS, 2014; Kings Fund, 2015; NHS AND PHE, 2017). There was further synergy in the literature narrative around the complexity of successful change management and embedding health innovations successfully (Trebble and Hydes, 2011; Bedgood, 2018).

5.1.2 Sub-theme 1: Workforce and NHS Pressures.

Workforce and NHS pressures came out very strongly in the data from the practitioners with an absolute recognition of how challenging the workplace can be on a day-to-day basis and how this may affect the implementation of a new role. These findings had some synergy with chapter one of this thesis which gave an overview of workforce pressures, the national shortage of practitioners and the call for transformational new ways of working, through new service delivery and roles to support cost effective, high quality patient centred care (NHS, 2014; NHS AND PHE, 2017). This backdrop of large-scale transformational change and workforce pressures have led to strong resistance to

change for change sake but also a call for better working practices that value staff and use skill mix effectively (DH, 2012b; HEE 2017) . What was very clear from the responses of PAs and stakeholders was a recognition of these challenges and some insightful observations.

The PAs in the focus group were asked what their thoughts were on workforce pressures:

PA 2750: ' there's always media or news talking about the shortage of junior doctors…. in general practice they are constantly worried about the shortage and lack of doctors trained'

And when asked how they might relieve some of the pressures, they clearly articulated that their role was not to replace junior doctors but to fill in the gaps when junior doctors are rotating whereas as a PA remains consistently in one service:

PA2751 ' with the junior doctors constantly changing it's a constant merry-go-round as there is no one that's always there …… whereas the physician associate comes into the long-term and stays as long as possible'

This fits with the literature that describes the PA as someone who works within the medical model, under the supervision of a doctor but provides consistency and continuity of patient care (Ross *et.al,* 2012; DH, 2012)

One of the stakeholders described very positively the impact of having a PA in the practice for the first time:

D111-112*: we have just had one start in our practice in the last few weeks and she has been a brilliant fit which helps. She is really very good…… We were worried about how often we would have to come out of surgery to support her but…. it fits very nicely between the role of the pharmacist with minor ailments and one of our advanced nurse practitioners…. she sits between the 2.*

A Further observation by the same stakeholder suggested that the PA role may get superseded by the government announcement of more doctors (Kings Fund, 2017) and potentially saw the role as unlikely to mushroom to solve a workforce crisis as students would find medical school more attractive than a PA place. Despite this view, there has been a call for 1000 more PAs in general practice to support the workforce by 2020 (BMA, 2017) although more recently there has been an additional call for more doctors and where University places are usually capped, the cap on numbers for medical school places in England during Covid 19 has also been lifted (BMA, 2020). There seems to be an imbalance in developing the PA as a potential cost-effective option for remodelling the shape of general practice (Lewis *et.al,* 2016), and the calls for new ways of working (NHS AND PHE, 2017) over an assumption that the NHS needs more doctors over other healthcare practitioners. This raises a challenge for the role moving forward, particularly when the doctor admits that a PA can see 90% of what comes into general practice which does question why this role is not used more to relieve workforce pressures. This may also indicate that the role may not have evolved enough to have developed the right levels of trust.

The same doctor raises another important point around the training of both doctors and PAs:

D1212: 'Lots more medical students and then placements so what worries me slightly is that the capacity won't be there to supervise them properly'.

Placements are always a major challenge for Universities placing students and for busy NHS staff having to also support students. These perceived challenges could be very difficult for PAs in their new roles, particularly when there is such a difference in the funding (tariff) given to trusts and general practice for educational support; often called the medical and non-medical tariff (DH, 2020). For an area like general practice where support is one to one, rather than a ward environment, there will be far more likelihood of supporting medical students that have significantly higher tariffs to support their education over a PA who has a much smaller tariff. The difference between the medical and non-medical tariffs is ten times higher (DH, 2020). This sets every other practitioner at a disadvantage and especially the PA who needs their experience to be under the supervision of a doctor but do not have an equal footing to support the training they need. This does leave a question mark around managing effectiveness and efficiency through new roles and services, when there is a level of inequity that may block the process, particularly when future strategy is to train a multi-professional workforce (NHS AND PHE, 2017). It could be argued that the tariff should support every healthcare practitioner to achieve and further questions whether such inequity could affect the level of commitment to the education of healthcare professionals, particularly with small businesses like general practice with limited funding to support new roles. This

also links with data from the literature review and the challenges with professional boundaries, highlighting the difficulty with the existing workforce without even trying to introduce a new role (Drennan *et.al*, 2017)

What was also apparent from the stakeholders is the strain and workforce pressures that are perceived in the NHS and in the scenario below, there was evidence that despite understandable concerns the PA did have an understanding of what they could do to relieve those pressures and where the boundaries lay for referral back to the GP:

D1431-D1434: It's all hands-on deck…… most organisations will be grateful to have a spare pair of hands…… I think some of my partners were worried about the ability to diagnose…. but then it is flagging up what's abnormal and passing on……. she recognised what she couldn't do……. she seems to be able to manage 90% of what comes in.

In this instance, it does appear that the PA has been very well supported, despite early reservations about a new role and if they understood their knowledge and competency boundaries. This also came up in early research studies discussed in the literature review that compared the role of the PA with a GP in same day consultations, where the PA compared very favourably, often seeing less-complex cases, taking slightly longer but demonstrating cost effectiveness and no significant differences in rates of consultation and patient satisfaction (Drennan *et.al,* 2015).

The midwife also acknowledged the strain that staff feel:

M1318: …they are worn out by change, its survival not thriving in the NHS and I think they are exhausted by the level of change and by the intensity of it……. It's just so hard out there.

And the impact this may have on introducing a new role:

M1216: feel like they are a minority endangered species…….they are trying to show their value…… against a really tough culture where people are just exhausted and haven't time to look at new roles and haven't got time to train a new breed of professional so that's why making alliances nationally is so important.

This resonates with the demands in access to healthcare services where practitioners are exhausted by workforce pressures and may want to support new roles but the pressures facing both acute and primary care services are of significant demand with limited services, showing also where the Doctor was just thankful for any help they could get due to workforce shortages but seeing that with a push for new nurses and doctors this will just resolve itself in time.

What this data highlights is that training healthcare professionals where financial pressures are tight and staff are exhausted makes it even more challenging to implement a new healthcare professional into the workforce, even when there is a growing evidence base that the PA would relieve workforce pressures (Drennan *et.al* 2015). It also highlights that there is a great deal of inequity to supporting the medical workforce over the non- medical workforce which may not be conducive to supporting new roles or the aspirations for a multi-professional workforce. The context for disrupting current thinking was identified in the literature review which is that the NHS

needs new ways of working that embrace innovation and change and work more effectively (NHS AND PHE, 2017) which is why it is so important for research in this field. PAs work within the medical model and can relieve pressures in the NHS (Ross *et.al* 2012) but they are an evolving role and need investment in time. The evidence for workforce pressure speaks for itself: a strain on services ; the need for efficiency savings; the need for better patient outcomes (Kings Fund, 2015); the need to '*Liberate the NHS'* to shape the workforce of the future (DH, 2012a; NHS AND PHE, 2017); the importance of using evidence based practice to support better patient outcomes supporting new ways of working that are still slow to adopt (DH, 2011; NHS, 2012, DH, 2012b; NHS, 2014; Imison, Castle-Clarke and Watson, 2016; NHS AND PHE, 2017). It is also important to remember that this role emerged against a backdrop of a severe crisis in emergency and frontline services, reporting two million unplanned admissions a year, an ageing population with an average age of 65 at presentation and a general increase in presentations with more complex health needs (NHS, 2014). This was against the backdrop of a diminishing workforce, particularly doctors and nurses, requiring radical change (NHS, 2013).

5.1.3 Sub-theme 2: Innovation and Disruption.

The PAs and stakeholders all had an awareness that innovation and new ways of working were part of moving forward with future healthcare, although aware of the disruptive nature of these developments, particularly for medicine and the importance of emphasising where they fit in modern day healthcare to ensure other practitioners do not feel threatened:

PA 1 854 *'I think there are innovative roles in the NHS and have been for some time for example the advanced nurse practitioner or the clinical pharmacist who also venture onto the turf of the doctor's role.'*

When specifically asked if they saw themselves as a 'disruptive innovators', the PAs had very different responses to the stakeholders suggesting they will evolve rather than disrupt:

PA 116100: *I don't think that it's disruptive because ….we are not taking the place of anyone…it is complementary so I think its adding to the NHS ……..I think the disruptive nature is more ……..people's perception of how and what the role can do….. If the role is implemented in a way that we hope it will then it won't be disruptive it will be complementary to the rest of the NHS staff.*

The PAs appear not to have felt they were being introduced as a role that was widely different when it came to patient care, more that they could offer additional support that would make the NHS more effective.

PA116104: I don't think anything is inherently different in the sense that we still have patients and people still have the same conditions……..there's still the doctors, there's still all the other medical professionals so it's not getting rid of an old market at all but what it's doing is probably making it a bit more streamlined or efficient and allowing there to be staff that weren't there before …like a PA …

This fits with the findings in the literature that discuss workforce strategy needing to effectively use the skill mix of staff to support the acute workforce shortages more effectively (NHS, 2014; Kings Fund, 2015, NHS AND PHE, 2017). The more recent ten-

year Long-Term plan also advocates integrated care systems and bringing healthcare professionals working together to be more effective and efficient, to reduce costs, prevent repetition and offer a more co-ordinated approach (NHS, 2019). This is further endorsed by the more recent 'Peoples Plan' where new ways of working and delivering care are widely encouraged and where innovation and change are reflected in how the management of Covid19 took many practitioners into new ways of working which they embraced, working across boundaries collaboratively, blurring traditional role boundaries to transform working practices (NHS 2020/21).

However, role threat and understanding around traditional roles has been a major issue outlined in the literature review (Drennan *et.al* 2017; Jackson, Marshal and Schofield, 2017) and in some of the feedback from the PAs where the PAs do see their role as needing to explain and reassure:

PA 1528-1529: I think it will come from the lack of understanding rather than from thinking that their job might be in jeopardy because there's always the risk isn't there when there's a new role and the pay scale is not as high…. then they favour the PAs over… paying for a GP ……what we do have to understand is that GP has a higher education……. The role of the PA is to assist isn't it… to take that burden off…. There's always going to be people who feel threatened by it

However, the opinions of the stakeholders were quite different again, suggesting the role may well shake up current practices and in the case of the doctor below, some insightful opinions on what might happen in terms of shaking up the education and training of other roles:

D1539: Its disruptive in that it's a tangential break away from traditional nurses and doctors who have evolved and extended their roles and now you have a break away role with a graduate from biomedical science, biochemistry with no clinical experience at all which is agitating all the other roles to align and redefine themselves and this is the sense in which it is disruptive……. it may burn itself out as a role and the change it makes in 10 years' time you may not see a PA anymore, what you might see is the impact that this change might have on other professions.

This reflects that the role may still be at risk and reminds us that the initial launch of the PA role was not successful, even though the 2nd launch in 2014 has seen more momentum. Until 2017, HEE had not produced a specific workforce strategy and arguably now this is in place it may help new roles if they are actively discussed in workforce strategy nationally and locally.

The new 'peoples plan' and previous 'long term plan' (NHS, 2019; NHS 2020/21) also discuss the evolvement of digital technology in new ways of working and this may well be an area that education needs to work in collaboration with the NHS to evolve with, this may also be disruptive and impact on transformational change and new ways of working, some of which has been seen during Covid19, particularly where face to face consultations rapidly moved online (NHS, 2020/21).

In the early launch of the role where PAs were described as Drs on the Cheap (BMA, 2017). In the comment below, there is a suggestion that the PA does very well on very little training despite the fact that they come with a solid science background and undertake a 2-year intensive training which has twice as many hours per 20 credit

module as any other Masters course because of the 3150 hours of study time (DH, 2012). In this scenario, PA training is described as a one year top up which if following the American model is normal for front loading, theory in year one followed by intensive rotational placements on year 2. However, it is certainly not a 'light touch training' as they work to a matrix of conditions and have a national exam and recertification every 6 years (DH 2012).

D1640: Just to expand on disruption over evolution what I think will happen is that the presence of PAs in the workforce will shake up how everyone else is trained so at the moment medical students are pluripotential, everyone learns everything and it takes forever…..I think that PAs will show us that as they are not clinically trained…. they are not in a clinical environment…. but they do a one year top up and they manage fine… So, what you will see is a shake-up of what it takes do another role…. a doctor…. a nurse…. and maybe it will break down the barriers between professions for example if a nurse sees a UTI and a pharmacist and a PA see a UTI, they are all doing the same role, does it really matter…..How people are trained in other professions will change as a result of this.

The Midwife was concerned for the future of the role, indicating that some people in the profession may not understand or see the need for the role but did acknowledge that it could evolve with time:

M113: I think we need these roles and I hope people do not see this as a dumbing down doctor and it is disruptive because there are people, particularly in midwifery who will

be very antagonistic towards it because they do not see a place for it which is sadly misguided but I think it will evolve as it is a much needed role in the NHS.

Findings from the literature by Drennan *et.al,* (2017) acknowledge that familiarity with the role and working practices, achieved more role acceptance but this also reflects some of the major barriers to innovation such as internal politics that can have a powerful influence (Black and Fitzgerald, 2018) and where many professionals do not feel comfortable moving outside of their norm making them resistant to change (Gool *et.al*, 2017).

The Nurse thought the role might be disruptive but also discussed other similar roles that had been introduced into the workforce and the barriers that a culture of hierarchy might cause:

N1317-N13220: we have already seen this with advanced practice where you have … organisational cultures where perhaps there is a hierarchy and they block change and innovation…. they don't see a nurse or PA has the skills to take on something that they as doctors having previously done….there is that real dichotomy with advanced practice around being a mini doctor or being an advanced practitioner and I guess the PA sits in there because they could be seen as an advanced practitioner in their own right or they could be seen as the doctors hand maiden, the same as ACP's could be seen in that way so it would depend on the perception of the medics perhaps and the culture so if you have got a culture that is hierarchical where the doctors don't embrace that change then it will be more difficult to influence.

This insightful comment is also reflective of findings from the literature where it was described that the power and responsibility for new roles may be devolved to clinicians that do not have the leadership skills to enable this (Long and Spurgeon, 2012) and how important the narrative and communication needs to be to support change and the tensions between old practices and new (Greenhaugh *et.al,* 2012). The other point of interest is the evolving nurse practitioner role which also had many challenges to implementation but also had key phases to support the implementation (Reay, Golden-Biddle and Germann, 2017) and the need to support 'cultural inertia' (Selivanoff, 2018). This resonates with the concerns discussed in the comments from the nurse.

This sub theme highlights an understanding about the need for innovation in healthcare from the perceptions of PAs and stakeholders but also reflects many of the findings from the literature around cultural change, breaking down barriers and exposure to the role reducing those concerns. The more recent peoples plan (NHS, 2020/21) however, does highlight how fast transformational change can take place when faced with a pandemic.

5.1.4 Sub-theme 3: Creating a workforce and its acceptance.

In observing the challenges of implementing PAs into the workforce, it was interesting to hear the different observations from both PAs and stakeholders. What is clear is where there had been regular exposure to a PA, there was more acceptance of the role:

PA 2959 *people who were more used to physician associates……. were easier and more friendly and welcomed you with open arms because they know what you are capable of and what you were able to do.*

In other areas, PAs described a keen willingness of other professionals to try and understand the role and where this happened, they were keen to work with them and showcase what they could do:

PA 2960-2961: *Some people……. had not experienced physician associates…. just did not know about physician associates…. were intrigued…. but wanted to see what you were able to do……and tried to teach and help you…….and also wanted to see* what *you're able to do and set the tasks…….and so got you on board with the jobs.*

And in some areas, there was clear resistance to the role, although the PAs did say this was the minority not the majority:

PA1962: *there were very few…a minority doctors and nurses who didn't know what you did…. had a bit of a stand back approach with you.*

PA1963*: probably felt a bit threatened mainly it was some of the advanced nurse practitioners and junior doctors but there were also one or two consultants who didn't like physician associates as they probably felt it lent too much on the medical students and affected their learning.*

Resistance to new roles was also identified in the literature findings as well as some testing new ideas for new ways of managing the role of the GP to be more empowered with a multi-professional mix of practitioners including PAs to work with (Lewis *et.al,* 2016). In the re-emergence of this role, the papers '*the case for the physician assistant*' *(Ross et.al, 2012) and a new kid on the block (RCP, 2014),* attempted to provide doctors with a clear understanding of the benefits of this role to their working practices, particularly as they would work with the medical model under their supervision,

whereas the later paper by Aiello and Roberts (2017) articulated the importance of the multi-professional team. However, the early studies conducted by Drennan *et.al (2017)* highlight the challenges of crossing professional boundaries with medicine having the most power and how there are mixed levels of acceptance often due to a perceived threat for the role (Drennan *et.al*, 2017) and discussions with doctors on understanding the boundaries of the role, managing uncertainty and complexity which was not well understood (Jackson, Marshall and Schofield, 2017)

It was clear that PAs considered they had a key role to play in supporting future workforce challenges and that they played an important part in supporting other professionals to understand and they actively worked on winning them over:

PA2964 . *So, there was a time from my personal experiences…… there was a consultant on the placement I was on essentially blocking me…… holding the notes away…….so I could not look at them…. I just ignored it and continued…. By taking the bloods and working, updating the notes prepping the patients until he realised that…we can do something.*

This raises difficulties for students in adjusting to their place in the workforce, particularly if they encounter resistance. However, life experience and the fact that they were mature post graduate students appears to have helped them understand and acknowledge NHS pressures. This may be harder for a younger undergraduate student and this experience may well be an important feature for PAs developing resilience in mapping out their own destiny. A recent study by Howarth, *et.al,* (2020) raises concerns for student well- being in this new role, suggesting additional support may be required

for those with active caring commitments. The same study highlights that many staff did not understand the role or the clinical scope (Howard *et.al*, 2020). This is a major concern for supporting PA students find their niche.

PA11071-PA11073: There was a certain degree of animosity……. but I think the main issue I had from a slightly more negative point of view would be not so much threatened by the role but more that staff are already stretched to their limit and having to in their minds train a new role or have change put in place was actually negative to them because they needed to be able to focus on what was needed as they are already spread very thin…… they were more frustrated than anything because what they wanted was a fully-fledged individual to come in and just help rather than a person needed to be trained.

This resonates with the literature review where it was clear that many staff felt that they were working in an area where constant change is a key feature which can have an emotional impact on employee's well-being and barriers to adopting new roles which leaves staff feeling negative if they fear they are being manipulated (Selivanoff, 2018). Acknowledging these barriers has been described as being based in poor communication, a sense of hierarchy, the complexity of understanding across diverse backgrounds, lack of time and financial support (Sullivan *et.al*, 2016) and reflects the importance of remembering to ensure that ideas that can come from the workforce are not lost because of these potential challenges where seeking outside help for transformational change rather than looking for solutions inside an organisation, can

damage staff confidence and morale, prohibiting lasting change (Tiley, 2013; Marshal, Miani and Nolte, 2013).

It is also important moving forward to acknowledge the views of the wider workforce in understanding their views on new roles and managing the thoughts of stakeholders from the non-medical workforce. In this instance, the perception is that the medical workforce will be less resistance and more enabling than the nursing and midwifery workforce might be:

M1424 ……. perhaps they would have a more superior attitude to them……you worry that there will be a hierarchy and they will be seen as not important…but I don't know something about DR's, they accept people and they accept new roles a lot of the time…you do see it…they are far more open……. a culture…. more open than nurses. Sometimes nurses and midwives feel they have to fight for your place whereas they inhabit their place.

This might suggest that there is a sense of 'power' in medical practice over other professions and if this perception or reality remains very strong.

N127-N210: its new and when a new role is there people do not always particularly understand what that is and how it fits in and so some people will be threatened but for people who are informed and understand what the role is are probably likely to be less threatened and I suppose you might have some of the doctors feel threatened by it as perhaps they are taking over their job but again it is about how well informed those people are and how they use that innovation to do the best for the team and for the innovation.

This resonates so clearly with so much of the literature review that suggests the importance of making sure that research into new roles are viewed from a macro, meso and micro level and the need for clear leadership (Drennan *et.al* ,2017) but also understanding the need for collective and system wide leadership in managing innovation and change (Cameron and Green 2020) and also embracing new ways of working, for example some of the examples the NHS has seen through lean thinking (Davis, 2011).

The paramedic stakeholder had some insightful views on this role as a frontline practitioner themselves and based their thoughts aligned to their own experiences of their own role: and how they saw a PA fitting in:

P113: Mostly, minor injuries, GP surgeries, places like that probably reaching out more to community places like that when people can't necessarily get to or appointment with the GP so they can be an outreach service as well.

This fits with the origin of the role, where the PA role in America was developed to support the underserved and under reached communities (Brock *et.al,* 2011, Ballweg, 2017). The paramedic stakeholder saw a very clear alignment and career progression for their own role which was interesting as this was very similar to the evolvement of the role in America.

The paramedic, however, did have enough insight to hope that it would be utilised in a few areas beyond front line medicine:

P1318-P1320: hoping it will grow as with anything that's new I think it will be piloted in different areas and hopefully it'll be successful in these areas…. as they have been in

existence in the states - where they are used very widely……like rural areas and they've got a really promising future…..the nice thing about the PA role is that the people who go into it do come into it from lots of different disciplines so I think that's a strength in itself…. Ideally it should rollout to be an acceptable role.

They also showed an insight into the need to create new ways of working and new roles and how they needed their own identity to ensure they did not get used to replace a more established role.

P1633-P1634: the introduction of PAs is to reduce that pressure of it you know you know so against that absolutely it depends on how they are used. If they are going to be used as another nurse or going to be used as another, I don't know OT then no it's not going to change anything …. It would be like feeding wood into the fire but if they are managed and structured properly and they are allowed to use the skills they have got…. then it should be taking the pressure off.

Creating a new workforce and breaking down the barriers of threat and enabling acceptance may well have its roots in a future of inter professional learning and teaching which was evident from the simulated scenarios when it was completely clear that practitioners and students in this case were not used to working together. This does ask the question of how we can expect there to be such understanding of other roles if we continue to train students in isolation. Although the simulated scenario data are not necessarily relevant to the research questions, the experience and student reflections are insightful:

When asked about the simulated practice, it was very clear that the PAs felt that more inter-professional learning and teaching would make them feel much more part of a team, potentially helping with acceptance and productive working patterns (NHS, 2021).

PA1642

'I definitely think that having multidisciplinary scenarios would be great so it gives you a bit more feel of where you are in the team because all of these teams and all of these professionals are solitary to begin with in in their training and the sooner that you put them to mix the sooner you get to see the strengths and weaknesses of any of the other professions and how we can bolster up each other'.

To sum up question one, there are undoubtedly many challenges to effectively implementing the role of the Physician associate into the NHS and these are multi-facetted ranging from a lack of understanding, poor communication, threat and acceptance, understanding, constant change, lack of leadership and the need to embed new roles from a macro, meso and micro level but taking a collective approach to developing leaders and a receptive culture for change.

5.2 Research Question 2: How might Physician Associates contribute to the evolvement of the NHS and other healthcare organisations?

The methods used to answer this question were articulated from all four of the methods used. These were the PA focus group, the semi structured Interviews, the reflections of PAs from the clinical simulated scenarios and a separate analysis of my own

observations of the simulated scenarios. The quotes used to answer this question are predominantly from the PAs who had more of an understanding about what their role entailed and had been on the course for a long time. Although some of the findings to answer this question also came from the stakeholders from other professions, this data was more helpful in answering research question three. There were three main themes that emerged from the data to answer this question with sub-themes that emerged as part of the main themes. These will be discussed in the narrative below followed by a discussion of findings to establish if there are any similarities in any of the findings from the literature narrative and what new knowledge has emerged from the data. Three main themes emerged from the data to answer this research question with supporting sub-themes to help contextualising answering the question. These are shown below.

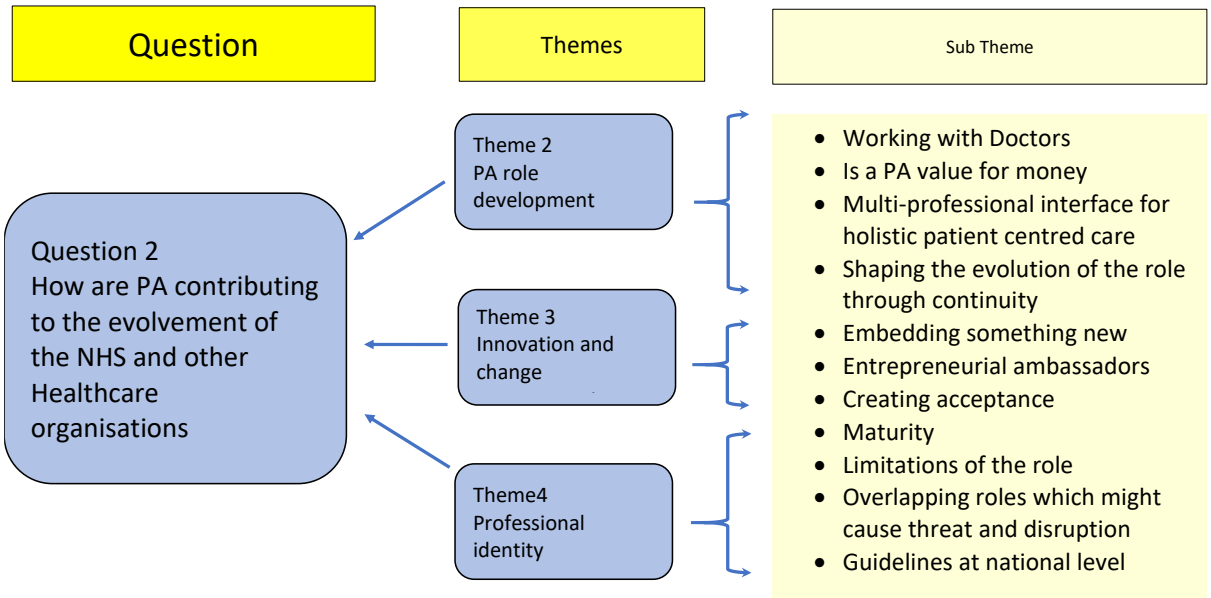


Figure 5 - Themes and Sub-themes arising from Question 2

5.3 Theme 2: PA Role Development

Understanding the PA role was an important question to establish perceptions of the role and when the PAs were asked about this, the responses were an important reflection of the way in which PAs see themselves as pivotal to providing a service of continuity of care by being present in one clinical area for a substantial length of time. This was discussed by Ross *et.al* (2012) in chapter one when describing the role as one that supports doctors by offering a stable pair of hands and continuity of care from a healthcare professional when other practitioners maybe rotating.

PA112-119… ' a PA is the person who is on the wards or A and E, it's the person that's thinking around the diagnosis and management of a patient…… it's a role of continuity, we tend to stay in a speciality or with a certain team…… it's similar to the junior doctor role but with a more holistic approach to patients, so more of a patient approach'

The PAs do see themselves as offering something different to a doctor and that they have something unique to add. Sub-themes also emerged to help support PA role development and these related to current thinking around the role. The first sub theme, working with doctors and whether the role was value for money, produced some interesting findings.

5.3.1 Sub theme 1: Working with Doctors/Value for money

It was evident that PAs predominantly align themselves to doctors because they train in the medical model and this is the way the role works in America. Although this is important to support the role, workforce policy moving forward and particularly further

emphasised by transformational change during Covid19 is to further promote and embed inter-professional new ways of working (Aiello and Roberts, 2017; NHS, 2019, NHS, 2021)

PA 1: *'I feel this is another one of those roles that helps out ……. But I don't think that's a bad thing or its counter -productive because its' just as there are more people in the NHS doing these jobs to meet the shortages my colleague mentioned of doctors and again with continuity it's important to have multiple members of the team doing similar things but in slightly different ways with different models'*

In this instance the PA acknowledges that new ways of working are needed in the NHS and that they can play a role in supporting the shortage of doctors. In the quote below from the technician, there is again an acknowledgement that PAs can support doctors by taking the pressure off them but also understanding there should be a scope of the role to refer on.

S1 649: *I think it's complimentary to doctors as they are the first line of enquiry…. for patients and they will carry out the number of assessments and signposts and I think they are more likely to keep their skills fresh and up-to-date because they are not trying to do absolutely everything that the doctors are doing in the initial assessment so I think it's a good thing because as I said it's keeping skills up-to-date and they will refer it on as and so it will take the pressure of GPs.*

The findings from the literature did establish that there was a great deal that a PA could do to support doctors in general practice (Halter *et.al,* 2013; Drennan *et.al,* 2015) and although a PA saw less complex cases than a GP, they could still cover a large number

of scenarios. This justifies the debate by Lewis *et.al* (2016) who suggest that general practice could be modelled in a completely different way with the GP taking more of a consultant role supporting different practitioners in a new 'roundhouse' model of primary care.

When the PAs were asked whether they thought that they were able to provide cost effective healthcare, this was not something that they had given any real consideration to. This was a surprising finding as early debates by Ross *et.al* (2012) and Williams and Ritsema, (2014) were keen to emphasise that the role would produce a more cost-effective practitioner. However, in the quotes below, the PAs did have a good understanding of how a junior doctor may not earn as much as may be perceived until much later in their career:

PA 217110: it's not something I have really thought about to be honest because the costs are always changing, and the environment is always changing I mean if the trust are trying to save money …… I don't know what the difference in the wages of a PA and the equivalent F1..F2….even CT trainers, GP trainers…I don't know what the differences are but….if they are there for the long term maybe …it will be more cost effective.

PA218111: the common misconception from the public is that as soon as a doctor is qualified they are on a £100,000 plus a year and this is not the case ……..if it was the case then yes it would be cost effective…because for the price of one doctor …you would get 3 PAs for example ..well it's not the case so cost effectiveness doesn't come into at the moment

PA 118114: PAs on the whole do earn more than an F1 does so initially…. it's not cost effective for that year the F1 is earning less …… if you can evolve the role from a more specialist registrar point of view……. continually on the ward…that probably would be more cost effective than maybe a specialist registrar…. It's having the foresight to see that ……if you have 5 lots of money it gets you 5 F1's but that can only get you eventually… 2 specialist registrars……for PAs it's having them for a long time across the ward and the initial training and the period where they are earning slightly more than the FY1….. that's slightly a fear factor from people who want to employ PAs it's just that initial training and the initial funding that you would need to have a PA…… it would be cost effective if you implemented it on the wards for a few years.

This all resonates with the findings of the early research that suggest that PAs were marginally more cost effective at £6.22 per patient, although they took longer to see a patient than the GPs (Drennan *et.al*, 2015) but the role was in the very early stages of implementation then and still is to-date. These finding do suggest that there is much more to do to support the effective implementation of the role and that there is a need for more research and evaluation to support this. This would be further enhanced by aligning the role to a multi-professional workforce to support the provision of high-quality cost-effective healthcare. What the PAs do demonstrate is good insight into the journey they have in establishing their place in that evolvement.

In understanding PA role development, the second Sub-theme of multi-professional working gave further insight into how the PAs see evolvement of their role and how this had been a completely new experience for them. This section also includes a quote from

the technician who had first-hand experience of seeing students on a range of professional courses interact with one another.

5.3.2 Sub-theme 2: Multi-professional/ Holistic Patient Centred.

The PAs reflection clearly demonstrated that multi-disciplinary learning and teaching is not embedded in everyday practice, suggesting that organisations need to change the culture of working patterns, education and training. This fits with the work of Aiello and Roberts (2017), who were keen that PAs became part of a multi-professional workforce rather than solely aligned to the medical profession and a number of other examples from the literature that demonstrated the need for a change in the culture of organisations so that good initiatives do not get blocked at different levels of the organisation and that value creation, patient focused outcomes and inter-disciplinary leadership take a stronger part (Koomans and Hilders, 2017). The following quotes were taken directly from their reflections:

PA1 Reflections: '*This simulation was the first one of its kind I have been involved in and was also one of my first interactions with the paramedic profession. The scenarios allowed me to have a unique insight into how the PA role works alongside others in the multi-disciplinary team. It was interesting to see the actions and thought processes of the other healthcare professionals and how they differed from the PA role. For instance, the different use of pain scales between the paramedics (0-3) and the in hospital medical professionals (1-10). It was enjoyable to follow the patient journey from the paramedic start, through the nursing care and then the Physician Associate care. It was overall a thought-provoking experience.'*

PA2: *' I thoroughly enjoyed the simulation and found it really interesting to see what the other specialities do in this instance. Having not experienced a paramedic at work it was good to see how they admit a patient and manage them until they arrive. The same goes for the nurses, although I have worked with nurses before on placement, you are not always with them to see what happens in a situation like that. Often you get called once the patient has already arrived and the nurse has done their job already. It is also good to see in the sense that where everybody has their role in the 'process' and potential improvements that can be made to this process through the use of simulations.'*

PAs rotate across a large range of clinical specialities, including front line medicine, but had no first-hand experience of working with a paramedic. This was a remarkable finding, particularly as the re-emergence of the role in 2013 was part of a collaboration of looking at how many different roles could support the urgent and acute care crisis and workforce shortfall (HEE, 2015). The early evolvement of the role in America offered frontline services to the underserved populations (Ballweg, 2017) and in later years was a progression route for the role of the paramedic onto a PA programme.

The PAs were asked where they would position themselves in a multi-professional workforce and unsurprisingly in the quotes below, they aligned themselves to junior doctors.

PA 2222-PA225: '*Probably with the junior doctors, mainly the F1s and F2's. I think we are a similar level to them. in certain terms knowledge and stuff, they might have more*

knowledge in certain conditions not covered by the matrix but in terms of the skills that you have and the jobs you are able to do, they are very similar, apart from the prescribing and ionising radiation which you can't do at the moment'.

PA 2227: 'if *you are a newly qualified PA, you are not going to have the same experience as them but obviously with time and experience you would have a similar level of experience as them.'*

The early research makes comparisons of the PA role with medical practitioners often experienced GPs (Drennan *et.al*, 2015), not junior doctors. In this large observational study, there were no significant differences in the role of the PA to the GP other than it freed up the GP to see more complex cases (Drennan *et.al,* 2015). A recommendation from these finding would be for future research to compare the role of the PA more with junior doctors and advanced clinical practitioners as this might be provide a more effective comparison. Further research would ideally be as part of a multi-professional workforce, evaluating the contribution that each professional group could offer to enhance patient care and the patient journey.

This insightful comment from the technician cited below refers to an unpublished report for Health Education England, following a project called 'Transitions in healthcare.' This was a project that evaluated many different professional roles across a patient journey, following the patient journey from a home environment into an acute hospital environment, recovery and rehabilitation, social care and home again. This was undertaken with different student groups such as nurses, physiotherapists, occupational therapists, physician associates, paramedics and social workers. The

findings from this evaluation, demonstrated that each professional group took repeated histories from a patient and that even beyond new roles like the physician associate, there was not even a level of trust between established practitioners (Iwaszko, Mitchel and Perry, 2017). The quote below is referring to this work:

ST1541: *it's an appreciation of what each other's roles entail… because paramedics, nurses they all do handover and from the transitions in care day project… it was evident that no one trusted the others handovers from the patient and because of that everyone was doing it again….there needs to be a fostering of trust between each profession…. so, everything doesn't have to be done again.*

The findings from this sub theme support the importance of the PA role development being part of a much larger workforce and educational strategy to embed inter-professional learning and teaching from inception of the student journey with role modelling of new practices. There has been much discussion in the literature around workforce strategy to support new ways of working (NHS, 2021) but there needs to be much more effective evaluation and development of inter professional learning, teaching and working practices at macro, meso and micro levels to ensure this happens and that future curricular and learning and teaching technologies and pedagogies are co-produced with practice partners.

In understanding PA role development, it was also helpful to create a sub theme around shaping the role and understanding how this might be more of an evolvement than as originally suggested a 'disruptive innovation'. In the findings below, the strongest value to the place in establishing the PA role was the constant discussion around how they

offer continuity in a clinical setting and do not rotate in the same way that junior doctors do and therefore offer consistent knowledge to a specific clinical setting.

5.3.3 Sub-theme 3: Shaping the evolution of the role/Continuity.

The PAs tended to see the role as evolutionary with an acceptance that it can take time to embed new roles in healthcare but what they could offer was the continuity that would support doctors and other healthcare professionals.

PA21598: I'd say it's an evolving healthcare professional just like…… the advanced nurse practitioner…. just shifting across into that zone…. considered a doctor's role where a doctor did everything before….it's becoming more open and now some of the skills have become a bit more transferable and that's the area that we are going into……we are there to help and not take over

And an acknowledgement that modern day healthcare requires a different type of workforce:

PA *217106-21708: back in the day…the doctors did absolutely everything…. today's role is covered by nurses, ANP, PAs…. workload has been spread over time and that's what this is …continue to spread the workload compared to before and now …. with less beds now and more sicker people …there's a requirement for more people and there's not enough doctors coming in …. again streamlining…. essentially this is a process of evolution ….you've got doctors who know everything …doctors and nurses, ANP , HCA's as well …very important and now Physician associate. another role.*

Consistency remains a strong argument for PA role development as healthcare relies on established practices and these only evolve for practitioners with experience and time. Therefore, if a PA does stay consistently in a clinical setting, they will be able to offer this and develop a depth of experience and knowledge that will develop as they move from novice to expert, a nursing theory that acknowledges that expertise comes in stages through experience (Benner, 1984). However, consideration must also be given for the need for PAs to re certify every 6 years to maintain their qualification and to do this they have to remain knowledgeable across the matrix of conditions that cover a wide range of conditions. This is another reason why general practice is a good fit for the PA as they have a strong set of generic skills (Ross *et.al*, 2012.). It is also helpful to see that the RCP (2017) has produced an employer's guide to PAs. There is reasonably a concern that If a PA becomes too specialist this may become a problem for them for re certification unless they keep their generic knowledge and skills up to date. This does suggest that PAs are best suited to roles like general practice, frontline medicine, acute care etc, where they would be more able to do this. The other consideration is that the role is still in evolution and the benefits of the consistency claim may well not be evident enough for stakeholders to understand the true value. The generic set of skills fits very well for the range and depth of where the role could be utilised across the vast range of health and social care services, indicating that there are very few areas where that the role could not be utilised. This was again becoming evident in the early literature and early research which looked at how acceptance of the role became more evident when there had also been an exposure to working with a PA and seeing this in real time (Drennan *et.al,* 2017). However, evidence remains limited and requires more

exploration to support stakeholders in adopting this new role in the confidence that it will not compromise quality of services. This was also a funding from the literature that suggested that without support at macro level, there would be little to no incentive to take the role forward (Drennan *et.al,* 2017).

This concludes the section on PA role development to answer research question two. The findings from this section do provide a number of recommendations for future research into this largely uncontested field and will be further explored alongside the next theme of innovation and change management which will explore the perceptions of PAs and stakeholders on how this role may be received in new and existing working practices.

5.3.4 Second main theme: Innovation and Change management.

Innovation and change management are highly topical areas of discussion when it comes to healthcare practice and there is a strong focus on innovative new ways of working (NHS AND PHE, 2017). One focus has been to learn from business and business models about how healthcare services may be delivered more effectively (Davis, 2011). In the context of this study, a number of sub-themes helped support where innovation and change management may play a pivotal part in the evolving role of the PA and in sub theme one, there were some interesting findings about embedding something new, which would be the PA role in healthcare:

5.3.5 Sub-theme 1: Embedding something new.

PAs did seem to feel that they had a responsibility to own their own journey and that they needed to lead by example and the embedding of their role was an important part of their work.

PA116103: more importantly its really our role more than anyone else ……we are the people that show the example of what the role is. So, it is our role more than anyone else's. It's a bit of everybody and teamwork so consultants allowing us to do certain jobs or give certain training to extend our knowledge …people …or patients allowing us to see them after you have explained the role ….it's a bit of everyone allowing a bit of lee way with something new and even though it's not new to everyone, it new to a lot of the public and patients.

However, there would also be a strong argument that PAs cannot do this in isolation and support would be required at all levels of the organisation and nationally to support. This also came across in the early findings in the literature (Drennan *et.al,* 2017; Jackson, Marshall and Schofield, 2017). More recently Health Education England have supported the role through PA ambassadors who are helpful in supporting organisations to see where the role could be utilised more effectively, but more work still needs to be done. Stakeholders' views about this sub theme will be picked up in research question 3 but from a PA perspective, there is a clear understanding that they do need to own that journey. This led to the creation of a further sub theme that would suggest an entrepreneurial approach may be needed to drive innovation and change and whether PAs are best placed to be the entrepreneurs for implementing this role?

This links to some examples in the literature narrative that demonstrated a number of ways that this could be achieved, for example the development of the 'black belt leaders' to offer strategic leadership and execution of change (Bedgood, 2018) or developing a culture of collective leadership, by empowering team building and a clear vision (Caulfield and Brenner, 2019; Rajan and Ganeson 2017) and the approach to social ecological theory at all levels by having individual interpersonal organisations that are fully engaged and working to macro policies (Gool *et.al,* 2017).

5.3.6 Sub-theme 2: Entrepreneurial ambassadors.

When asked whether PAs saw themselves as entrepreneurial ambassadors, there was a recognised acceptance that these early PA trainees needed to make both patients and other professionals aware of the role in order to shape the role for future PAs

PA11595-11596: The role itself isn't so much new but more that people aren't too aware of it. ……. I think it can be quite fulfilling to be one of the pioneers of that role for a person… it can mean that they have a nice positive experience of that role and that's what's embedded in them.

PA 11597: I think it can be slightly daunting that if you are the Pioneer of that role and for any reasons there are any problems….it can give a negative experience of you so that can be a big responsibility…. but I think that it is quite a good feeling generally.

The adoption of PA ambassadors is one example of how moving forward, PAs are used more strategically to promote the role but also from the quotes above, the PA students see this as a significant responsibility for getting this right as they fear the consequences

of a negative response. However, what is clear is that PAs were keen to be the pioneers of their own role and a recommendation from this study would be for a macro, meso and micro approach to increasing the awareness of the role and supporting PAs with leadership skills and an understanding of the structures in healthcare workforces at a more strategic level.

How patients may understand the role was a sub-theme for innovation and change as the more traditional roles of doctor and nurse are more commonly what patients are used to and it was interesting to see that PAs were keen to explain themselves to patients:

5.3.7 Sub-theme 3: Patient perspective

The following quote is insightful in that the PAs were concerned that they may not be accepted by patients but in fact that was not their experience, suggesting that patients were happy if they got the right care.

PA1069-1970: *I had a great experience most of the time, it was very welcoming from quite a lot of the doctors… nurses and the patients as well. I thought I might have a bit more of a problem with the patients as I thought I would have to explain the role more to them. I thought that would be quite difficult but on the whole, they were fine they just wanted to see a healthcare professional in general and so weren't too worried about the new role.*

This good experience may indicate that there may be a misconception that patients may not be happy with a new role . The PAs experiences suggest that patients are happy

with a competent practitioner, but it would be difficult to generalise from the opinion of two PAs. The literature narrative did reveal concerns that the PA role may be a political agenda to undermine the role of the GP (Jackson, Marshall and Schofield, 2017) which might suggest that the blockers are more likely to be organisational and professional threat rather than patient experience.

The PA also described a welcoming approach from doctors and nurses and on the whole very good experiences which indicates that there are organisations that embrace new roles and have a culture of managing innovation and change and where it would be helpful for good practice to be disseminated more widely to support the implementation of the role.

The next sub-theme that emerged through the theme of innovation and change management was the creation of acceptance.

5.3.8 Sub-theme 3. Creating acceptance

Creating acceptance was discussed in the literature narrative as part of the theory of change management which can take time to evolve. It was interesting to see the perception of PAs in understanding that sometimes it was not necessarily that they were not accepted but more to do with workforce pressures than resistance to their roles as indicated in the quote below:

PA 21279-21280: people are trying hard… the sort of pressures that they are under it is harder for them to deviate against…. It's mainly the consultants we are talking about here it's difficult…. to get another consultant in, it's not as easy as putting an ad out and

just getting another one in. Often there is more than one consultant per specialty, but they all have commitments…. might it be in theatres or in clinics…….particularly in the embedding of the role and the teaching etc but no I do believe that they are trying their best to help and support.

This does help to bring to light that innovation and change are not always resisted but where staff are under pressure, they may struggle to find the time to offer support. This is of significant importance as this was also shown by Regan and Shillitoe (2017) in the recommendations post the Francis report (Francis, 2013) to allow time for staff to lead which added additional costs to the organisation and therefore although there was strong evidence for such an intervention, it was blocked because of the financial pressures that had to be considered too (Regan and Shillitoe, 2017). To create acceptance, support is required at many different levels to allow the enablers of change to help embed the role and for new roles, this may require a financial investment. One of the clear findings from the literature narrative did suggest that a good way to enable acceptance this was to nurture a culture of innovation, allowing ideas creation, lean thinking and staff involvement as part of the journey, using patient focused outcomes as a measure of success (Koomans and Hilders, 2017) and to create an atmosphere of positivity through solution focused approaches (Bedgood, 2018). A recommendation of this study would be for a much wider strategy for learning from successful business models and new approaches to drive innovation and change and to implement this at all levels of the organisation.

The final sub-theme for this section was around the level of maturity of the PA students as they were post graduate students who had already completed an undergraduate degree and a level of work experience which helped them to respond to the nuances that may occur with a new role.

5.3.9 Sub-theme 4: Maturity

One of the very noticeable features of managing innovation and change for the PAs was the acknowledgement that the added benefits of maturity had helped them evolve and manage any negative moments in their educational journey and clinical practice experiences. Although at first, this did not seem relevant to answering the research question, it did support an understanding of their level of resilience in how they managed themselves in difficult situations and what interventions they put in place to manage resistance to their presence in the workplace, making comparisons to how they would have managed this as a younger student:

PA1177: I think that at a younger age I would have been more inclined to give up due to the negative attitudes that came across…. I might have taken it more personally…

PA1178: If I had been a younger person, I know I would have taken it to heart, and this would have had a negative outcome in just how my training was going. I think it does need a level of maturity to separate what people are saying to you from a fear or no knowledge about a role rather than to you personally as a person there.

This finding reflects that maturity brings additional life skills and will be helpful for PAs in managing change and innovation with understanding and solution focussed

approaches where they feel resistance and or negativity. Americans PA students are only normally accepted onto programmes if they have a level of maturity and life experience and medical degrees are only accessible at post graduate levels. This is different to the UK, where undergraduate medicine is offered at eighteen years of age as well as at post graduate level but more commonly the former. It would be interesting to compare the level of maturity and adjustment for a medical student rotating on wards after three years with a PA student who is likely to be four - five years older rotating through placements. The findings from this suggest that the level of maturity has helped PAs in contributing to the evolvement of their role.

The final theme for this section reflects the view that healthcare professionals are defined by their specific identity and discusses how important this identity is establishing the implementation of a new role.

5.4 Theme 3: Professional Identity.

Professional identity emerged as a dominant theme throughout the findings and this will be one of the major areas of recommendation for further exploration beyond this study. Every professional group has a professional body that regulates and validates their role, for example, nurses work to the nursing and midwifery code of conduct (NMC, 2020) and are registered as a nurse on the NMC register. This would be the same for allied health professionals who would be registered with the healthcare professional's council (HCPC) and belong to the chartered society of physiotherapy (Physios) and the royal college of occupational therapy (OTs), the college of podiatry etc. Equally doctors register with the General Medical Council (GMC) and Pharmacists

with the General pharmaceutical council (GPhC). This until recently has not been the case for the physician associate who is currently not regulated and although they are requested to join a physician associate managed voluntary register (PAMVR), this is not mandated and has in the findings been seen as a major barrier to the role (Williams and Ritsema, 2014, Drennan *et.al,* 2017, Jackson, Marshall and Schofield, 2017). The other major issue for PAs, which is affecting their acceptance into the workforce, is that without regulation, they cannot prescribe medication or request tests that use ionising radiation which is a further limiting factor (Williams and Ritsema, 2014). However, recent announcements have moved this view to a new level and regulation will be addressed moving forward with the GMC announcing they will be the regulator for the role in the future (GMC, 2020). The GMC were asked by the Department of Health and Social Care to regulate two professions and this is anticipated to start in 2022 (GMC, 2020) Following regulation, it will then become more likely that the PA will move to being eligible for prescribing rights. Regulation with the GMC fits well with where PAs seem to position themselves in the workforce and as a future regulated healthcare professional.

In the focus groups, when asked where a PA was most closely aligned with other professionals, the answers were predominantly to doctors or in some cases nurses but not necessarily any of the other professions, like physiotherapy or paramedic science. This might ask the question of how much exposure they had to other professions and was confirmed during the simulated scenarios. However, when the same question was asked in the semi-structured interviews, the emphasis was different, but this will be

picked up in the findings in research question three. Responses from the PA students below remain very aligned to the medical model:

PA 2222-2225.

'Probably with the junior doctors, mainly the F1s and F2's. I think we are a similar level to them… in terms of knowledge…..they might have more knowledge in certain conditions not covered by the matrix but in terms of the skills that you have and the jobs you are able to do, they are very similar, apart from the prescribing and ionising radiation which you can't do at the moment'

PA 1228

'doctor role is probably the most similar, purely because of the fact that we have been trained in the medical model, so the way that we do histories, the way we work is more similar to doctors but from a clinical skills stand point, I would say it is more similar to the nursing role as from that point of view we get to do more dressings, wounds and stuff like that'

Sub-themes emerged in relation to the importance of professional identity in defining the role of the PA and the effects that this may have on their ability to convince stakeholders of the need for their presence in the workplace. The first sub-theme highlights factors that have been acknowledged as limitations for the role.

5.4.1 Sub-theme 1: Limitations of the role.

The inability to be able to prescribe or have a regulatory body, came up repeatedly both in the early research literature but also with stakeholders and PAs. This limitation does

seem to have consequences for PA implementation and contribution over other practitioners, for example the advanced clinical practitioner who is regulated as a professional and eligible for prescribing rights. In one of the early studies by Drennan *et.al,* 2017), there had been some resistance from ANP's to the PA role suggesting ANP's were better placed to support doctors. However, there is even with this role, a concern that the advanced nature of this role is beyond the level of registration of for example, nurse , midwife or AHP and that the added responsibilities of advanced health assessment, clinical decision-making and prescribing should have separate regulation (Ford, 2019). This is an area that the NMC and royal colleges have been looking into in terms of at least credentialing roles and perhaps there is a significant piece of work that still needs to be done for all practitioners working at an advanced level, not just the PA. PAs learn a significant amount of pharmacology and therapeutics in their courses (Williams and Ritsema, 2014) and this restriction is clearly frustrating for them as indicated in the quotes below and although this is to be addressed, this does not help PAs in the current climate:

PA 11384: we can sort of do the motions of prescribing, we learn the drugs, we learn what dosage they need and what would be best for the patient but what we can't do is the signature.

PA 11385-11386: it can be slightly frustrating that it just that small jump that could help the role so much…. would make such a difference, for example…. one of the most frustrating problems for the GPs is not being able to prescribe… So being able to see the patient and make a management plan but then having to wait outside doctor's office

for a prescription to be made and signed…….So I feel that accreditation and prescribing rights would revolutionise the role from a time point of view.

Although this is an area that is looking likely to happen, the review of regulation and prescribing remains a lengthy process and is slow to evolve but will make a significant difference when addressed. This was also highlighted in research by Drennan *et.al,* (2017) and Jackson Marshall and Schofield*,* (2017) who identified this as a limiting factor for adoption of the role.

The next sub-theme emerged from a sense of overlapping roles and threat if it had been perceived that a PA role may super seed another professional role rather than be a complimentary addition.

5.4.2 Sub-theme 2: Overlapping roles/causing threat/disruption.

The following quotes from the simulated scenarios are examples where the PA did not have to work with either a doctor or advanced clinical practitioner. If either had been present, there may have been some confusion over who should have taken charge from a diagnostics point of view. It was also apparent that there seemed to be a level of acceptance that repeated history taking was perfectly acceptable although the example quoted did relate to patient safety where it would be reasonable to check thoroughly. However, this also challenges the need for a wider education and placement strategy to drive inter- professional learning and teaching and the development of trust between different practitioners as mentioned earlier:

PA2643644*: no, I didn't feel like…. that we were overlapping in a sense but that there was a role for us in that scenario it might not always be the case as you would have doctors involved etc but I did feel we were adequately trained with the knowledge to deal with those situations so I didn't feel out of place, I felt I was in the right place.*

PA1749: yes, there are a lot of handovers, there's also the triage nurse part of it as well…. but nearly every handover even if they do feel frustrating has a point even when people are busy it helps enforce the patient safety angle…. you don't want to miss anything and the patient was checked for allergies 3 or 4 times but I think that's the way it should be……you don't want to get to a point where you are about to administer a drug and you haven't checked that sort of thing. Therefore, it's great that it's been checked by more than one person, it's important that some aspects are checked by more than one team

There was a sense from the PAs once they had experienced the simulated scenarios that their role did seem to lie somewhere between that of the doctor and the nurse but not necessarily with any other professional as discussed in the quote below:

PA2646-648*: I thought there was more a degree of overlap between the role of us and the nurse, but I think it was a good thing because…. when it came to checking vital signs…. the fact that there were multiple people doing it allowed for a chunk and check method…. if there was only one person there, it is more likelihood of a mistake being made… the fact that there is more people doing it… there's less of a chance of a mistake*

happening…. overall it still feels safer and I think overall it takes less time. So, the overlap allows safety.

It could equally be argued that repeated checks may also raise the potential for mistakes and errors, depending on where this may be recorded and logged and whether information is lost or missed.

The last sub-theme for this section was around the need to have support for the evolvement of the role and the professional identity of a PA in practice at National level

5.4.3 Sub-theme 3: Guidelines at National level.

PAs and stakeholders did feel that more needed to be done at a National level to support the role and that this was a key factor for helping the role to be implemented more smoothly. This was also evident in the literature narrative where an all systems approach at macro, meso and micro levels was seen as key to research for successful implementation of new initiatives (Drennan *et.al,* 2017) and very specifically the need for national guidance and support for PAs to be regulated and have prescribing rights as identified in the quotes below:

PA11281: people working in the NHS are trying their best……what would help the role would be…… for example, guidance on the role… on a national level where they could go ah okay this is what we could do with you and the sense of…. having the role accredited… to define the role enough….to be a bit confident in applying things to the role. ….. it's about having that slight push needed from a national level that would help people to be a bit more comfortable with the role in general.

PA 1389: With regulation and prescribing for the PA it opens a whole new venture….at the moment a lot of PAs apart from those in accident emergency work in 8-5 … 9-5 roles…. with prescribing rights, it opens the role up to work on a complete rota…. it would be really welcomed by the consultants if PAs could work weekends and on calls and nights by themselves without having to be needing someone always to be there to prescribe for them.

The data to answer question two does demonstrate that PAs are working hard to contribute to their role across health and social care and that they understand that they need to be ambassadorial and pioneers of their roles. It is also clear that the level of maturity has helped them to overcome the more negative responses that a few of them received in the workplace, finding solutions to prove that they could be useful. They also were completely aware that other professions might be threatened by their presence and were keen to keep to a solid message of support and continuity not replacement of other roles. They were clear that they were not a new market but a complementary addition to the workforce. The PAs appeared to embrace innovation and change and were looking to prove they could ease the pressures for other professionals. However, there are some significant challenges to the role that need much wider support for the role to develop a professional identity and this was seen to be very lacking without either regulation or prescribing rights allowable for this role and that without a national push at government level and at every level of the organisation, the ability for the role to thrive would be greatly threatened.

There were many commonalities within the literature in relation to this and although not drawn out in the same themes and sub-themes, many of the barriers and threats to the role are undoubtedly due to a lack of clear understanding around the breadth and depth of the role, what a PA can and cannot do; what is the best comparison for testing the role, how can PAs work better with other practitioners. In addition, what is the workforce strategy for moving forward with this role, particularly when there has been a call for 50,000 more nurses (Ford, 2020) and 6000 more GPs (Nuffield Trust, 2021). Does new workforce strategy consider whether healthcare needs a completely different skill mix and a whole system review might be worthwhile? That said, the new Peoples strategy (NHS 2020/2021), the long-term plan (NHS, 2019) and the HEE workforce strategy (NHS AND PHE, 2017) all do firmly advocate new ways of working and an inter-professional learning and teaching approach to future services. If the education of healthcare professionals is delivered inter-professionally this will also drive the understanding of new roles which will help drive innovation and change and support role identity and understanding. The very limiting factors of regulation and prescribing need to be driven at national levels and with public facing information so that the public and patients understand that there are different roles beyond nurses and doctors. Patient feedback in these discussions seemed to be quite happy to be seen by a PA as they appeared to want first and foremost to see a competent practitioner.

The final method for answering research question two is my own personal observation of the simulated clinical scenarios which although they do not necessarily answer the research questions as such, they have been a base for discussions around inter-

professional learning and teaching and the potential dynamics across different disciplines and indirectly contribute to the some of the potential barriers and solutions for driving more seamless implementation of the role in the UK.

5.5 Analysis of simulated scenarios.

The sequence of events in the simulated clinical scenarios were only relevant indirectly to research question two: '***How are PAs contributing to the evolvement of the NHS and other healthcare organisations.'***

The simulated scenarios produced large data sets and useful outcomes and although they provided a number of observations and some excellent data sets, they did not necessarily link in full to the research questions other than through my own personal observation of the video which did give some insight into how different professional groups interact with one another.

However, it was applied, useful and relevant to research question 2 in the feedback which has been picked up earlier in both the PA reflections and the PA focus group and therefore, was captured within the thematic analysis for these methods. Despite no natural application to the research questions, it was a very useful exercise for understanding how a PA integrates with a multi-professional team and the dynamics, familiarity and understanding of both the PA and other professional groups in undertaking a clinical scenario.

The findings from the scenarios were analysed using a tool called Transana but as the specific detail in the analysis related predominantly to clinical outcomes and safe practice, this was not directly relevant to the research. These data sets would be useful for a future research project looking at skills and competence to undertake the role of a PA and an evaluation of student's interactions undertaking inter-professional learning and teaching. However, what was relevant and justifiable was the contribution of these scenarios to research question 2, looking at how the PA was integrating within that scenario to demonstrate where their skill set and contribution to a patient journey lay. To achieve a relevance to the study, I observed as a practitioner, how this group of students tasked to problem solve together, interacted to manage a patient journey. This was observed through re-watching and observing these scenarios on many occasions and looking at the data analysis from Transana.

This was subsequently captured and themed as follows:

- PA role development (research question 2)
- Innovation and change management (New ways of working)- (research question
- Professional identity (threats and barriers)- (Research question 2)

In total, there were four different clinical scenarios, ranging from emergency acute admissions to rehabilitation. The sample had four paramedics who were used in groups of two, three PA students, one student nurse and two physio students. The categories identified in the data collection were linked to the research themes with sub-themes

The simulations through observation, link to the following themes.

5.6 PA Role Development (theme 2):

5.6.1 Sub-theme: Filtering for role

In observing the students, each practitioner had something very characteristic and different that set them aside from other practitioners, For example, the PA tended to wear a stethoscope around their neck, very similar to a doctor and took a leadership role in clinical decision making which was accepted by the nurse handing over to a clinician. What is not clear is if a doctor had been present, whether this would have been a different scenario and the PA might have been perceived as a threat to their role. The paramedics role was to deliver the patient safely into hospital, giving a full and factual picture of what had happened. This links to creating a multi-professional workforce-and ascertaining what are the most appropriate skills for services that support the patient journey. In this scenario, the PA portrayed a role very similar to a doctor. What was also very evident was how the other practitioners seemed to accept this and try to work with it, even though they were unsure of how it worked. What was interesting about the scenarios was the emphasis on where each of the practitioner's strength lay and the different intentions between practitioners. For example, in acute myocardial infarction – the paramedic was accustomed to managing this scenario, as was the PA as both are trained to be front line practitioners whereas the nurse portrayed more holistic patient centred care. With the acute asthma scenario, the paramedic was confident in front line care with nebuliser interventions, the nurse confidently managed peak flow, MEWS etc and the PA intervened with diagnostics, tests and medication which were again more aligned to the medical model. From a

rehabilitation perspective, the two physiotherapists demonstrated a completely different set of skills that included: breathing techniques, mobility more aligned to nurse (who would support patient rehabilitation) than any other practitioner but very stand -alone but there was a clearer demarcation as a practitioner. One of the most interesting interactions was a scenario with a diabetic patient with abdominal pain- which was a 'red herring' – all of the students found this anomaly challenging but through excellent facilitation by the clinical lead, it produced a good multi-professional discussion at the end for all 4 groups of practitioners who were completely thrown by an uncharacteristic symptom.

The main observation that came out of this was how important it was to create a learning culture that is enabling and that although each scenario looked a bit 'clunky' as they were all slightly unfamiliar with working in this way, when tasked to reflect on a complex situation, they integrated freely, openly with a mutual need to understand for their own future learning. This is one of the many attributes of simulating scenarios in a safe environment.

5.7 Innovation and Change: Theme 3.

5.7.1 Categories and sub-themes: Communication, Assessment, Teamwork, Consent, Accountability, and Safety.

What was really evident through observation of a group of young students tasked to work together was that they rose to that challenge and although it was evidently clear that they had had little exposure to inter professional learning and teaching, they were

trying really hard to work out how to interact together. This really resonated with my own personal reflections of moving forward with inter-professional learning and teaching that it needs to be activated at the very inception of a career pathway and that it should be embedded in everyday future learning and teaching and that silo working is a core problem/barrier for enabling this. Observations also indicated that the students were still young and fresh in their professional journey and keen to want to adapt to new ways of working and they seemed to enjoy working together. This is further supported by the PA reflections on their exposure to multi-professional learning which demonstrated that they would like to do more.

Recommendations for future integrated care pathways and inter-professional learning and teaching should foster a culture of inclusion and belonging to support working differently to grow a workforce effectively using the full range of skills of each professional (NHS, 2019). Leadership for change should integrate interdisciplinary methods, a range of different clinicians, business staff to promote an inclusive approach (Bedgood, 2018). During Covid19, there has undoubtedly been a great deal of transformational change at pace to manage the pandemic and some excellent new working practices (NHS, 2020/21). It would seem very important to further develop and not lose momentum but to also ensure that leadership skills for new ways of working interact more cohesively between education and practice and be co-productive in developing the practitioners of the future to enable that change.

5.8 Theme 4: Professional Identity:

Professional identity was undoubtedly one of the most important and key findings from the observations, in particular how important it really was to each individual group to have that identity and this highlighted just how silo working might cause unnecessary issues in understanding and adopting new roles particularly if there is a perceived overlap or threat to any one discipline. This was also demonstrated by Jackson, Marshall and Schofield, (2017) who demonstrated the barrier and facilitators for new roles like the PA. What was clear was that all practitioners sign up to a set of codes that define them as a practitioner and absolutely relate to their professional identity which needs to be understood and encapsulated in a wider perspective. These sub-themes identify what was construed as important to their professional identity:

5.8.1 Sub-themes: Safety/Consent/Accountability/teamwork

It was evident that each student was working within the boundaries of their role, upholding the regulations of their professional bodies and following national guidelines. This was undoubtedly a common denominator across professions and many interventions were repeated several times to ensure nothing was missed. This linked into safe and effective practice and accountability as a professional discipline (Safety/Consent/Accountability).

Each professional was completely at home with their own professional agenda but there didn't seem to be a clarity on where the boundaries and trust lay with other practitioners.

Communication – This appeared disruptive as the students were clearly not used to working together, but they genuinely were trying to understand where inter-relationships could help to create a sense of trust. What was clear from the observation was that the patient, placed at the centre of care, had to repeat their history on multiple occasions which created a level of mistrust between practitioners that maybe could have been avoided if they were just more familiar with one another.

Teamwork: There was a real sense of wanting to work together, hampered by a traditional model of training that had disabled the ability to freely interact with each other, potentially by not having in place a multi-professional training and education or placement experience.

How each practitioner managed intervention and assessment was undoubtedly very different, the paramedic was clearly used to dealing very competently with a frontline emergency situation: the nurse worked holistically by encapsulating the whole patient journey, offering empathy and collaboration across the many dimensions of healthcare, the physiotherapists, a genuine journey of rehabilitation, recovery and discharge and the PA, the diagnostics, interventions and cross professional scenario management and by their own description and interface between the doctor and the nurse.

These observations are central to next steps in the implementation of a new role and these scenarios do demonstrate that the aspirations for workforce strategy, new ways of working differently, inter-professionally and more effectively (NHS AND PHE, 2017, NHS, 2019, NHS, 2020/21) have some way to go before they are realised. A recent study looking at how to implement an inter-professional learning curriculum, highlighted that

there is a significant way to go to implement novel solutions to managing this and that there was also a resistance to cultural change (O'Keefe and Ward, 2019). This is a key priority and finding from this study and universities will need to embrace this agenda to produce graduates for a future workforce.

5.9 Final reflections:

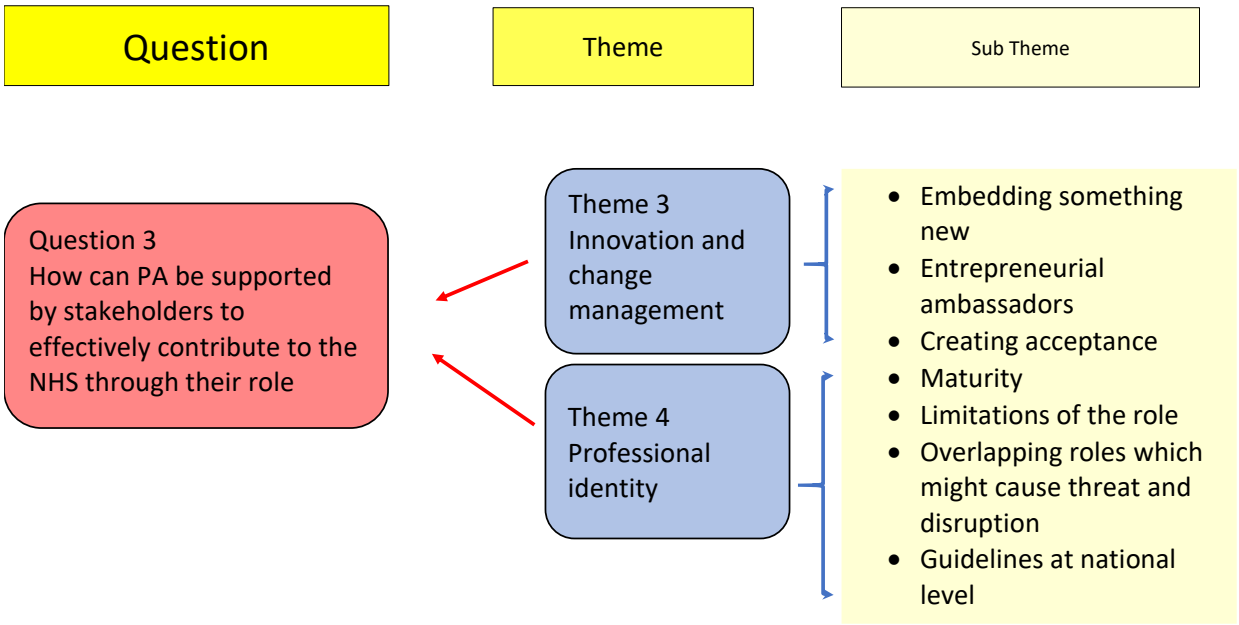
Observing how different professional groups interact is a useful tool to support answering the research question as it enables a culture of looking, listening, openness and understanding in both verbal and non- verbal interactions. For the simulated scenarios, it was the observation of human interaction that was the most telling, particularly in relation to natural human behaviours that may become embedded as part of an educational journey and specific to any one profession. These behaviours might then become embedded in future organisational culture or learned through practice-based learning which is a strong indicator that embedding new roles and working inter-professionally requires commitment from educational establishments in partnership with their clinical partners. Transformational change is bigger than just organisational change in the NHS, as educational establishments may also be responsible for educating students in silo's and not introducing a culture of inter-professional learning and teaching. What was very clear from the observation of these students is that to promote a culture of mutual respect and understanding, practice partners in NHS organisations and academics in education need to have an equal part in co-producing future collaborative multi-professional transformational change. I would argue that this is fundamental to moving productively forward with embedding

a culture for both new roles and more effective integrated care. This will require systems leadership, educational reform and high-level strategic policy influence. The contribution of these scenarios to the research question and implications for future practice is that it demonstrates there is a gap in understanding how different professionals interact with one another, causing a great deal of unnecessary repetitiveness, distrust and double checking of patient information. This is likely to be expensive and ineffectual and could be avoided with new ways of working that embed a culture of inter-professionalism, mutual respect and understanding (NHS, 2020/21). The PAs suggested that where practitioners had worked together, there was more acceptance of new roles but much more of this needs to take place to enhance this in the future. This is a real challenge for organisations and to new and evolving roles unless this is addressed at all levels of the organisation and driven by national policy. Research

5.10 Question 3 – 'How can Physician Associates be supported by stakeholders to effectively contribute to the NHS through their role'?

To answer research question three, two of the methods were used: the semi-structured interviews with stakeholders from other professions and the PA focus groups. In research question two, findings from the PA focus groups were predominantly used; conversely for research question three, data from stakeholders was predominantly used. Research question three asks '*How can Physician Associates be supported by stakeholders to effectively contribute to the NHS through their role'?*

Figure 6 - Themes and Sub-themes arising from Question 3



The first theme that emerged in relation to how stakeholders might be able to support the role of the PA related to innovation and change management for implementing a new role.

5.11 Theme 1: Innovation and Change management.

Similarly, to research questions one and two, several challenges were perceived to impact on whether the PA role would flourish or fail. This entirely related to innovation and change management for the adoption of new roles and services and whether this would be embraced or blocked. Sub-themes helped to support the overarching theme by digging more specifically into those enablers and blockers. Sub-theme one was again the perceptions of stakeholders for embedding something new in the workforce.

5.11.1 Sub-theme 1: Embedding something new.

Stakeholders felt that it was important for there to be clear parameters when embedding something new, particularly to ensure the avoidance of misinformation and subsequently the notion of mistrust. The following quotes cite a range of different perspectives from four of the stakeholder interviews. Interestingly the views differed between stakeholders but unlike the PAs who did not feel they were a 'disruptive innovation' some of the stakeholders thought that they were. In this first quote from the doctor, there is a clear view that sign- posting and navigation of resources was key to effectively implementing a new role and is an interesting observation as the doctor had first- hand experience of working with a PA in practice:

D116: '*The thing about all the new thinking around new ways of working is that you have the right sign posting and the right people doing the right job dealing with the right conditions to free up doctors to deal with the diagnostic stuff…. in the end making sure that the right conditions are covered.'*

This does imply that the doctor believes that it is their role to diagnose, without the recognition that diagnostics play a part in other roles, like the advanced clinical practitioner and the PA who are both educated to higher levels of clinical decision making. However, on a more positive note, there appears to be a shift in thinking, particularly in general practice that staff resourcing could be managed more effectively which is more likened to the suggestion by Lewis *et.al* (2016), that the GP takes a leading consultancy role in managing the triaging and navigating patients to the most suitable practitioner to manage a patient's condition, leaving the GP to deal with more complex

cases (Jones, 2018). This would seem to be an effective new model for general practice and potentially for other services. The importance of using skill mix effectively with new ways of working is also identified in the NHS Peoples Plan as a much-needed model (NHS, 2020/21).

In the quote below from the midwife, there was a sense that the support also needed to be through educational establishments, tasking course leaders all the way through to a professional network of support to embed a new role:

M11319: I would have thought that the people who lead the courses….the programme lead….there should be a network like they have in other professions, where they have the conversations and the dialogue. I think the regulating body with the chief nurses, with…. Health Education England.

The nurse expressed a view from the standpoint of the advanced clinical practitioner and how new roles did fit with workforce re modelling discussing the five-year forward view (NHS, 2014) and including the role of the advanced clinical practitioner in new ways of working:

N111-114: my perceptions will be more academic than clinical in terms of how I see them in clinical practice and because of the changes in healthcare in terms of new roles and the 5-year forward plan…. you have your advanced practitioners and now your physician associates bringing innovative new roles and these are new roles…my perception is that these innovative roles are to take on aspects of practice that perhaps other practitioners used to do, so for example, history taking and physical examination by Junior doctors but it is not that they are mini doctors…..they are doing a new role

taking on some of the skills of another professional group but developing their own professional group into an integrated team and ultimately for the benefits of the patient really.

This comment reflected that the nurse academic saw the need for new roles and for integrated teams and an understanding of current healthcare policy around new roles and new ways of working (NHS 2014, NHS AND PHE, 2017). However, she was equally aware that introducing new roles might bring a sense of threat that may cause barriers to implementation:

N1217-N1220: Where people perhaps feel threatened is because they don't understand how the other professional groups fit into that jigsaw…. I guess then you can have those blockers put in and..…. if you have someone who is in a clinical specialist role who isn't an advanced practitioner and then a PA comes in, they might feel their jobs being taken away from them so that's partly about…. leadership of teams and having the right leaders in place to drive things forward and it comes back again to organisational culture.

Again, this was a forward-thinking comment that reflected that as an academic, the stakeholder was working through what leadership, culture and team management might take away some of the perceived threat from other roles. This was discussed at length in the literature narrative, particularly for managing teams, involving staff in change management processes and working through challenges systematically (Willis *et.al*, 2014, Manley *et.al* 2014, Dight and Peters, 2015) . The next quote from the nurse did suggest that the PA evolvement would be a 'disruptive innovation' in the UK but

that it would also evolve over time. This doesn't necessarily align with the way Clayton Christensen describes 'disruptive innovation' with a new market replacing an old market (Christensen, 2016) but more of what needs to be put in place to provide sustainable solutions (Christensen and Raynor, 2003).

N1649: I think it is a 'disruptive innovation' and it will evolve overtime, PAs have been in existence since the early 60's in America so for the UK it is probably a disruptive innovation and our healthcare systems are different to America anyway…. but it's also about the whole workforce planning and realising that we haven't got enough nurses in the system or enough doctors …… perhaps we could do something differently with the end result being good patient care and patients getting what they need…. I think it's a bit of both…. it is disruptive and hopefully over time once people understand the role and see the benefits of the role it will evolve further.

The technician also had a similar response to the nurse but again agreed that support for implementation was necessary:

S1754: *It could be a disruptive fantastic launch of a new role… and improved health care system…. at the moment with the attitude of other students and the public…. it will just have to evolve…. if it was branded and launched effectively it could be a great opportunity.*

The second sub-theme was again related for the need for entrepreneurial ambassadors to support new roles in healthcare.

5.11.2 Sub-theme 2: Entrepreneurial ambassadors

There was a sense that it was imperative for certain skills to be embedded for PAs to be able to be entrepreneurial in their roles and drive their profession forward. The quote below from the doctor provides a useful insight into possible solutions:

D1319: They need training in assertiveness…. leadership training……. standing up for themselves, going to conferences, getting the message out there but in terms of leadership this is a group of professionals who will find it difficult finding a niche…. they need to organise as a professional body.

However, again drawing back to the importance of professional identity. The midwife also felt the PAs needed extra skills to help them manage their role:

M1212: I think they need to know how to sell yourself and face the challenges of people not being very nice to them and asking them why they are there…but people have done this before so they will be able to do this again.

Although this is a concern, the PAs discussed how their level of maturity had helped them deal with any negativity they may come across. However, it would be unfair to generalise that this would be true for all PAs as the sample was small and other less confident students may find this very difficult. These findings also align with the need for education and training in resilience, which seems to be a key factor in general for supporting health and well-being within modern day healthcare arena (HEE, 2019). Resilience is a crucial characteristic for high performing leaders and requires teams to manage well during adverse conditions to be able to bounce back from setbacks and

sustain high levels of energy, this is a challenge to most organisations, but it supports the prevention of burn out (Kohlriseser, 2014). Leadership was a major theme in the literature narrative and reflective that this is a key factor for leading change and innovation successfully in healthcare situations, preferably managed at macro and micro levels (Reay, Golden-Biddle and Germann, 2006, Kesler, Heron and Spilsbury,2017) and the importance of education for clinicians where leadership is not necessarily part of their learning journey or a skill that comes naturally to them (Long and Spurgeon, 2012). Addressing these imbalances may well help to resolve barriers to change management and maybe instead of describing new roles and services as disruptive, there may need to be a culture of managing change well and removing cultural inertia, which does remain a significant challenge in healthcare currently (Selivanoff, 2018).

The midwife also indicated that a student could struggle to be an entrepreneurial ambassador while in training and may not have much of a voice while training:

M1 1321: But it's very hard to sell your own role while you are training…. It's not until they are qualified that they would be able to do that.

However, this should not reflect the ambitions to encourage NHS staff and students to feel free to speak up through different mediums and educationalists should encourage this type of leadership skill with students to prevent such disasters as seen in the Francis report (NHS, 2020/21).

What this does reflect is that a number of professional groups do have support post qualifying through preceptorship courses and whether this needs to be embedded in

organisations with a change of direction for applied skills in leadership within or spiralled through their course, or the potential for specific preceptorship courses that provide leadership skills for new graduates in healthcare organisations.

The technician however, seemed to think that PAs already had leadership skills and may be an advocate for other roles in healthcare and that the PA may be a good ambassador for managing this:

S1437: the physician associate…. could show professions…. bridge that gap… have an understanding of the challenges that nurses face… the challenges the doctor faces…. could be a fantastic ambassadorial role.

What is clear from this section is that embedding new roles and being an entrepreneurial ambassador is about leadership for managing change effectively, to avoid the notion that a new role is disruptive and taking away from other practitioners. Evidence from the literature concurs with this and the importance of organisations learning from business models that support innovation and change (Davis, 2011, Dyer, Gregson and Christensen, 2011) and LEAN techniques for more effective management of services within health (Davis, 2011). The stakeholder responses to sub-theme three which looked at the patient perspective yielded some different responses to the PAs in the focus group.

5.11.3 Sub-theme 3: Patient perspective

From a patient's perspective, there were some interesting responses from stakeholders and in particular, the doctors response below is potentially a good way of raising

awareness to the public and has been done in other dramas and soaps to promote new roles, for example, casualty now has an advanced clinical practitioner in the accident and emergency team but the suggestion is also about making it clearer to patients who may not understand all the different roles in healthcare:

D1324-D1325: Maybe you need to put one in EastEnders….so that people know who they are…. we ask the receptionists to suggest to patients that they see someone from the urgent care team rather than a doctor and then the patient feels better… we need to do a piece of work about what doctor support there is.

D1326: I think they are confused but we have posters up, but they don't always know what a minor ailments scheme is…

This would seem important because without a more overt explanation of the PA role, patient confusion will continue to put the implementation of the PA role under threat and will not create for example, the same awareness that the PA role has in the American healthcare workforce.

And when asked if patients want to see a doctor or would be happy to see a competent practitioner, the midwifes responses were interesting:

M1425: I honestly don't think the public mind as long as they are looked after…. The only thing is that if they can't prescribe that will delay…. it depends how well organised they are... but I honestly think that the public just want to be looked after …and they probably think they are doctors.

M1428: I don't think the public really mind as long as they are seen quickly and efficiently in a caring and compassionate way.

However, the nurse did feel that this may be a generational issue as well for certain patients who would expect to see and doctors and would not understand who a PA was:

N1540-N1542: I think it probably depends on the generation of the patient because if I think of my grandad when he was alive he would have liked to have seen a doctor because he knew what a doctor was and so probably the older generation don't quite understand some of these innovative new roles but the younger generation have different perceptions and just want someone who can fix them and I don't think it matters…..they want to know that the person they are seeing knows what they are doing… they are competent and can make decisions…

New roles might be generational in their overall acceptance, but a competent practitioner does seem to be what the public wants. The paramedic also felt that it may take time for the public to understand a new role in healthcare:

P1 214: When the public can… see a medical professional when they want to see somebody and when they have a better understanding of what the role entails…. that these people are qualified to do what they are trained to do then I think the public will start to accept them, but it may take a little while.

What is clear from sub-theme three is the importance of ensuring there is enough public awareness and understanding of new roles in healthcare and although the notion of having a PA in EastEnders' or another drama TV series might sound controversial, it may well be one of the many ways of beginning to raise awareness of new roles and just

reinforces the message that for a new role to be implemented there does need to be an all system approach in organisations and a culture change for new ways of working (NHS, 2020/21) but also with the patient at the centre of their care, it is also imperative that their voice is heard and that there is enough media exposure, perhaps more likened to a documentary on the role to create that awareness. Certainly, the video that was released by Health Education on 'a day in the life of a physician associate' was an excellent way of showcasing the role.

Sub-theme four relates to creating acceptance which supports the other themes and management of innovation and change management.

5.11.4 Sub-theme four: Creating acceptance

Stakeholders put forward their views on how PAs might eventually be accepted in their roles or perceived as a threat to another role and some of the terminology that might not be helpful to explain new roles. The barrier to prescribing rights again was cited as a major problem for their role evolvement:

D1320-1323: *I haven't noticed it yet but there may be a bit of jostling between nurse practitioners …there are many different types of nurses/extended nurses…so there is a need for PAs to explain themselves and their role…I don't think the term non- medical prescribers helps and of course they cannot prescribe and they are not doctors… they should be defined by what they are and this is a piece of work that needs to be done*.

The midwife also felt that there would be problems within organisations in accepting the role, again citing the concerns that would be raised in relation to regulation:

M110: that depends on whether the NHS and organisations let them in….they should be regulated…. it feels like they have been around for a while ….but they have not. You look at what they do, and you think….my goodness the autonomy they have the responsibility they have its incredible…I hope it will grow, I hope it will be a profession for students to look to…. I can't see it right now.

The midwife also acknowledged that acceptance would take time and may vary in different organisations and practitioners may not see the point in a new initiative

M1 1321: Depends on the organisation. I do think it will evolve over time because I don't think it will go away… a lot of people will see it as a disruption and just won't see the point and will be challenged... and worried by it instead of seeing the space for them.

The same was for the nurse but with an acknowledgement that the role was also reliant on managing workforce planning effectively and that PAs were adopting innovative approaches and could be the change agents to create that acceptance for a new role:

N1212-N1216: it depends on the trust in a way and their workforce planning and... roles that are opening…. some of our physician associate student graduates have been instrumental in change… you are probably going to have some that go into their job and are good…. the game changers and will really fight for change and innovation but you probably won't get everyone in a cohort who will be like that…. it probably does depend on where the physician associates are working… and how supported they are by their trust or the GP practice… to initiate change and bring innovation… if they are supported and in that kind of environment where actually workforce planning is supported then they could absolutely flourish.

The paramedic felt it was essential that more was done to support public awareness of the role to develop a level of trust. This was also a common theme in the early research studies that demonstrated that trust developed over time and exposure to working with a PA (Jackson, Marshall and Schofield, 2017).

P1 1425: the first main challenge…. getting the public to understand what they do and that will largely depend on how their services are sold to the public whether its GP surgery whether its pharmacist whether it's in the care home… it's going to be a case of members of the public seeing what they are doing and trusting….

The technician who worked with all the different student groups felt that the PA would be able support other professionals to challenge hierarchy and it was an interesting perspective that PAs might be able to support nurses to enable that:

S1 434: I think physician associates would do really well to bridge that gap between GPs and for example nurses and support staff such as myself to break down those barriers and I've talked to nursing students but I know they've had difficulty challenging doctors they perceive them as rude and there is that hierarchy and they are frightened of challenging authority but they feel that they've had to and I know at this university this is encouraged.

This does rather imply that doctors are more likely to accept a PA over other professions with the PA reporting good experiences.

This section looked at how stakeholders viewed the importance of innovation and cultural change management for new roles and as identified in research question two, there are many factors that could contribute to allowing innovative new roles to flourish

but this would be hindered without strategic overview of how to embed them effectively. PAs were identified as potential trailblazers for their role, but stakeholders felt more support for the role needed to be communicated to patients and the public. There was also the identification of the limitation of prescribing and regulation that is a repeated concern throughout, and this will be discussed more fully in the next theme looking at Professional Identity of the PA.

5.12 Theme 2: Professional Identity.

Professional identity does seem to present a key challenge to how the role is viewed by stakeholders and the most effective approaches to support the implementation of a new role. All the stakeholders, except for the technician, came from regulated and recognised professions and identified this as a significant barrier for PAs. This is further discussed the next sub-theme.

5.12.1 Sub-theme 1: Limitations of the role.

The doctor was acutely aware that there would be confusion about the role and there needed to be role demarcation and understanding of the boundaries ensuring that the PAs do not work outside of their scope of practice. The same doctor did also report earlier that despite these concerns, the PA did seem to have a strong awareness of this:

D1318: Most people don't know what a PA is and we work in healthcare and then there are boundary issues around knowing what your role is and being careful to call for help and not to work outside your competence and what do you do when you offer advice and the advice isn't agreed, what do you do then?

The Nurse raised the common concern about the lack of regulation and ability to prescribe medication and how once this has been agreed formally, lifting this restriction would transform the role dramatically:

N13222: they are not regulated so whilst they are still in that situation, it is going to be difficult but there are elements of the role that could be extended… for example prescribing and if they were regulated and they could prescribe then that role could be much bigger in terms of where it fits in patient care.

Although often discussed under national guidance, the inability to prescribe does seem to impact heavily on the role and would give more autonomy to the role if this was enabled. This did seem to be the overwhelming opinions of the nurse, paramedic, midwife and doctor and at least there seems to be some progress now that the GMC have agreed to regulate the role.

N1324-N1425: there are barriers for the PA and there are aspects of care that they can do well and then they come to a block because they either can't do that next bit that might for example allow that patient to go home…. and they have got to go back to their GP colleague, consultant registrar… who will then write a prescription… that is a barrier to providing holistic care…. once that barrier has been taken away then they could have their own caseloads…

P1215: it would be nice if they could be regulated and could prescribe…. it would give them …more autonomy… it would give them a lot more credibility….as long as they can't prescribe... although they can diagnose, without prescribing… it renders them a bit powerless …. restricts their role in being able to help with the acute care.

The next sub-theme relates to other professional groups feeling threatened and again the boundaries for where roles overlap

5.12.2 Sub-theme 2: Overlapping roles, causing threat and disruption

It would be possible to assume that some professional groups would be concerned that the new role of the PA might threaten their own place in the workforce and that this should be handled carefully. Equally it was also clear that there was a sense of trying to understand the role boundaries and recognising that other staff may feel threatened or concerned for patient safety for example. This was clearest for the doctor who had worked closely with a PA and had been able to test those boundaries and develop a level of trust. This was also seen in the research by Drennan *et.al,* (2017) and is reflected in the following quotes from the doctor:

D112: We were worried about how often we would have to come out of surgery to support her, but it fits very nicely between the role of the pharmacist with minor ailments and one of our advanced nurse practitioners…. she sits between the 2….she can't prescribe, and she can't request x-rays, but she can manage minor ailments and she can manage this very well. The challenge has been with the receptionists to make sure that they book in the right people for her to see but that's been fine.

D1318: Most people don't know what a PA is and we work in healthcare…then there are boundary issues around knowing what your role is and being careful to call for help… not to work outside your competence and what do you do when you offer advice and the advice isn't agreed, what do you do then?

The midwife was concerned that her professional group would feel threatened by a PA which is why clearer understanding of the role was pivotal to forming relationships with other professional groups:

M 1211: midwives feel threatened by anyone who comes in and attempts to tread on their territory…. midwives see themselves as autonomous and professional…. they can't see the place and maybe this is the same for nursing although maybe not as they are probably more open to this…but that is just an impression I get. PAs need to market themselves and show where they can form links and allies rather than take over a part of a role.

But for the paramedics, they saw this an opportunity to develop their own career which was interesting and that this would open new opportunities for them. This was also interesting as the other option for paramedic development would also be advanced clinical practice but in this scenario the paramedic saw themselves very aligned to PA as a progression route:

P1321-P1322: I think the paramedics would take very kindly to them…. It's going to be offering a progression route for paramedics and…. progression for the paramedic… at the moment is quite stifled-it's very restricted so having something like PA… will give them a direction that they can go towards so yes, I think they will be widely accepted ……absolutely.

The sub-theme demonstrates a number of different views on how PAs might be accepted into the workplace and raised a number of different issues, but the main ones do appear to be around awareness, exposure, understanding role boundaries, finding a

niche that doesn't threaten other professional groups and growing an alliance of support. This fits with the constant theme of managing implementation of the PA role at macro, meso and micro levels to ensure PAs are part of workforce planning, they are regulated, there is a campaign for public awareness and qualified staff and new students are embedded and involved in a culture of inter-professional working practices to produce high quality and efficient healthcare. This resonates with workforce plans moving forward as highlighted in the early work of Imison *et.al*, (2016), The Kings fund, 2015, the NHS five year forward view (NHS, 2014), The draft workforce strategy (NHS AND PHE, 2017) the long term plan (NHS 2019) and the Peoples Plan (NHS 2020/21) and this also leads in to the next sub-theme looking at national guidance to support the role.

5.12.3 Sub-theme 3: Guidelines at National level.

Through every aspect of the data analysis, guidance at national level was deemed a key issue for the professional identity for this role. This was no exception for the stakeholders who expressed concerns about how national guidance could better support the implementation of the role and regulation and prescribing were again a key theme.

The quote below from the doctor is quite telling as professional titles are 'protected'.

D1216-1217: They don't have a regulating body, so this makes it very difficult for them to have a sense of identity and they don't have a protected title. What do you tell your mum, they know what doctors, nurses and paramedics are but what are they?

With the midwife, endorsing regulation as a means of professional recognition in the workforce.

M118-119: Yes, unfortunately I do…. because most other professionals are regulated, and I wonder why they are not …. it gives you an affiliation and a status which is what I think they need…… there are not many if at all professions who are not regulated.

And the nurse cognisant that there are so many new roles in the workplace that this is very confusing for the public.

N1546: there is confusion and people within healthcare do not necessarily understand unless there has been a campaign within the area to explain all these different roles. I am not sure everyone understands and not what advanced practice is… why would they understand PA and NA unless they have taken some time or been informed about what those roles are….

And for the paramedic, the importance of other professional groups understanding the PA role in order for them to maximise the potential of the role as there may be a risk of this being blocked due to fears around regulation or a miscommunication on the scope of the role.

P1426-1427: another challenge will also be with other healthcare professionals being able to understand what their role is and what they're doing…. allowing them to be able to do their job…. . if the information is out there …. then hopefully they will be quite accepting of them…. But I don't think it will be easy to start with.

The technician also raised a good point around adding positivity to the marketing of a new role and that it's not just a substitute to fix a current workforce crisis.

S1 751-753: *I do think there needs to be culture change and it needs to be branded as a positive new additional role to what we already have not just slotting in something to plaster over the cracks…. It needs to be launched as a new positive role that's supports what we have and makes the patient journey more efficient and quicker from the outset.*

The final sub-theme is a new sub-theme for this section and looked at the perspective of what seems to be different about a PA

5.12.4 Sub-theme 4: What's different about a PA.

This section highlights the extra benefits of the PA role over other practitioners. The PAs described themselves as offering continuity and support to the NHS, not as a threat to other roles but what they didn't discuss was that a PA has a very generic training that spans a matrix of conditions that cross the life span, where other specialist roles can be more discipline specific and therefore more restricted in the breadth and range of the types of patients that they see. This was noted in the following quote from the doctor:

D118*: For example, the nurse practitioners do not see breast lumps, mental illness or children but the PA will.*

Other stakeholders also saw general practice as a good fit for the role but highlighted other areas where PAs could make a real difference:

M115: *I really do see them in GP surgeries, I have seen them in certain acute settings medical and surgical …..a bit like that consultant nurse role but with a different*

autonomy…….should be on a par with other professionals and have their own identity and not seen as a substitute…

N115-116: *general practice and primary care and…. social care…. you could have them in nursing homes, there is no reason why you couldn't have a resident physician associate in a big nursing home because what that might do is prevent admissions to hospital…what it might also do is enable discharge from hospital and get elderly patients back into social care situations…. From a GP perspective… they could fit in anywhere and in an acute trust because of the consistency of the role… I know some of them will rotate to begin with but then they will choose a speciality and stay in that speciality and develop as a clinician maintaining a consistency whereas your junior doctors will rotate and come in and move on…. the PA role is a similar role to nursing in that the nursing team will maintain that consistency, but their role is different to a nurse.*

P111: they are…. like an intermediate between…. GPS… people in minor injuries… so they've got to be qualified professionals coming from lots of different disciplines using their skills and experience…. and, to provide acute medical care to the public.

There seemed to be an acceptance that the different backgrounds that a PA may have before coming into the role may add a new level of diversity that would be helpful

PA1531: PAs coming from lots of different areas… means they are going to have… different experiences and all those experiences will help to develop the role even further……. and seeing where the gaps are……. part of the multidisciplinary team… they are the ideal people to do it really.

The skills technician had a very different slant on the PA role as it was new in the simulated areas

S1 124: In terms of preparing them to go out of their role…. they seem to have so much equipment and many different skills…. When we prepare paramedics or nursing students it seems very clear what their role is and obvious what equipment they need…... physician associates…. we put out so many different pieces of equipment… they need to know so many skills, it seems they could go slot in a lot of organisations…. although it seems to be the general perception that they will just go into GP surgeries and help doctors.

This concludes the section for research question three where stakeholders raise their concerns for the development of the PA role if the environment for their implementation is not managed at a national level to support their regulation, professional identity and ability to work effectively. Stakeholders were supportive with the way in which PAs could support the workforce although they could see there may be issues with other professions around professional boundaries. Although the GMC have now agreed to regulate the role this has been very slow in implementation and poses a significant threat to the evolvement of the role. Stakeholders did acknowledge the role could be disruptive but that it could eventually evolve overtime, although the doctor was not so sure. There was also a recognition that without a protected title and clear national guidance with public involvement, this would provide limitations and significant threat to the role. Stakeholders also acknowledged the importance of innovation and change and leadership through change, allowing PAs to find their niche

in the workforce. It was recognised that NHS pressures and the amount of change does cause resistance to new roles. In relation to how they might support the implementation of the role it was felt they needed to be much greater awareness raising which was also identified in the literature narrative (Drennan *et.al,* 2015). This might be achieved by adopting a positive culture of change in healthcare organisations as cited in the literature narrative and by being brave in creative thinking ideas creation and lean thinking (Dyer, Gregersen and Christensen, 2011). During Covid 19, the NHS has responded to completely new ways of working in drastically tight timeframes and NHS staff have adapted to new roles and new ways of working at pace (NHS 2020/21). It might be hoped that this level of innovation and change remains as a new culture in the NHS which will be extended to the growth in new ways of working acceptance of new roles and efficient, cost effective, high quality healthcare (NHS 2020).

5.13 Final reflections:

Jones, (2018) suggests it's not possible to predict a future healthcare system but equally suggests it is unwise not to challenge shaping its future. He goes on to say that a future healthcare system should be based on the values of 'equity, inclusion, social justice and compassion,'

The NHS is also made up of hardworking and committed people who are trying to work in an organisation that is systematically flawed (Jones, 2018). Morale is at an all-time low and recruitment and retention to the NHS reaching a critical point (Kings Fund, 2015, Jones 2018, NHS, 2020/21). The role of the PA looks to work well across a range of areas but does seem a particularly good fit for general practice.

Lewis *et.al* (2016) pioneered a controversial article in which general practice would be re-designed into a 'Roundhouse' with the General Practitioner taking on the role of the Primary Care Consultant working with Physician Associates, Advanced Clinical Practitioners, Occupational therapists, Pharmacists, Physiotherapists, Nurses, Counsellors and Social Workers. A true multi-professional mix where the GP had protected time to support the range of practitioners seeing patients who had been triaged to the most appropriate practitioner thus reducing the culture of repeated history taking as patients are moved from one practitioner to another (Iwaszko *et.al*, 2017). Jones (2018) re-visits this model and suggests that this is a model which supports the GP forward view (NHS, 2015) and allows for GPs to support leading a complex team as an expert advisor- a role that would potentially make general practice more attractive to both the medical and the non-medical workforce (Jones 2018, Lewis *et.al,* 2016). It would be easy to see how this could work for the Physician Associate who aligns themselves more closely to a medical professional than to any other professional and because their training is of such a generalist nature (DH, 2012). It would also support the training and education for a future workforce where the Primary Care Consultant could have time to support the development of the wider workforce. This would also be excellent for the student in practice who could call on the specialist knowledge of a GP to be an advisor and work with other professional groups to break down the threats to professional boundaries and develop a culture of collaboration and mutual respect. This could be described as creative and innovative design thinking and a new business model in healthcare innovation (Dyer, Gregersen and Christensen, 2011) to meet the demands of the primary care workforce and could be designed to meet the

principle of lean thinking (Davis, 2011). This model is one of many ways that could potentially help embed the new role of the Physician Associate and ease the concerns that were clearly raised in the focus groups in relation to how busy medical professionals are and how it was difficult for them to spend time training them. It would also support other healthcare professionals to implement new ways of working with their roles into general practice aligned to future workforce strategy (NHS AND PHE, 2017). Jones, (2018) also suggests that the professional bodies can block innovation through traditional ways of thinking and this needs to change to unleash a true model of inter-professional learning which provides better patient care through better collaboration across the professions. He also discusses the onset of the technology age and the slower uptake of such use for tele-medicine and other ways of managing health care. This has changed demonstrably during Covid19, and examples of large-scale transformational change made at pace (NHS, 2020/21). The NHS has reached a pivotal point to move forward with further technological advances in healthcare. Medicine has changed dramatically with sophisticated machinery capable of making a diagnosis (Jones, 2018). This is different to the early roles of doctors where most of the diagnosis was through history taking and examination with a stethoscope.

General practice with the right multi-professional mix could become a very attractive place to work and could be a fulfilling career for GPs who could lead increasingly large groups of differing profession, particularly as practices merge and become larger organisations (Jones, 2018). However, to achieve this the 'BMA, NHS and Universities' must relinquish controlling behaviours and start to embrace the revival of the NHS

(Jones, 2018).The Kings fund, (2015) also support the notion that primary and community care will improve with the advent of multi-disciplinary working and a more responsive and flexible workforce structure that thinks beyond traditional ways of working. This would address the concern about GPs and early retirement but also promotes the need for more generalists which should promote the role of the Physician Associate who is a generalist.

The centre for workforce intelligence shows gross undersupply of GPs in relation to demand for services rather than from a sustained recruitment plan and morale is the lowest in this group of professionals as expansion of services is what is required (Kings Fund, 2015). Drennan *et.al,* (2015) undertook a series of studies at macro, meso and micro levels that found that PAs were effective and competent in the workplace, described as 'mid- level practitioners but they need regulation and prescribing rights to maximise their role. Since the beginning of this research, regulation has now been agreed with the GMC and it is hoped that prescribing rights will subsequently follow. PAs did show that they were competent and cost effective and despite good outcomes from this NIHR project, PAs are still not evident enough in workforce policy and plans which suggests greater awareness and organisational infrastructure is needed for this role to be effectively placed into workforce plans. This was wholly endorsed by the views of both the PAs and stakeholders who feared that without this intervention, the role could fail.

Chapter 6. Conclusions and Recommendations

The aim of this research was to explore the challenges of implementing the role of the PA into UK healthcare practice and to understand how PAs are contributing to their evolvement, providing recommendations to stakeholders on how role implementation can be supported. This study used a qualitative approach with narrative inquiry in three out of four of the methods, which were semi-structured interviews, focus groups and PA reflections and ethnography for observation of the multi-professional clinical simulations. Three research questions were posed and answered from the data analysis of the four methods and this was presented in chapter 5. This final section reviews the research questions for the thesis and summarises the contribution to new knowledge for both theory and professional practice and will provide recommendations for future research . This section will also contribute to new knowledge on how to support the implementation of a new role. The research questions were designed to meet the aim of the study and will be summarised.

6.1 Research question 1:

What perceived challenges exist to effectively implementing the Physician Associate in the NHS?

This question was answered by thematic analysis of the data which elicited a key theme related to organisational culture. Sub-themes emerged to support answering the question and to contextualise the specific areas of challenge and these related to workforce pressures, resistance to change and innovation and creating a workforce

identifying acceptance and threat. The data demonstrated both challenges and positive experiences by PAs. The challenges, however, are multi-facetted and relate to a need for system wide leadership and a national approach at macro, meso and micro levels to effectively implement the role. Challenges were identified as a lack of understanding of the role which could lead to threat and resistance. PAs were more positive about these challenges and demonstrated a level of maturity in addressing them and being the solution to the challenges whereas stakeholders were concerned about the sustainability of the role without a level of national support. Recommendations are to create a future workforce with a better understanding of new roles and where they can add value and, to adopt new business models and new ways of working for effective, efficient patient centred practices.

6.2 Research question 2:

How might Physician Associates contribute to the evolvement of the NHS and other healthcare organisations.

Research question two was much more complex to answer, with three main themes that emerged which were supported with sub-themes. The main themes related to PA role development, (with sub-themes, working with doctors, offering value for money, multi-professional patient centred approaches and shaping the role through offering continuity); Innovation and change management; (with sub-themes related to embedding something new, entrepreneurial ambassadors and creating acceptance). The final theme was related to professional identity, with sub-themes addressing the

limitations to the role, overlap with other roles and the importance of guidelines at national level.

The findings to support research question 2 showed that PAs were working hard to be the pioneers and ambassadors for the role, and this was helped by the fact that they were post graduate students and had a level of maturity that allowed them to see past negativity. They were aware that they may be considered a threat and were determined to ensure a constant rhetoric on how they would be complementary and offer consistency. PAs seemed to embrace innovation and change by wanting to prove they could be helpful, make a difference and develop a level of trust with other practitioners. Regulation and prescribing to allow PAs to have a professional identity was a key finding and national support to enable this a major factor in driving forward sustainable change and this needed to include raising awareness to the general public of this role. Support for inter-professional learning and teaching was a key finding because despite many calls for new ways of working, it remained clear that the students in different professional groups were not used to working with one another. This was seen in the simulated scenarios but endorsed by the PAs.

The simulated scenarios indirectly contributed to research question two by providing a contextual practical example observed through human interactions. These interactions demonstrated that there are challenges for all professional groups as well as new roles in the workplace. The students observed were clearly not familiar with working together in an educational setting. For mutual understanding and respect across professional groups, there needs to be more emphasis on inter-professional learning

and teaching. This should be co-produced with educationalists and practice partners, using more effective methods/business models to reduce the repetitiveness that occurs through not maximising or understanding role boundaries and not having a culture of being both educated together and working together in practice. For effective future implementation of new roles, there needs to be a synergistic link between the theoretical university education and simulated clinical learning and teaching that is directly transferable as skills for inter-professional working in clinical practice experience. This is one part of the meso, micro and macro level of commitment required across all organisations and important to support future graduates to be future professionals who are equipped to be future proofed and 'career ready.'

6.3 Research question 3:

How can Physician Associates be supported by stakeholders to effectively contribute to the NHS through their role?

Research question three was predominantly the views of stakeholders with the main themes of innovation and change and professional identity. The same sub-themes emerged and there were similar findings but from different perspectives. The findings from the data revealed that stakeholders had concerns that the role will fail without national guidance and support for regulation, prescribing, role identity and a strategy for implementation. This was also a key finding in the literature (RCP, 2014, Williams and Ritsema, 2014, Curran and Parle, 2018, Drennan*, et.al,* 2017, Jackson, Marshall and Schofield,2017). There was a recognition that this new role would be disruptive but could evolve overtime with the right infrastructure but might be perceived as a threat

to professional boundaries without. Stakeholders felt that strong leadership skills would be essential to drive this innovation and change. There was also a recognition that NHS pressures and constant change in the NHS can become a barrier and without a positive culture of innovation, the role would be at significant risk. Recommendations from the findings would be for a national strategy to support the implementation, prescribing, regulation and identity of this role to allow PAs to find their niche in the workforce.

6.4 Contribution to knowledge and practice.

Workforce strategy supports new ways of working (NHS AND PHE, 2017, NHS, 2019, NHS, 2020/21) but findings from this research suggest there needs to be much more effective evaluation and development of inter-professional learning, teaching and working practices at macro, meso and micro levels to ensure this happens. This will rely on educationalists working with their practice partners on future curricular and learning and teaching technologies and pedagogies which are co-produced with practice partners. A recommendation of this study would also be for a much wider national strategy for using business models and new approaches to drive innovation and change that will support the future direction of healthcare.

However, what is clear is that PAs were keen to be the pioneers of their own role and a recommendation from this study would be for a macro, meso and micro approach for increasing the awareness of the role and supporting PAs with leadership skills, research skills and an understanding of the structures in healthcare workforce at a more strategic

level. This is not something that is necessarily part of the current intensive course but maybe pivotal to their survival.

If the education of healthcare professionals is delivered inter-professionally which findings from this study suggest is underdeveloped, this will support understanding new roles and professional boundaries, driving innovation and change, role identity and a place as a healthcare professional. The very limiting factors of regulation and prescribing need to be driven at national levels and with public facing information so that the public, patients and stakeholders understand that there are different roles beyond nurses and doctors. This is crucial to the survival of this role; which stakeholders firmly believe will fail without. The suggestion of a drama or significant media documentary is a useful suggestion. It must be disheartening not to have a professional identity with such a significant training and for the passion PAs clearly have for being supportive and not wishing to threaten other practitioners. Literature suggests there are issues across professional role boundaries and a general lack of awareness of the scope of this role (Howarth *et.al*, 2020; Jackson Marshall and Schofield, 2017; Drennan *et.al*, 2015). Despite this, the patient feedback suggests patients would be quite happy to be seen by a PA as they want first and foremost to see a competent practitioner.

6.5 Contribution to knowledge:

Although workforce strategy is about driving integrated teams and multi professional working as the way forward (NHS, 2020/20), this is clearly not happening from the experiences of the students in the inter-professional clinical simulations where student feedback suggests they are not used to working together. This is a travesty that needs

urgent address. Despite a rhetoric of driving this forward, this needs to happen from the very inception of a student journey to work successfully. However, if this is taught in a university setting but not enacted in practice, it will also fail. This study found clear evidence that professional groups are not overly familiar with working together and this will stifle innovation and change. A recommendation from this thesis would be that education and practise work together to ensure that future student journeys are managed inter-professionally from the inception of their programme and educational institutions take a lead on embedding this in curricular to ensure an educational holistic journey which would provide the student the opportunity to understand a full holistic patient journey starting from care at home to care in hospital to rehabilitation and through social care and home again. During this route the student should have an opportunity to work with professionals across nursing, allied health, social care, and medicine to create a greater understanding of where roles could complement rather than threaten practitioners. The Peoples plan (NHS, 2020/21) is clear that the patient should be at the centre of clinical decisions and that practitioners should reduce the level of repetition in any one consultation and this can only be achieved through greater understanding and trust between roles. Disruptive innovation creates new markets and during Covid19, this was seen in many ways, for example the NHS Nightingale Hospitals were designed at pace with new models of healthcare, tele health was used to see and treat patients, simulated learning was adopted to support student progression and fast paced use of technology enhanced learning and teaching was created to teach students on line. These are all areas of previous resistance. Recommendations for future integrated care pathways and inter-professional learning and teaching should foster a

culture of inclusion and belonging to support working differently to grow a workforce effectively using the full range of skills of each professional (NHS, 2019, NHS 202/21). Leadership for change should integrate interdisciplinary methods, a range of different clinician and business staff to promote an inclusive approach (Bedgood, 2018). Further developments to ensure leadership skills for new ways of working interact more cohesively between education and practice, through co-producing practitioners of the future. Despite a national call for more PAs in the workforce, there is still a major gap in understanding this new role. This study has shown that there needs to be much greater awareness to support a strategic national approach for taking this role forward. Other new roles that have been introduced into the workforce, for example the nursing associate, have been regulated at pace and this must feel frustrating for PAs. This study also identifies that there is an inequity in training funding and support that needs to be urgently addressed to move forward with a future multi professional workforce. The need for research into role boundaries and understanding how and where the role can offer continuity and support rather than threaten doctors or other healthcare professionals is also a key finding. During COVID 19, new models of health service delivery were adopted at pace and with this momentum it is even more pivotal and timely to drive forward the PA and other advanced roles to ease workforce pressures. This could then help and support the wider workforce, not threaten its security, by reducing the spend on locum doctors, a significant cost to the NHS. New workforce strategy puts the patient at the centre of care and patient's perceptions of new practitioners are pivotal; early findings from this research suggests that patients seem to be happy if they see a competent practitioner, but more studies are needed. It would be useful to look at comparisons of where different practitioners could enhance services particularly utilising the role of the advanced clinical practitioner, sometimes more of a specialist but not always, alongside the

physician associate, more of a generalist, but not always. Identifying where their roles could be complementary, and how they could both support doctors and wider healthcare services. PAs are embedded in clinical practise and may not necessarily have the leadership and research skills to be able to audit their work and showcase their role. Where ambassadors have been used this has been a good means of taking the role forward as demonstrated in both the literature and in the study where students and staff agreed that where a PA was embedded in the practise there was more acceptance of the role. However, there are so many different areas of healthcare and different roles, that this becomes confusing for staff and patients. The Peoples Plan, NHS (2020/21) advocates the patient should be at the centre of care and that healthcare professionals must reduce duplication using all the skills of new roles and the current workforce to maximum effect. Organisations should be challenged to embrace new roles and review how their services could be managed differently. Part of moving forward is valuing the workforce so that the NHS should feel like a good place to work with an atmosphere that is receptive to change. There are currently only a small number of people who are actively researching the new role of the PA and despite some excellent work, this will not be enough to support implementation of the role. This calls for a wider perspective and national strategy for truly embedding the role through audit and evaluation, dissemination and by creating public, staff and stakeholder awareness. Without this national drive this role will continue to evolve at a slow pace, yet the workforce crisis will continue to be a major issue. To ensure we do not lose the momentum of transformation and change during the pandemic it would be helpful if this role was finally given an opportunity to flourish. The role of the PA may or may not currently be a 'disruptive innovation' in healthcare but what is clear is that practitioners need to work differently and to enable this practitioners need to be part of multi-professional teams with a clearer understanding of one another's roles to develop supportive, trustful working practices.

6.6 Contribution to professional practice.

This study reflects that some professional groups already have support post qualifying through preceptorship courses. This would also be important for the PA to have this embedded in their new roles in organisations, offering applied skills in leadership within or spiralled through their course, or the potential for specific preceptorship courses that provide leadership skills for new graduates in healthcare organisations. There is a considerable need for Professional regulation and recognition, to include PAs having prescribing rights. It is also fundamental to have equity in training funding to encourage professionals to train together to be able to work together, from inception through to preceptorship and CPD, rather than only work together once qualified. The PA not only provides continuity in time but are also retested as a generalist every six years and could be uniquely placed to give continuity across disciplines in a sub specialist world where 'seamless' care is looked for. The medical model takes control of the role of diagnosis as their special domain, but the modern world has seen dramatic changes in technology for diagnostics. Diagnosis is ever more 'test' driven so the medical role itself changes. The PA has the skills of degree level thinkers and associated life skills which means their training is not only 2 years. PAs choose to enter the profession from a very different background and perhaps more considered than the 16 or 17, year old typically applying for medicine. The mature medical student is an outlier in early medical training with associated challenges for the mature students amongst their young colleagues. This is not the case with the mature intake of the PA student.

The opportunity for career development into PA for other health care professionals e.g. nurse or especially paramedic is interesting for individuals and it should not lead to a hierarchy of professions as neither doctor or paramedic, pharmacist or nurse, could switch roles overnight. Importantly, this is a natural route for science graduates looking for a career in healthcare.

Without professional recognition and regulation and equitable prescribing rights, the PA is prevented from growing into their niche in health care. With it they could evolve and drive evolution in the health system and be free to be 'disruptive innovators.' The PA can protect the status of the medic by reducing the number of doctors who could need to properly develop leadership skills in the context of care management. The medic will lose status if they rely on diagnosis as their special trick. This is increasingly the reality of new technological advances in diagnostic equipment and artificial intelligence.

6.7 Research limitations

The gap in knowledge remains high because there are only a small number of researchers in this field. Without national strategic workforce planning to support the role it will fail to create a new mid- level practitioner in the workforce. Despite calls for more research, what is interesting is that during the six years of this doctoral journey further research into the role in primary and secondary care has been undertaken but still, the research field remains exceptionally limited. Recent research by Howarth *et.al,* (2020) suggest that there remains a lack of awareness and understanding of the scope

for the role. This creates challenges to students undertaking an intensive course, trying to establish themselves in organisations and who need to be supported.

A recommendation from these finding would be for future research to compare the role of the PA more with junior doctors and advanced clinical practitioners as this might be a more effective comparison. Future research would ideally be as part of a multi-professional workforce, evaluating the contribution that each professional group could offer to enhance patient care and the patient journey and help drive the strategic future workforce view .

Another key finding from the data demonstrated that PAs managed consultations competently as described by the doctor stakeholder. Despite initial concerns the PA in this scenario was able to see up to 90% of the presentations. This is not an insignificant finding and endorses the early research that also found no significant differences between consultations with a GP over PA (Drennan, *et.al*, 2015). Stakeholders agreed that patients are happy if they are seen by a competent practitioner. If this is the case (and it would be arguable that more research is needed in this area), there would be a very strong argument for remodelling general practise and other areas of healthcare to implement strategically the PA to offer continuity consistency efficient and effective healthcare to ease workload pressures. An enabler for this would be for the tariff that supports the education of practitioners to be equitable across all healthcare professionals. Without this enabler it would become difficult for small businesses like general practice to support new roles. This also feeds into the need for educational training for healthcare practitioners to cover a full holistic patient journey and for

educational establishments and their practise partners to be able to work across the primary secondary and tertiary interface to provide the holistic patient journey that is crucial to future healthcare delivery.

A further key finding from this research is that in implementing a new role in healthcare; this needs to be managed at the macro meso and micro levels to ensure organisational readiness, a strategy for implementation and clear understanding where the role supports a service. This goes beyond just the role of PA into understanding how business models might support the NHS with healthcare innovation, the evolution of new roles and new ways of working. In this last 18 months the pandemic has forced transformational change to manage these challenging times and contributed to an understanding that large scale transformational change can happen when you are facing a crisis. There have been some incredible examples of technological advances, multi professional working practises and new markets developing. It might even be reasonable to say that during Covid19 the health service has seen 'disruptive innovation' at pace and a return to old practises would be a travesty when so much innovation has taken place.

6.8 Limitations of the study

6.8.1 Limitation of the three methods (Semi-structured interviews, PA focus groups and PA reflections:

- This was a small study conducted in a University setting with both students and staff who had had some exposure to the role.

- The study was not representative of all the different professional groups and only the views of one stakeholder per profession.
- There were three PAs who participated in the simulated scenarios but only two that participated in the focus group and reflections. More representation may have yielded different perceptions.

6.8.2 Limitations in the clinical simulation scenarios:

The scenarios were delivered in an artificial environment, designed to simulate a real-life scenario and provide only one example of how professionals work together. This may be relatable to real practice but not generalisable. However, it gave very insightful knowledge that professional groups still work in silos and professional groups are not used to working together.

The analysis of the data was not specifically relevant to the research questions as they related to clinical outcomes and therefore the analysis is reflective of my own personal reflections of their interactions.

6.9 Recommendations:

6.9.1 Recommendations for practice:

- Research question 1. Develop a receptive culture for ideas creation, innovation and change for new ways of working, using values creation, design thinking, co-production and new business models for lean thinking at macro, meso and micro levels.

- Ensure staff are prepared for the implementation of new roles valued and supported through clearer understanding of role boundaries, communication and involvement.

- Research question 2 and 3: Develop a synergistic link between university education establishments and practice partners, modelling inter-professional simulated clinical learning and teaching that is directly transferable as skills for inter-professional working in clinical practice experience and the workplace.

- National awareness campaign to support for regulation, prescribing and professional identity. Supporting PAs with their strategic positioning with employers, stakeholders and the public.

- Develop ambassadors across the nation, supported with leadership and business skills/lean thinking to drive the PA role forward.

- Support PAs with preceptorship courses, leadership and research skills to drive the role forward.

- Research question 1, 2 and 3. Promote national public awareness of the role and scope of the Physician associate.

- Promote national awareness for all new roles in healthcare, through national media channels.

- Provide an equitable tariff arrangement for the PA and other healthcare professionals to support them to widen their opportunities across health and social care organisations.

6.9.2 Recommendations for future research.

- Evaluation and development of inter-professional practice at macro, meso and micro levels to gage practitioner understanding of role boundaries and effective practice.

- Co-produced research with education and clinical practice to embed a culture of inter-professional learning and teaching from the beginning of the student journey into working practices.

- The public perception of new roles in healthcare: The physician associate, advanced clinical practitioner, nursing associate: who are they and what do they do?

- Comparative study: Advanced clinical practitioners and physician associates-the role of advanced Practitioners in the future workforce.

- Physician associates and advanced clinical practitioners: Supporting service gaps in healthcare organisations.

- Evaluation of inter-professional learning to reduce duplicity in history taking and patient experience.

- Evaluation of patient experience and opinions on the role of the Physician associate.
- Evaluation and dissemination of the implementation of new business models/lean thinking that support new and effective ways of working.
- Evaluation of the role of the PA across all areas of the healthcare sector to include social care.
- Further research on the barriers and enablers to support new roles in healthcare.

6.10 Personal reflections

This thesis started with the evolvement of a new role in 2014 during which time, workforce strategy was responding to an urgent call for frontline services. The re-emergence of the PA role seemed timely and one potential solution to the workforce crisis. Observing the development of the role over time and through this qualitative study, it has become clear that this cannot happen without national guidance and support. Notwithstanding, assurances that regulation is likely to happen in 2022, this is clearly limiting the ability of the PA to find their niche in healthcare organisations. Having witnessed and worked alongside transformational change during Covid19, I hope that this new role is given a fair and equitable chance to flourish in a health service that needs new models of health care and new roles. Change management is the process of bringing about controlled change in an organisation or culture. Disruptive innovation is an instrument for change that can be relatively uncontrolled. It is bought about by the introduction of a highly effective idea, process or agent that is new to an environment and is a strong evolutionary competitor. The effectiveness of this

innovation depends on how powerful the agent is in the new evolutionary pool. For the PA to move from a managed idea to a disruptive innovator probably just requires the PA to have identity and power to act; specifically, protected recognition and prescribing rights. The PA then becomes an agent free to provide a service unhindered and to compete for a large place in the healthcare team at a pace beyond that of managed change . The final shackle of control is for the requirement of the PA to work in partnership with a medical practitioner. It would be preferable if they could do this as part of a multi professional interdisciplinary team.

References

Aiello, M. and Roberts, KA. (2017) 'Development of the United Kingdom Physician Associate profession'. *Journal of the American Academy of Physician Assistants,* 30(8), pp. 1-8.

Aitkinson, P., Coffey, A., Delamont, S., Loftland, J. and Lofland, L. (2014) *Handbook of ethnography*. London: Sage.

Akhtar, M., Norbert, CJ., Ronder, J., Sakel, M., Wight, C. and Manley, K. (2016) 'Leading the health service into the future: transforming the NHS through transforming ourselves', *International Practice Development Journal*, 6(2), pp. 1-21.

Alvesson, M. (1993) *Cultural ideological modes of management control: a theory and a case study of a professional service company*. London: Sage.

Angrosino, M. (2007) *Doing ethnographic and observational Research*. London: Sage.

Amabile, M., Fisher, C. and Pilemar, J. (2014) 'IDEO's Culture of Helping', *Harvard Business Review 92*, (1-2), pp. 54-61.

Avgar, A.,Given, R. and Mingwei , L. (2011) 'Patient centred but employee delivered: patient care innovation, turnover intentions, and organisational outcomes in hospitals', *Industrial and labour relations review*, 64(3), pp. 423-440.

Balas, A. and Chapman, W. (2018) 'Road map for diffusion of innovation in health care', *Health Affairs*, 37(2), pp. 198-204.

Ballweg, R. (2016) *The Medex Northwest Physician Assistant Program*. Charleston: Arcadia.

Bazeley, P and Jackson, K. (2013) *Qualitative data analysis with NVivo.* 2nd ED. London: Sage.

Beddoe, L. (2013) 'Continuing education, registration and professional identity in New Zealand social work', *International Social Work*, 58 (1), pp. 165–174.

Bedgood, C. (2019). Identifying the ideal healthcare black belt: IE. *ISE ; Industrial and Systems Engineering at Work, 51*(6), 44-47. Retrieved from https://www.proquest.com/trade-journals/identifying-ideal-healthcare-black-belt/docview/2236131069/se-2?accountid=15133 (Accessed 31/5/2021).

Bevan, H. (2010) 'How can we build skills to transform the healthcare system?' *Journal of research in nursing,* 15(2), pp. 139-148.

Bevan, M. (2014) 'A Method of Phenomenological Interviewing', *Qualitative Health Research*, 24(1), pp. 136–144.

Black, H. and Fitzgerald, A. (2018) 'Organisational climate for change and innovativeness: A social capital Perspective'. *Asia Pacific Journal of Healthcare management* 13(1) pp. 1-11.

Blackler, F. (1995) 'Knowledge, Knowledge Work and Organizations: An Overview and Interpretation', *Organization Studies*, 16(6), pp. 1021–1046.

Bloor, M. (2007) 'The Ethnography of Health and Medicine' , in Atkinson, P. ,Coffey, A., Delamont, S. Lofland, L. and Lofland, L. (eds.) *Handbook of Ethnography*. London: Sage.

Bochner, A. and Hermann, A. (2020) 'Practicing Narrative Enquiry 11: Making Meanings Move', in Leavy, P. (ed.) *The Oxford Handbook of Qualitative research.* 2nd edn. Oxford: Oxford University Press.

Boyatzis, R. (1998) *Transforming Qualitative information: Thematic analysis and code development*. London: Sage.

Bradley, E. and Nolan, P. (2007) 'Impact of Nurse Prescribing: A qualitative study', *Journal of Advanced Nursing,* 59(2), pp. 120-128.

Braun, V. and Clarke, V. (2006) 'Using thematic analysis in psychology', *Qualitative Research in Psychology,* 3(2), pp. 77-101.

British Educational Research Association (2018) *Ethical guidelines for Educational Research. 4th ED*. Available at: https://www.bera.ac.uk/publication/ethical-guidelines-for-educational-research-2018 (Accessed at 30 May 2021).

British Medical Association (2017) *Physician Associates in the UK*. Available at: https://www.queensroadpartnership.co.uk/mf.ashx?ID=595d106e-c331-4eb5-8de0-a1f3ff6dc803 (Accessed 30 May 2021).

British Medical Association (2020) 'Cap is lifted on medical school places in England', *British Medical Journal,* 370, p. 3307.

Brock, D., Wick, K.,Evans, T. and Gianola, F. (2011) The Physician Assistant Profession and Military Veterans, Military Medicine, 176(2), pp. 197-203.

Broom, A. and Willis, E (2007) 'Competing paradigms and Health Research' , in Saks, M. and Allsop, J. Researching Health, Qualitative, Quantitative and Mixed Methods. London: Sage.

Brown, T. (2008) Design Thinking. Boston: *Harvard Business Review*.

Brown, D. (2009)*The meaning of careful: how putting people before process will deliver outstanding results and transform our healthcare.* Hcv publishing. London.

Bryman, A. (2008) *Social Research Methods*. 3rd Ed. Oxford: Oxford University Press.

Callard, L. and Williams, A. (2012) 'The 15 steps challenge: a toolkit for good care.' *Nursing Management*, 19 (8), pp. 14-18.

Cameron, E. and Green, M. (2020) *Making sense of change management. A complete guide to the models, tools and techniques of organizational change*. 5th edn. London: Kogan Page.

Caulfield, J. and Brenner, E. (2019) 'Resolving complex community problem: applying collective leadership and Kotter's change model to wicked problems within social system networks', *Non-profit Management and Leadership*, 30(3), pp. 509-524.

Cawley, J. and Hooker, R. (2018) 'Determinants of the physician assistant/associate concept in global health systems', *International Journal of Healthcare*, 4(1), p.50

Chandler, K. (2014) 'Empower your staff to dream big'. *Health service Journal*. 124 (6394), pp. 28-29.

Charmaz, J. (2006) *Constructing Grounded Theory. A Practical guide through Qualitative analysis*. London: Sage.

Chemers, M., Oskamp, S. and Costanzo, M. (1995) *Diversity in Organisations. New perspectives for a changing Workplace.* London: Sage.

Choo, C. (1996) 'The knowing organization: How organizations use information to construct meaning, create knowledge and make decisions', *International Journal of Information Management*, 16 (5), pp. 329–340.

Christensen, C. (2016) *The innovators dilemma: when new technologies cause great firms to fail.* Boston: Harvard Business School Press.

Christensen, C., Bowmer, R. and Kenagy, J. (2000) Will disruptive innovation cure healthcare. Boston: *Harvard Business review*.

Christenson, C. and Eyring, H. (2011) *The innovative University. Changing the DNA of Higher Education from the inside out.* San Francisco: Jossey-Bass.

Christensen, C., Grossman, J. and Hwang, J. (2009) *The innovators prescription. A disruptive solution for healthcare.* Boston: Harvard Business Press.

Christensen, C., Horn, M. and Johnson, C. (2017*) Disrupting class. How disruptive innovation will change the way classes learn.* London: Mc Graw Hill.

Christensen, C. and Raynor, M. (2003) *The innovators solution: creating and sustaining successful growth*.. Boston: Harvard Business press.

Clandinin, J; Caine, C; Lessard, S (2018). *The Relational Ethics of Narrative Inquiry.* London: Routledge.

Courtenay, M., Carey, N. and Stenner, K. (2012) 'An overview of non-medical prescribing across one strategic health authority: A questionnaire survey'. *BMC Health Service Research* 12. 138.

Cresswell, J. (1998) *Qualitative Inquiry and Research Design: Choosing among five traditions.* London. Sage.

Cresswell, J. (2007) *Qualitative Inquiry and Research Design: Choosing among five approaches.* 2nd edn. London. Sage.

Cresswell, J and Clarke, V. (2011) *Designing and Conducting Mixed Methods Research 2nd ED*. Sage. London.

Crotty, M. (2008) *The Foundations of Social Research Meaning and Perspective in the Research Process*. Available at: https://uk.sagepub.com/en-gb/eur/the-foundations-of-social-research/book207972 (Accessed: 27/9/2016)

Curran, A. and Parle, J. (2018) 'Physician associates in general practice: What is their role', *British Journal of General Practic*e, 68(672), pp.310-311.

Davis, C. (2011) 'Adopting an initiative from the car parts industry to transform culture at ward level', *Nursing Management,* 18(6), pp. 8-9.

Denscombe, M. (2010) *The Good Research Guide: for small scale social research projects.* 4th edn. Glasgow. Open University Press.

Department of Health (2011*) Innovation in Health and Wealth Accelerating Adoption and Diffusion in the NHS*. Available at:

www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_134597 (Accessed 27 September 2016).

Department of Health (2012) *The revised Competence and curriculum Framework for Physician Associates. Physician Associate Managed Voluntary register*. Available at: https://www.plymouth.ac.uk/uploads/production/document/path/8/8121/CCF-27-03-12-for-PAMVR.pdf (Date accessed 30 May 2021)

Department of Health (2012a) *Liberating the NHS: Developing the Healthcare workforce.* Available at:

http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_132087 (Accessed 27 September 2016).

Department of Health (2012b) *Health and Social care act: Fact Sheets*. Available at: http://www.dh.gov.uk/health/2012/06/act-explained (Accessed 27 September 2016).

Department of Health and Social Care (2020). Education and Training Tariffs. Available at:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/906634/Education_training_2020_to_2021_Tariff_Guidance.pdf.
(Date accessed 31/5/2021).

Detro, J. (undated) *SP Corps History* Available at:

https://sapa.wildapricot.org/resources/webpages/documents/Army_PA_History_John_Detro.pdf (Accessed 31 May 2021).

Dight, C. and Peters, H. (2015) 'Sign up to Safety: Developing a safety improvement plan', *Nursing Management*, 22 (1) pp 20-24.

Dodgson, M. and Gann, D. (2018) *Innovation: A Very Short Introduction*. Oxford: Oxford University Press.

Drake, P and Heath, L. (2011) *Practitioner Research at Doctoral Level. Developing Coherent Research Methodologies*. London: Routledge.

Drennan, V., Gabe, J., Halter, M., De Lusigan, S. and Levenson, R. (2017) 'Physician Associates in Primary Healthcare England: A challenge to professional boundaries?' *Social Science and Medicine,* 181, pp. 9-16.

Drennan, V., Halter, M., Brearley, S., Carneiro, W., Gabe ,J., Gage, H., Grant ,R., Joly, L. and De Lusigan, S. (2014) 'Investigating the contribution of physician assistants to primary care in England: a mixed-methods study'*. Health Services and Delivery Research.* Available at: https://pubmed.ncbi.nlm.nih.gov/25642506/ (Accessed 30 May 2021).

Drennan, V., Halter, M., Joly, L., Gage, H., Grant; J., Brearly, S., Cameiro, W. and De Lusigan, S. (2015) 'Physician Associates in Primary care. A Comparison', *British Journal of General Practice*, 65(634), pp. 344-50.

Dyer, J., Gregersen, H. and Christensen, C. (2011) *The Innovators DNA. Mastering the 5 skills of Disruptive Innovators.* Boston: Harvard Business Review.

Farmer, J., Currie, M., Hyman, J., West, C. and Arnott, N. (2011) 'Evaluation of Physician Assistants in National Health Service Scotland', *Scottish Medical Journal*, 56(3), pp.130-134. Available at: https://journals.sagepub.com/doi/abs/10.1258/smj.2011.011109 (Accessed 30 May 2021).

Ford, M. (2020) 'Government's 50,000 more nurses target 'insufficient for growing demand''.Available At: https://www.nursingtimes.net/news/workforce/governments-

50000-more-nurses-target-insufficient-for-growing-demand-09-12-2020/ (Accessed 1 June 2021).

Francis Report (2013) *Report of the Mid Staffordshire NHS Foundation Trust Public Enquiry: Executive Summary*. London: The Stationery Office.

Frost, N. (2011) *Qualitative research methods in psychology: combining core approaches: From core to combined approaches*. Glasgow: Open University Press.

Galli,B. (2019) 'Comparison of Change Management Models: Similarities, Differences and which is Most Effective', in Daim, T.,Dabic, M., Basoglu, N., Lavoie, J. and Galli, B. (eds) *R and D Management in the Knowledge Era*. New York: Springer.

General Medical Council (2020) *Bringing physician associates and anaesthesia associates into regulation*. Available at: https://www.gmc-uk.org/pa-and-aa-regulation-hub/map-regulation (Accessed 30 May 2021).

Gearing (2004) 'Bracketing in Research: A typology', *Qualitative Health Research*, 14(10), pp. 1429-1452.

Ghaye, T. and Lillyman, S. (2010) *Teaching and Learning through reflective practice: A practical guide for positive action*. London: Routledge.

Gilbert, N. (2008) *Researching Social Life*. 3rd edn. London: Sage.

Gomm, R. (2008) *Social Research Methodology: A critical introduction*. 2nd edn. New York: Macmillan.

Gool, V., Theunissen, N., Bierbooms, J. and Bongers, I. (2017) 'Literature study from a social ecological perspective on how to create flexibility in healthcare organisations'. *International Journal of Healthcare Management*, 10, pp. 184-195.

Gray, D. (2013) *Doing research in the real world*. 3rd edn. London: SAGE.

Green, J (2007) 'The use of focus groups in research into health', in Saks, M. and Allsop, J. Researching Health, Qualitative, Quantitative and Mixed Methods. London: Sage.

Green, J. (2008) 'Mixed Methods in social inquiry a distinctive methodology?', *Journal of Mixed Methods research*, 2(1), pp. 7-22.

Greenhaugh, T., Macfarlane, F., Barton-Sweeney, C. and Woodard, F. (2012) 'If we build it, will it stay? A case study of the sustainability of whole system change in London'. *Millbank quarterly,* 90 (3), pp. 515-547.

Halter, M., Drennan, V., Chattopadhya, K., Cameiro, W., Yiallourous, J., De Lusigan, S., Gage, H., Gabe, J. and Grant, R. (2013) 'The Contribution of Physician Assistants in primary care: a systematic review', *BMC Health Services Research*, 13(223), pp. 2-13.

Halter, M., Drennan, C. and De-Lusigan, S. (2017) 'Patients experiences with physician associates in primary care in England: A qualitative study'. *Health Expectations: An international Journal of Public Participation in Health Care and Healthcare Policy,* 20(5), pp. 1011-1019.

HEE (2014) Workforce Plan for England: Proposed education and training commissions for 2014/15. Available at:

https://www.hee.nhs.uk/sites/default/files/documents/Workforce-planning-guidance-2014-15.pdf. (Date accessed 31/5/2021)

Health Education England (2019) Meeting the Challenge of reducing stress and building resilience in the NHS workforce. Available at: https://www.hee.nhs.uk/news-blogs-events/news/meeting-challenge-reducing-stress-building-resilience-nhs-workforce

(Accessed 1 June 2021).

Health Foundation, (2014): 'Improvement collaboratives in healthcare: Evidence Scan'. Available at: https://www.health.org.uk/publications/improvement-collaboratives-in-health-care (Accessed 30 May 2021).

Hesse-Biber, S. (2010) *Mixed Methods Research: Merging Theory with Practice*. London: Guildford Press.

Hesselbein, F., Goldsmith, M. and Somerfield, I. (2001) *Leading for Innovation and organizing results*. San Francisco: Jossey Bass.

Holloway, W. and Todres, L (2003) 'The Status of Method: Flexibility, consistency and coherence', *Qualitative Research*, 3, pp. 345-357.

Homes, A. and Chamberlain, B. (2010) 'Transforming care at the bedside: The CNO's role', *Nursing Management*, 41(6), pp.45-47.

Honderich, T. (1995) *The Oxford Companion to Philosophy.* Honderich, T. (ed) New York: Oxford University Press.

Hooker, R. (2015) 'Globalizing Physician Assistant Education', *Journal of Physician Assistant Education,* 26(3), pp. 111-112.

Howarth, S., Johnson, J., Millot, H. and O'Hara, J. (2020) 'The early experiences of Physician Associate students in the UK: A regional cross-sectional study investigating factors associated with engagement'. : Available at https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0232515

(Accessed 30 May 2021).

Hydes, T., Hansi, N. and Trebble, T. (2012) 'Lean thinking transformation of the under-sedated upper gastro-intestinal endoscopy pathway improves efficiency and is associated with high levels of patient satisfaction'. *British Medical Journal Quality and Safety*, 21 (1), pp. 63-69.

Imison, C., Castle-Clarke, S. and Watson, R. (2016) *Reshaping the workforce to deliver the care patients need.*

Available at: https://www.nuffieldtrust.org.uk/research/reshaping-the-workforce-to-deliver-the-care-patients-need (Accessed 30 May 2021)

INSEAD (2014) Innovating Health for Tomorrow. INSEAD. Fontainebleau- x 2 five day workshop modules.

Iwasko, J., Mitchel, T. and Perry J. (2017) 'Transitions in healthcare'. *Unpublished report for Health Education England*.

Jackson, B., Marshal, 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. 785-791.

Jeavons, R. (2011) 'Developing leadership skills at the front line', *Nursing Management-UK*, 18(6), pp.24-25.

Jeff, D., Gregersen, H. and Gregersen, C. (2011) *The innovators DNA*. Boston: Harvard business review press.

Jones, R. (2018) 'What sort of practice in 2040'. British Journal of General Practice, 68(677), pp. 555-556.

Kahn, K. (2018) 'Understanding innovation', *Business Horizons*, Vol 61 (3), pp. 453-460.

Kalantari, S. and Snell, R. (2017) 'Evaluation of a mental healthcare facility based on staff perceptions of design innovations', *Healthcare Environments Research and Design Journal (HERD),* 10 (4), pp. 121-135.

Kendal, P. (2017) 'Sustainable and transformational plans, the 'biggest change ever' *Nursing Management*, 23(10) pp. 8-9.

Kessler, Ian., Heron, P. and Spilsbury, K. (2017) 'Human resource management in innovation: the institutionalization of new support roles'. *Human resource management Journal,* 27(2), pp. 228-245.

Kings Fund (2014) *Developing Collective Leadership for health care.* Available at: http://www.ctrtraining.co.uk/documents/DevelopingCollectiveLeadership-KingsFundMay2014.pdf (Accessed 26 April 2021).

Kings Fund (2015a*) Implementing the NHS five Year Forward View.* Available at: https://www.kingsfund.org.uk/publications/implementing-nhs-five-year-forward-view

(Accessed 30 May 2021).

Kings fund (2015) *Workforce Planning in the NHS.* Available at: https://www.kingsfund.org.uk/publications/workforce-planning-nhs (Accessed 30 May 2021).

Kings Fund (2017) 'Is the government on track to get 5000 more doctors working in general practice by 2020?'

Available at: https://www.kingsfund.org.uk/publications/articles/government-pledge-5000-doctors (Accessed 30 May 2021).

Kohlrieser, G (2014) *Resilient Leadership: Navigating the Pressures of Modern Working Life.* Available at:

https://www.imd.org/contentassets/41e2e9930ee844fe880efc8723c51f3b/42---resilient-leadership-final-28.11.14.pdf. (Date accessed 24/5/2021).

Kolb, D. (1984) *Experiential Learning: Experience as the source of learning and development*. New Jersey: Prentice Hall.

Koomans, M. and Hilders, C. (2017) Design Driven Leadership for Value Innovation in Healthcare, Design Management Journal. Available at: https://onlinelibrary.wiley.com/doi/epdf/10.1111/dmj.12031 (Accessed 30 May 2021).

Kotter, J. (2012) *Leading Change*. Boston: Harvard Business Review.

Kupers, W., Mantere, S. and Statler, M. (2012) 'Strategy as Storytelling: A Phenomenological Collaboration', *Journal of Management Inquiry*. Available at: https://journals.sagepub.com/doi/10.1177/1056492612439089 (Accessed 30 May 2021).

Kushings, E., Heard, H. and Weber, J. (2017) 'Disruptive Innovation in Rural American Healthcare: the Physician Assistant Practice', *International Journal of Pharmaceutical and Healthcare Marketing,* 11(2), pp.165-182.

Lee, S. and Trimi, S. (2018) 'Innovation for creating a smart future', Journal of Innovation and Knowledge, 3, pp. 1-8.

Lewins, A. and Silver, C. (2007) 'Using software in qualitative research: A step-by-step guide'. California: Sage.

Low, J (2007) 'Unstructured interviews in health research', in Saks, M. and Allsop, J. Researching Health, Qualitative, Quantitative and Mixed Methods: London. Sage.

Lewis, D, Naidoo , C. Perry, J and Watkins, J. (2016) 'The round house: an alternative model for primary Care', *British Journal of general practice*, 66(646), pp.362-364.

Long, P. and Spurgeon, P. (2012) 'Embedding leadership into regulatory, educational and professional standards', *International journal of clinical leadership*, 17(4), pp.245-250.

Manley, K., O'Keefe, H., Jackson, C., Pearce, J. and Smith, S. (2014) 'A Shared purpose framework to deliver person-centred safe and effective care: organizational transformation using practice development methodology'. *International Practice Development Journal*, 4 (1).

Marsh, G. (1991) 'The future of general practice. Caring for larger lists', *British Medical Journal*, 303(6813), pp. 1312-1316.

Marshall, M. The travesty of the 10-minute consultation (2013). Available at: http://blogs.bmj.com/bmj/2015/06/29/martin-marshall-the-travesty-of-the-10-minute-consultation (Accessed: 6 April 2016).

Marshall, M., Miani, C. and Nolte, E (2013). 'A peer -reviewed transformation'. *Health service journal*, 123(6370), pp. 22-23.

Marquet, D. (2019*) Turn the ship around. A true story of turning followers into leaders*. London: Penguin General.

Mathers, J., Taylor, R. and Parry, J. (2014) 'The challenge of implementing Peer led interventions in a professionalized health service: A case study of the National Health trainers service in England', *The Milbank Quarterly, 92(4), pp. 725-753.*

Mayle, D. (2009*) Managing Innovation and Change*. 3rdedn. California and Maidenhead: Sage and Open University Press.

McCartney, M. (2017) 'Are physician associates just "doctors on the cheap"?', *British Medical Journal* 359, p.315.

Michaud, E., Jaques, P., Gianola, J. and Harbert, K. (2012) 'Assessment of Admissions Policies for Veteran Corpsmen and Medics Applying to Physician Assistant Educational Programs', *Journal of Physician Assistant Education,* 23(1), pp. 4-12.

Michaud, E., Jaques, P., Gianola, J. and Harbert, K. (2015) 'Education of Military Veterans in Physician Assistant Programs', *Journal of Physician Assistant Education*, 26(2), pp.77-85.

Morgan, A. and Drury, V. (2003) 'Legitimizing the subjectivity of human reality qualitative research method', *The qualitative report*, 8(1), pp. 70-80.

Moussa, L. Garcia-Cardenas, V. and Benrimoj, S. (2019) 'Change facilitation Strategies used in the implementation of Innovations in health care practice: A systematic review'. *Journal of Change Management*, 19(3), pp 283-301.

Mullins, L. and Christy, G. (2013) *Management and Organizational behaviour*. 10th edn. London: Pearson.

Myers, M. (2009) *Qualitative Research in Business and Management.* London: Sage.

National Health Service England (2014) *The Five-Year Forward View*. Available at: www.england.nhs.uk/publication/nhs-five-year-forward-view/ (Accessed 29 May 2021).

National Health Service England (2015) *Five-year Forward View. NHS planning guidance 2016/17 – 2020/21*. Available at: https://www.england.nhs.uk/2015/12/long-term-approach/ (accessed 16 April 2016).

National Health Service England (2012a) *Everyone counts: Planning for patients 2013/14.*

Available at: https://www.england.nhs.uk/2012/12/everyonecounts/(Accessed 16 April 2016).

National Health Service England (2012b) *Developing the culture of compassionate care; creating a vision for nurses, midwives and care givers.* Available at: https://www.england.nhs.uk/2012/09/nursingvision/ (Accessed 1 June 2021).

National Health Service England (2012c*) NHS Change model: Everything we know about delivering change in the NHS*. Available at https://www.england.nhs.uk/sustainableimprovement/change-model/ (Accessed at 30 May 2021).

National Health Service England (2013) *The NHS belongs to the People: A Call to Action*

Available at: https://www.england.nhs.uk/wp-content/uploads/2013/07/nhs-belongs.pdf (Accessed 30 May 2021).

National Health Service England (2019) *The NHS Long Term Plan*. Available at: https://www.longtermplan.nhs.uk/online-version/ (Accessed 25 April 2021).

National Health Service England (2020/21) *The People plan for 2020/2021*. Available at: https://www.england.nhs.uk/ournhspeople/online-version/new-ways-of-working-and-delivering-care (Accessed 25April 2021).

National Health Service and Public Health England (2017) Facing the facts, shaping the future. A draft health and social care workforce strategy for England to 2027. Available at:

https://www.hee.nhs.uk/sites/default/files/documents/Facing%20the%20Facts%2C%20Shaping%20the%20Future%20–%20a%20draft%20health%20and%20care%20workforce%20strategy%20for%20England%20to%202027.pdf (Date accessed, 31/5/2021)

Neil, R. (2016*) Exclusive: GP numbers to drop by a third under radical transformation plans.* Available at: https://www.gponline.com/exclusive-gp-numbers-drop-third-radical-transformation-plans/article/1407439 (Accessed 256 April 2021).

Neyland, D. (2008*) Organisational Ethnography*. London: Sage.

Nonaka, I. (1991) 'The knowledge creating company'. *Harvard Business review*. Available at: https://memberfiles.freewebs.com/84/90/65819084/documents/The Knowledge-Creating Company.pdf

Nonaka, I. and Konno, N. (1998). 'The Concept of "Ba": Building a Foundation for Knowledge Creation', *California Management Review*, 40(3), pp. 40–54.

Nuffield Trust (2021) 'Number of GPs',

Available at https://www.nuffieldtrust.org.uk/chart/number-of-gps (Accessed 31/5/2021).

Nursing and Midwifery Council (2020) *The Code. Professional standards of practice and behaviour for nurses and midwives*.

Available at: https://www.nmc.org.uk/standards/code/. (Accessed 24/5/2021)

Nursing Times Research (2011) *Implementing and sustaining change in the contemporary NHS: lessons earned from the productive ward.* Available at: https://www.nursingtimes.net/roles/nurse-managers/implementing-and-sustaining-change-in-the-contemporary-nhs-lessons-from-the-productive-ward-26-04-2011/ (Accessed 30 May 2021)

O'Keefe, M and Ward, H (2018) *Implementing interprofessional learning curriculum: how problems might also be answers.*

https://bmcmededuc.biomedcentral.com/track/pdf/10.1186/s12909-018-1231-1.pdf. (Date accessed 24/5/2021).

O'Leary, Z. (2007*) Researching real world Problems. A method of inquiry*. London: Sage.

O'Leary, Z. (2013) *The essential guide to doing your research project*. 2nd edn. London: Sage.

Ortlipp, M. (2008) 'Keeping and using reflective journals in the Qualitative research process'. *The qualitative report*, 13(4), pp. 695-705.

Partson, G., Mc Queen, J., Patel, H., Kown, O., Fontana, G. Kuwari, H. and Darzi, A. (2015) 'The science and art of delivery: Accelerating the diffusion of healthcare innovation'. *Health affairs*, 30(12), pp. 2160-2166.

Rajan, R. and Ganeson, R. (2017) 'A critical analysis of John P. Kotter's change management framework'. *Asian Journal of Research in Business Economics and Management,* 7(7), pp. 181-203.

Reay, T. Golden-Biddle, K. and Germann, K. (2006) 'Legitimizing a new role: small wins and micro-processes of change'. *Academy of Management Journal*, 49, pp. 977-998.

Reed, M. (1991) *Experts, Professions and organisations in late modernity: the dynamics of institutional, occupational and organisational change in advanced industrial societies*. Lancaster: Lancaster University. Department of Behaviour in organisations.
Regan, P. and Shillitoe, S. (2017) 'The supervisory ward managers role: progress on compassion in practice action area four'. *Nursing Management*, 24(6), pp.27-32.

Ries, E. (2011) *The Lean Startup*. New York: Crown.

Rimmer, A. (2020) *Cap is lifted on medical school places in England*. BMJ, 370, p. 3307.

Roberts, N. (2016) *Exclusive: GP numbers to drop by a third under radical transformation plans*. Available at: https://www.gponline.com/exclusive-gp-numbers-drop-third-radical-transformation-plans/article/1407439 (Accessed 30 May 2021).

Rodgers, M. (2010) 'Recruitment: Breaking the chain effect', *British Journal of Healthcare Management,* 16(7), pp.340-343.

Rolfe, G, Freshwater, D, Jasper, M. (2001) *Critical Reflection for Nursing and the Helping Professions: a user's guide*. London: Palgrave Macmillan.

Ross, N., Parle, J., Begg, P. and Kuhns, D. (2012) 'The case for the physician assistant', *Clinical Medicine* 12(3), pp. 200–206.

Roulston, K. (2001) 'Data analysis and 'theorizing as ideology'', *Qualitative Research*, 1 pp. 279-302.

Rowan, D (2019) *Non-bullshit innovation: Radical ideas from the world's smartest minds*. London: Bantam Press.

Royal College of physicians (2014) 'A new kid on the block'. Available at: https://www.rcpjournals.org/content/clinmedicine/14/3/219/tab-article-info (Accessed 30 May 2021).

Royal College of Physicians (2017) 'An Employers guide to physician associates'. Available at: https://www.rcplondon.ac.uk/news/fpa-launches-employers-guide-physician-associates (Accessed 1 June 2021).

Royal College of Physicians (2019) Focus on Physician Associates: census 2019. Available at: https://www.fparcp.co.uk/about-fpa/fpa-census (Accessed 31 May 2021).

Ryan, G. and Bernard, H. (2000) 'Data management and analysis methods', in Denzin, N. and Lincoln, Y. (eds.) *Handbook of Qualitative Research*. London: Sage.

Saks, M. and Allsop, J. (2007) *Researching Health: Qualitative, Quantitative and Mixed Methods*. London: Sage.

Sarooghi, H., Libaers, D. and Burkemper, A. (2015) 'Examining the relationship between creativity and innovation: A meta-analysis of organizational, cultural and environmental factors', *Journal of Business Venturing*, 30(5) pp. 714-713.

Saunders, M., Lewis, P. and Thornhill, A. (2011) *Research Methods for Business Students*. Pearson. London.

Selivanoff, P. (2018) 'Leading change effectively', *Healthcare financial management*, pp. 1-5.

Simmons, J. (2015) 'How to get clients to rethink the status quo'. *Medical marketing and media*. 50(1). 28.

Simpson, J. (2014) *The Restless Executive. Reclaim your values, Love what you do and lead with purpose*. Oxford: Wiley.

Smith, J., Holder, H., Edwards, N., Maybin, J., Parker, H., Rosen, R. and Walsh, N. (2013) *Securing the future of general Practice: New Models of Primary Care*. Available at: https://www.nuffieldtrust.org.uk/research/securing-the-future-of-general-practice-new-models-of-primary-care - partners (Accessed 30 May 2021).

Spradley, J. (1980) *Participant Observation*. New York: Holt Rinehart and Winston.

Staren, E., Braun, D. and Denny, D. (2010) 'Optimizing innovation in health care organizations', *Physician Executive*, 36(2), pp. 54-61.

Stenberg, A. (2017) *What does innovation mean- a term without a clear definition*. Available at: https://www.diva-portal.org/smash/get/diva2:1064843/FULLTEXT01.pdf. (Accessed 24 February 2021)..

Sullivan, E., Ibrahim, Z., Ellner, A., Andrew, L. and Giesen, L. (2016) 'Management Lessons for High -Functioning Primary Care Teams', *Journal of healthcare management*, 61(6), pp. 449-466.

Suter, S. (2020) 'Focus Groups in Ethnography of Communication: Expanding Topics of Inquiry Beyond Participant Observation', *The Qualitative Report*, 5(1), pp. 1-14.

Tataw, D (2012). 'Toward human resource management in inter-professional health practice: linking organisational culture, group identity and individual autonomy', *International Journal of Health Planning and Management*, 27(2), pp. 130-149.

Thomas, J. (2009) *How to do your Research Project. A guide for students in education and applied social sciences*. California: SAGE.

Tiley, C. (2013) 'Don't waste the power of peers' ideas'. *British Medical Journal*, 345 (749), p. 27.

University of Worcester (2018) *Research Ethics policy*. Available at: https://www.worcester.ac.uk/documents/Ethics-Policy-version-5.0-Oct-2018.pdf (Accessed 10 March 2021).

Trebble, T. and Hydes, T. (2011) 'Redesigning services around patients and their doctors: the continuing relevance of lean thinking transformation'. *Clinical Medicine* 11(4), pp. 308-310.

Tsai, T., Thomas, C., Jha ,A., Gawande, A., Huckman, R., Bloom, N. and Sadun, R. (2015) 'Hospital Board and Management Practices are strongly related to Hospital Performance on Clinical Quality Metrics'. *Health Affairs*, 34(8), pp. 1304-1311.

Wick,K. and Tozier, W. (2015) 'Physician Assistant Outreach to Military Service Members as Potential Applicants', *Journal of Physician Assistant Education,* 26(1), pp. 28-33.

Wikstrom, S. and Norman, R. (1994) *Knowledge and value: a new perspective on corporate on corporate transformations*. London: Routledge.

Williams, L. Ritsema, T. (2014) 'Satisfaction of Doctors with the role of Physician Associates', *Clinical Medicine*, pp. 113-1616.

Willis Commission (2012) *Quality with Compassion: the future of nursing education*. Available at: https://cdn.ps.emap.com/wp-content/uploads/sites/3/2012/11/Willis-Commission-report-2012.pdf (Accessed 15 January 2013).

Willis, C., Saul, J., Bevan, H., Scheirer, M., Best, A., Greenhaugh, T., Mannion, R., Cornellison, E., Howland, D., Jenkins, E. and Bitz, J. (2014) 'Sustaining Organisational Culture Change in Health Systems', *Journal of Healthcare Organisation and Management*, 30 (1), pp. 2-30.

Wilson, J. (2010) *Essentials of Business Research. A guide to doing your Research Project*. London: Sage.

Woodin, J., McLeod, H., McManus, R, and Jelps, K. (2005) *Evaluation of US trained Physician Assistants working in the NHS in England*. Birmingham: University of Birmingham.

Zuboff, S. (1988*) In the age of the smart machine: The future of work and power*. New York: Basic books.

Annexes

Annex 1 Examples of Encoding Data.

Example of coding Focus groups:

- PA1, page 1, code 1 would be PA111
- PA1, Page 2, code 28 would be PA1228
- PA2, page 1, code 10 would be PA2110
- PA2, page 2, code 18 would be PA2218

There were 18 pages of codes for this transcription; the final codes were:

- PA218111 (PA 2, page 18, code 111)
- PA218112 (PA 2, page 18, code 112)
- PA118113 (PA1, page 18, code 113)
- PA118114 (PA1, page 18, code 114)

Example of coding the Semi-structured interviews:

Paramedic (Academic) 1

- PM 1, page 1, code 1 - PM111
- PM 1, page 5, code 28- PM528

Nurse/Advanced Nurse Practitioner (Academic) 1

- N1, page 1, code 1 -N111
- N1, page 4, code 34- N1434

- Midwife (Academic) 1
- M1, page 1, code 1- M111
- M1, page 4, code 29- M1429

Skills Technician 1

- S1, page 1, code 1- S111
- S1, page 7, code 54- S1754

Doctor (Academic) 1

- D1, page 1, code 1- D111
- D1, page 5, code 53- D1553.

Appendices

Appendix A Ethics Approval

HEALTH AND SCIENCE RESEARCH ETHICS COMMITTEE (HSREC)
PROPORTIONATE REVIEW OUTCOME

30 January 2018

HSREC CODE: SH17180011-R

THE ROLE OF THE PHYSICIAN ASSOCIATE AS A 'DISRUPTIVE INNOVATION': THE CULTURAL PERCEPTIONS OF PHYSICIAN ASSOCIATE PRACTITIONERS IN HEALTHCARE ORGANISATIONS.

Dear Jane

Thank you for your application for proportionate review ethical approval submitted to the Health & Sciences Research Ethics Committee on the 9 November 2017.

Your application has been reviewed in accordance with the University of Worcester Ethics Policy and in compliance with the Standard Operating Procedures for Proportionate Review.

The Committee has now completed its peer review of the project work and is happy to grant this project ethical approval to proceed.

Your research must be undertaken as set out in the approved application for the approval to be valid. You must review your answers to the checklist on an ongoing basis and resubmit for approval where you intend to deviate from the approved research. Any major deviation from the approved application will require a new application for approval.

As part of the University Ethic Policy, the University Research Committees audit of a random sample of approved research. You may be required to complete a questionnaire about your research.

Yours sincerely

SHERRI OGSTON-TUCK

Chair - Proportionate Review Committee

Health and Science Research Ethics Committee (HSREC)

Ethics@worc.ac.uk

Appendix B Physician Associate Student: Participant Information Sheet

Title of Project: The role of the Physician Associate as a 'disruptive innovation': The cultural perceptions of Physician Associate Practitioners in healthcare organisations.

Invitation

I would like to invite you to take part in a research project about the new role of the Physician Associate. Before you decide whether to take part it is important that you understand why the research is being done and what it will involve. Please take time to read this carefully and contact me if you have any questions. Talk to others about the study if you wish.

There are 3 parts to this research for Physician Associate students:

1. **To participate in a video-recorded clinical scenario with the Clinical Director of the Physician Associate Programme and a number of other healthcare students (This will not affect your course or course grades in any way).**
2. **Watch the video-footage and write a short reflective piece in relation to this experience.**
3. **Participate in a focus group related to the role of the Physician Associate in the workplace.**

There will also be some separate face to face interviews with other healthcare professionals from other disciplines.

What is the purpose of the study?

Physician Associates are a relatively new role in the UK and considered to be one of the potential solutions to support a more effective and efficient future workforce alongside other new initiatives.

Because this role is new to organisations, it is possible that whilst exploring the opportunities for large scale transformational change in health and social care service re-design and delivery, this role and its related contribution may be little understood and or viewed as a 'disruptive innovation.'

Therefore, this research aims to explore examples of disruptive innovation and their application to healthcare practice alongside researching the perceptions of this new role by both students on the programme and students and staff from other professional groups.

This research will observe Physician Associate second year students in a simulated work environment interacting with other professional groups. On completion of these scenarios Physician Associate students will be able to observe the video footage of the scenarios and will be asked to write a reflective piece about their experience in preparation for a focus group discussion about their future role and experiences on the programme.
The video-footage, reflective piece and focus groups will all provide data for analysis. Further data will also be analysed from targeted one to one semi-structured interviews with clinical academics from a range of other professions to explore their perceptions of this role.
It is anticipated that themes will emerge from the data and that these four methods will be triangulated to endorse the findings.

This is a qualitative research study using ethnography as a methodology to observe verbal and non- verbal communication and interactions from the Physician Associates as a professional group and with other professional groups. The data from this research will be analysed alongside a literature review of workforce development, healthcare roles, organisational structure and culture whilst exploring the concept of disruptive innovation or evolution of this role.

This research aims to provide recommendations for NHS leaders, stakeholders and practitioners for adopting and supporting the role.

Why have I been invited to take part?

You have received this invitation because you are a second year Physician Associate student. We are hoping to recruit a minimum of 4 and up to 16 students for this study.

Do I have to take part?

No. It is up to you to decide whether or not you want to take part in this study. Please take your time to decide; we will wait for at least 20 days before asking for your decision. You can decide not to take part or to withdraw from the study up to 14 days after data collection. If you wish to have your data withdrawn, please contact me with your participant number and your data will then not be used. If you do decide to take part you will be asked to sign a consent form.

What will happen to me if I agree to take part?

If you agree to take part, you will be invited to attend a simulated practice event with the Clinical Director for the Physician Associate programme (This will not affect your course or grades in any way)

- You will complete a consent form agreeing to take part.
- The research will take place at the University of Worcester in the clinical simulation suite in the Sheila Scott building.
- You will be asked to participate in one or more simulated scenarios which will be video-recorded
- You will be asked to review the video-footage and write a small reflective piece as preparation for a scheduled focus group.
- The simulated scenarios will take approximately 45-60 minutes
- The video-footage will take 60 minutes to review
- The focus groups will be 90 minutes in length.
- The simulated scenarios will be video recorded and the focus groups will be digitally recorded.

Are there any disadvantages risks to taking part?

The researcher is an academic at the University of Worcester undertaking a Doctorate in Business Administration. The researcher has been involved in the development of this programme.

- There are no obvious potential risks or disadvantages to taking part in this research.
- If any participant needs to seek support, they can access this from first point which is the building opposite from main reception and has a range of student services and advice that you can access. https://www.worcester.ac.uk/your-home/firstpoint.html
- You can also ask to withdraw from the research.

Will the information I give stay confidential?

Everything you say/report is confidential unless you tell us something that indicates that you or someone else is at risk of harm. I will discuss this with you before telling anyone else. The information you give may be used for a research report, but it will not be possible to identify you from our research report or any other dissemination activities. Personal identifiable information (e.g. name and contact details) will be securely stored and kept for up to 5 years after the project ends in February 2019 and then securely disposed of. The research data (e.g. interview transcripts) will be securely stored.

Please be aware that information gained from other participants in this research project must also remain confidential.

What will happen to the results of the research study?

This research is being carried out as part of my Doctorate in Business Administration at the University of Worcester. The findings of this study will be

reported as part of my dissertation and may also be published in academic journals or at conferences.

If you wish to receive a summary of the research findings, please contact the researcher.

Who is organising the research?

This research has been approved by the University of Worcester Institute of Health and Society Ethics Committee.

What happens next?

Please keep this information sheet. If you do decide to take part, please contact me using the details below.

Thank you for taking the time to read this information

[**Student researcher**

Supervisor:

Jane Perry
Perj2_06@uni.worc.ac.uk

If you would like to speak to an independent person who is not a member of the research team, please contact Dr John-Paul Wilson at the University of Worcester, using the following details:

John-Paul Wilson

Research Manager
Graduate Research School
University of Worcester
Henwick Grove
Worcester WR2 6AJ
01905 542196
j.wilson@worc.ac.uk

Version 2

Appendix C Physician Associate Participant Consent Form

Version 2

SH17180011-R

Physician Associate students: Participant Consent Form

Title of project: The role of the Physician Associate as a disruptive innovation: The cultural perceptions of Physician Associate practitioners in healthcare organisations.

Participant Identification Number for this study:

Name of Researcher: Jane Perry

	Please initial
I confirm that I have read and understood the information sheet for the above study and have had the opportunity to ask questions.	☐
I confirm that I have had sufficient time to consider whether I want to take part in this study	☐
I understand that I do not have to take part in this research and I can change my mind at any time. I understand that I may withdraw my data by contacting the researcher with my participant number before [3/03/2018]	☐
I agree to keep any information gained about other participants confidential.	☐
	☐

I agree to my research data, including anonymised quotations being used in publications or reports

I agree to participate in a simulated scenario undertaken with the Clinical Director of the Physician Associate programme and I agree to the scenario being video recorded for observation by the researcher. ☐

I agree to watch the video footage afterwards and write a short reflective piece for the focus groups. ☐

I agree to participate in a focus group related to my role as a Physician Associate. This will be digitally recorded. ☐

I have been made aware of support services that are available if I need them.

I know who to contact if I have any concerns about this research ☐

Name of participant _____

Date_____ Signature _____

Name of person taking consent _____Jane Perry_____

Date_____ Signature _____

☐

Appendix D Allied Health/Nurse Participant information sheet

Version 2

SH17180011-R

Allied Health/Nurse Participant Information Sheet

Title of Project: The role of the Physician Associate as a 'disruptive innovation': The cultural perceptions of Physician Associate practitioners in healthcare organisations.

Invitation

I would like to invite you to take part in a research project about the new role of the Physician Associate. Before you decide whether to take part it is important that you understand why the research is being done and what it will involve. Please take time to read this carefully and contact me if you have any questions if you have any questions. Talk to others about the study if you wish.

Allied Health/Nurse Participation in this Research Project:

I would like to invite you to take part in a video-recorded simulated clinical scenario with Physician Associate students led by the Clinical Director of the Physician Associate programmes. (This will not affect your course or grades in any way).

Other Participants in this research: Physician Associate Students

There will also be 3 separate parts to this research for Physician Associate students:

4. To participate in a video-recorded simulated clinical scenario with the Clinical Director of the Physician Associate Programme and a number of other healthcare students (This will not affect your course or course grades in any way).
5. Watch the video-footage and write a short reflective piece in relation to this experience.
6. Participate in a focus group related to the role of the Physician Associate in the workplace.

University of Worcester staff:

In addition, clinical academics from a range of healthcare professions will also be invited to attend a one to one semi-structured interview in relation to the new role of the Physician Associate.

What is the purpose of the study?

Physician Associates are a relatively new role in the UK and considered to be one of the potential solutions to support a more effective and efficient future workforce alongside other new initiatives.

Because this role is new to organisations, it is possible that whilst exploring the task for large scale transformative change in health and social care service re-design and delivery, this role may be little understood and or viewed as a 'disruptive innovation.' Therefore, this research aims to explore examples of disruptive innovation and the application to healthcare practice alongside researching the perceptions of this new role by both students on the programme and students and staff from other professional groups.

This research will observe Physician Associate second year students in a simulated work environment interacting with other professional groups. On completion of these scenarios Physician Associate students will be able to observe the video footage of the scenarios and will be asked to write a reflective piece about their experience in preparation for a focus group discussion about their future role and experiences on the programme.
The video-footage, reflective piece and focus groups will all provide data for analysis. Further data will also be analysed from targeted one to one semi-structured interviews with clinical academics from a range of other professions to explore their perceptions of this role.
It is anticipated that themes will emerge from the data and that these four methods will be triangulated to endorse the findings.

This is a qualitative research study using ethnography as a methodology to observe verbal and non- verbal communication and interactions from the Physician Associates as a professional group and with other professional groups. The data from this research will be analysed alongside a literature review of workforce development, healthcare roles, organisational structure and culture whilst exploring the concept of disruptive innovation or evolution of this role.

This research aims to provide recommendations for NHS leaders, Stakeholders and practitioner for adopting and supporting the role.

Why have I been invited to take part?

You have received this invitation because you are a student from another professional group. We are hoping to recruit a minimum of 4 and up to 16 students for this study.

Do I have to take part?

No. It is up to you to decide whether or not you want to take part in this study. Please take your time to decide; I will wait for at least 20 days before asking for your decision. You can decide not to take part or to withdraw from the study up to 14 days after data collection. If you wish to have your data withdrawn please contact me with your participant number and your data will then not be used. If you do decide to take part you will be asked to sign a consent form.

What will happen to me if I agree to take part?

If you agree to take part you will be invited to attend a simulated practice event with the course director for the physician associate programme

- You will complete a consent form agreeing to take part.
- The research will take place at the University of Worcester in the clinical simulation suite in the Sheila Scott building.
- You will be asked to participate in one or more simulated scenarios which will be video-recorded
- The simulated scenarios will take approximately 45-60 minutes
- The simulated scenarios will be video recorded.

Are there any disadvantages risks to taking part?

The researcher is an academic at the University of Worcester undertaking a Doctorate in Business Administration. The researcher has been involved in the development of this programme.

- There are no obvious potential risks or disadvantages to taking part in this research.
- If any participant needs to seek support, they can access this from first point which is the building opposite main reception that offers a range of support services to students and can be found at
- https://www.worcester.ac.uk/your-home/firstpoint.html
- You can ask to withdraw from the research.

Will the information I give stay confidential?

Everything you say/report is confidential unless you tell us something that indicates that you or someone else is at risk of harm. I will discuss this with you before telling anyone else. The information you give may be used for a research report, but it will not be possible to identify you from our research report or any other dissemination activities. Personal identifiable information (e.g. name and contact details) will be securely stored and kept for up to 5 years after the project ends in February 2019 and

then securely disposed of. The research data (e.g. interview transcripts) will be securely stored.
Please be aware that information gained from other participants in this research project must also remain confidential.

What will happen to the results of the research study?

This research is being carried out as part of my Doctorate in Business Administration at the University of Worcester. The findings of this study will be reported as part of my dissertation and may also be published in academic journals or at conferences.

If you wish to receive a summary of the research findings, please contact the researcher.

Who is organising the research?

This research has been approved by the University of Worcester Institute of Health and Society Ethics Committee.

What happens next?

Please keep this information sheet. If you do decide to take part, please contact me using the details below.

Thank you for taking the time to read this information

[**Student researcher**

Supervisor
Jane Perry

Perj2-06@uni.worc.ac.uk

If you would like to speak to an independent person who is not a member of the research team, please contact Dr John-Paul Wilson at the University of Worcester, using the following details:

John-Paul Wilson
Research Manager
Graduate Research School
University of Worcester
Henwick Grove
Worcester WR2 6AJ
01905 542196

j.wilson@worc.ac.uk

Appendix E Nursing and Allied Health Participant Consent form.

Version 2

SH17180011-R

Nursing/Allied Health Professional: Participant Consent Form

Title of project: The role of the Physician Associate as a disruptive innovation: The cultural perceptions of Physician Associate practitioners in healthcare organisations.

Participant Identification Number for this study:

Name of Researcher: Jane Perry

	Please initia
I confirm that I have read and understood the information sheet for the above study and have had the opportunity to ask questions.	☐
I confirm that I have had sufficient time to consider whether I want to take part in this study	☐
I understand that I do not have to take part in this research and I can change my mind at any time. I understand that I may withdraw my data by contacting the researcher with my participant number before [3/03/2018]	☐
I I agree to keep any information I gain about other participants confidential	☐
I agree to my research data, including anonymised quotations being used in publications or reports	☐
I agree to participate in a simulated scenario undertaken with the Clinical Director of the Physician Associate programme and I agree to the scenario being video recorded for observation by the researcher.	☐

I agree to my research data, including anonymised quotations being used in publications or reports

I agree to participate in a simulated scenario undertaken with the Clinical Director of the Physician Associate programme and I agree to the scenario being video recorded for observation by the researcher. ☐

Physician Associate Students only:

I agree to watch the video footage afterwards and write a short reflective piece for the focus groups

I have been made aware of support services that are available if I need them. ☐

I know who to contact if I have any concerns about this research ☐

Name of participant _____

Date_____ Signature _____

Name of person taking consent _____Jane Perry_____

Date_____ Signature _____

Appendix F Staff Participant Information Sheet

Version 2

SH17180011-R

University of Worcester Staff: Participant Information Sheet

Title of Project: The role of the Physician Associate as a 'disruptive innovation': The cultural perceptions of Physician Associate practitioners in healthcare organisations.

6.10.1.1.1.1.1 Invitation

I would like to invite you to take part in a research project about the role of the Physician Associate. Before you decide whether to take part it is important that you understand why the research is being done and what it will involve. Please take time to read this carefully and contact me if you have any questions. Talk to others about the study if you wish.

University of Worcester Staff Participation in this Research Project:

I would like to invite you to take part in a face to face semi-structured interview about the role of the Physician Associate.

As an academic who is also qualified as a healthcare professional, I would like to conduct a semi-structured face to face interview to gauge your views and experiences of the new role of the Physician Associate. This interview will be digitally recorded and analysed.

Other Participants in this Research Project:

There will also be 3 separate parts to this research for Physician Associate students:

7. To participate in a video-recorded simulated clinical scenario with the Clinical Director of the Physician Associate Programme and a number of other healthcare students
8. Watch the video-footage and write a short reflective piece in relation to this experience.
9. Participate in a focus group related to the role of the Physician Associate in the workplace.

The students from other healthcare programmes will also be invited to take part in the clinical scenarios but will not be involved in watching the video footage, writing a reflective piece or the focus groups.

What is the purpose of the study?

Physician Associates are a relatively new role in the UK and considered to be one of the potential solutions to support a more effective and efficient future workforce alongside other new initiatives.

Because this role is new to organisations, it is possible that whilst exploring the task for large scale transformative change in health and social care service re-design and delivery, this role may be little understood and or viewed as a 'disruptive innovation.'

Therefore, this research aims to explore examples of disruptive innovation and the application to healthcare practice alongside researching the perceptions of this new role by both students on the programme and students and staff from other professional groups.

This research will observe Physician Associate second year students in a simulated work environment interacting with other professional groups. On completion of these scenarios Physician Associate students will be able to observe the video footage of the scenarios and will be asked to write a reflective piece about their experience in preparation for a focus group discussion about their future role and experiences on the programme.
The video-footage, reflective piece and focus groups will all provide data for analysis. Further data will also be analysed from targeted one to one semi-structured interviews with clinical academics from a range of other professions to explore their perceptions of this role.
It is anticipated that themes will emerge from the data and that these four methods will be triangulated to endorse the findings.

This is a qualitative research study using ethnography as a methodology to observe verbal and non- verbal communication and interactions from the Physician Associates as a professional group and with other professional groups. The data from this research will be analysed alongside a literature review of workforce development, healthcare roles, organisational structure and culture whilst exploring the concept of disruptive innovation or evolution of this role.

This research aims to provide recommendations for NHS leaders, Stakeholders and practitioner for adopting and supporting the role.

Why have I been invited to take part?

You have received this invitation because you are a member of staff with a clinical background and a working knowledge of other healthcare roles.

.

Do I have to take part?

No. It is up to you to decide whether or not you want to take part in this study. Please take your time to decide; I will wait for at least 20 days before asking for your decision. You can decide not to take part or to withdraw from the study up to 14 days after data collection. If you wish to have your data withdrawn please contact me with your participant number and your data will then not be used. If you do decide to take part you will be asked to sign a consent form.

What will happen to me if I agree to take part?

If you agree to take part you will be invited to attend a simulated practice event with the course director for the physician associate programme:

- You will complete a consent form agreeing to take part.
- The research will take place at the University of Worcester in a private room at an agreed date.
- You will be asked to participate in a semi-structured interview which will take approximated 40 minutes
- The interview will be digitally recorded

Are there any disadvantages risks to taking part?

The researcher is an academic at the University of Worcester undertaking a Doctorate in Business Administration. The researcher has been involved in the development of this programme.

- There are no obvious potential risks or disadvantages to taking part in this research.
- If any participant needs to seek support, they can access this from first point which is the building opposite the main reception https://www.worcester.ac.uk/your-home/firstpoint.html
- Staff can ask to withdraw from the research.

6.10.1.1.1.1.2 Will the information I give stay confidential?

Everything you say/report is confidential unless you tell me something that indicates that you or someone else is at risk of harm. I will discuss this with you before telling anyone else. The information you give may be used for a research report, but it will not be possible to identify you from the research report or any other dissemination activities. Personal identifiable information (e.g. name and contact details) will be securely stored and kept for up to 5 years after the project ends in February 2019 and then securely disposed of. The research data (e.g. interview transcripts) will be securely stored.

What will happen to the results of the research study?

This research is being carried out as part of my Doctorate in Business Administration at the University of Worcester. The findings of this study will be reported as part of my dissertation and may also be published in academic journals or at conferences.

If you wish to receive a summary of the research findings, please contact me.

Who is organising the research?

This research has been approved by the University of Worcester Institute of Health and Society Ethics Committee.

What happens next?

Please keep this information sheet. If you do decide to take part, please contact me using the details below.

Thank you for taking the time to read this information

[**Staff member**

Supervisor:

Jane Perry
Perj2_06@uni.worc.ac.uk

If you would like to speak to an independent person who is not a member of the research team, please contact Dr John-Paul Wilson at the University of Worcester, using the following details:

John-Paul Wilson
Research Manager
Graduate Research School
University of Worcester

Appendix G Staff Participant Consent Form

Henwick Grove
Worcester WR2 6AJ
01905 542196
j.wilson@worc.ac.uk

Version 2

SH17180011-R

University of Worcester Staff: Participant Consent Form

Title of project: The role of the Physician Associate as a 'disruptive innovation': The cultural perceptions of Physician Associate practitioners in healthcare organisations.

Participant Identification Number for this study:

Name of Researcher: Jane Perry

Please initial

I confirm that I have read and understood the information sheet for the above study and have had the opportunity to ask questions.

I confirm that I have had sufficient time to consider whether

I want to take part in this study.

I understand that I do not have to take part in this research and I can change my mind at any time. I understand that I may withdraw my data by contacting the researcher with my participant number before [3/03/2018]

I agree to participate in a semi-structured interview related to the role of the Physician Associate which will be digitally recorded.

I agree to my research data, including anonymised quotations being used in publications or reports

I have been made aware of support services that are

available if I need them.

I know who to contact if I have any concerns about

this research

Name of participant _____

Date_____ Signature _____

Name of person taking consent _____Jane Perry_____

Date_____ Signature _____

Appendix H Focus Group Questions- Physician Associate Students

Version 2

SH17180011-R

Focus Group Questions- Physician Associate students

What is the purpose of your role as a Physician Associate

Why did you chose to undertake this course?

What are your reflections from the simulated practice?

What are your observations/perception of how you will fit into health and social care organisations?

How will you contribute to the transformation of services and the future health and social care workforce?

What have you observed about the culture of how others interact with you: Other healthcare professionals/ managers?

Have you any reflections on how you interact with others: Healthcare professionals/managers?

Do you perceive your role as entrepreneurial, ambassadorial; do you need to lead innovation?

What challenges do you perceive you might encounter as a new profession?

Do you perceive that you are part of a multi-professional team? Are there any specific practitioners that you will work with?

Do you see disruption and change as an opportunity/advantage?

Do you see yourselves as ‘disruptive innovators’ or will you evolve?

Appendix I Semi-Structured Interviews- Academic staff from across professional groups.

What are your observations/ perceptions in relation to the role of the Physician Associate?

How and where do you perceive that they will fit into health and social care organisations?

Do you perceive this role as contributing significantly to the future health and social care workforce and if so where?

What do you perceive are the challenges for a new role, what is your experience of Physician Associates?

Do you perceive that this a role that will enhance healthcare delivery or do you have other opinions, might this role pose a threat to some professionals/services?

Do you perceive that there is an entrepreneurial/ ambassadorial role for the Physician Associate student/new graduate?

What are your perceptions of healthcare staff, patients and public reactions to this role?

Are there specific healthcare practitioners that will be complimentary to the role/ work alongside?

What are your perceptions on the culture of organisations in relation to understanding where to place this new profession in the workplace?

Do you see the role as 'disruptive innovation' or an evolvement?