Barriers and Facilitating Factors to the Integration of the First UK-Trained Physician Associates onto Secondary Care Services in the British National Health Service

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BARRIERS AND FACILITATING FACTORS TO THE INTEGRATION OF THE FIRST UK-TRAINED PHYSICIAN ASSOCIATES INTO SECONDARY CARE SERVICES IN THE BRITISH NATIONAL HEALTH SERVICE

by

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A DISSERTATION

Presented to the Faculty of
the University of Nebraska Graduate College
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

Medical Sciences Interdisciplinary Area Graduate Program
(Munroe-Meyer Institute)

Under the Supervision of Professor Barbara J. Jackson

University of Nebraska Medical Center
Omaha, Nebraska

March 2019

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ACKNOWLEDGEMENTS

Thank you to my parents, Cheryl and Robert, who supported me in all areas of my life. They sacrificed for decades to allow me to obtain a high-quality education and encouraged me regularly along the way. They modeled self-sacrifice, community service and hard work every day. I am who I am because of them.

Thanks to all my friends who have encouraged me regularly and believed in my work. They have all patiently endured my complaints throughout the PhD process and stopped me from quitting several times. I look forward to having more time to listen to them about their lives for a change!

Thanks to my co-analyst for this project, Lillian Navarro-Reynolds MS, PA-C/R, CDE. I could not have performed a qualitative study like this without a co-analyst who was committed to faithful coding and interpretation of the data. I asked her to join me on this project because of her keen intellect and fierce intellectual honesty. My faith in Lillian was rewarded; she made this project much better by her presence.

Thanks to my advisor, Dr. Barbara Jackson for her assistance, wisdom, guidance, and lightning-fast feedback. I hope to be as helpful to a PhD student someday as she was to me! Thanks to Dr. Paige McDonald for her excellent guidance as my qualitative methodologist. She dug me out of more than one philosophical and methodological hole, and I will always be grateful.

Thanks to my committee members, Dr. Laura Bilek, Dr. Kendra Schmid and Dr. Dejun Su for their time, support and wisdom.
Thanks to all of my PA program colleagues at George Washington University; St. George’s, University of London; and University of Nebraska Medical Center for their assistance and their reassurance that I would, in fact, finish the PhD. Thanks especially to my colleagues at George Washington who cover for me while I work in England twice per year. I could not do this work without their sacrifice of time.

Thanks to all the physician associates and doctors in the United Kingdom who were generous enough to share their experiences with me as participants in this study. Thanks also to those UK PAs who helped me recruit doctor-PA teams into the study. Finally, thanks to my administrative assistant in the UK for this project, Ms. Evie Watkins.

Soli Deo Gloria
BARRIERS AND FACILITATING FACTORS TO THE INTEGRATION OF THE FIRST UK-TRAINED PHYSICIAN ASSOCIATES INTO SECONDARY CARE SERVICES IN THE BRITISH NATIONAL HEALTH SERVICE

Tamara S. Ritsema, Ph.D.

University of Nebraska, 2019

Supervisor: Barbara J. Jackson, Ph.D.

Introduction: The Physician Associate (PA) profession was brought from the United States to the United Kingdom (UK) approximately 15 years ago. Universities have begun to train PAs and these graduates are now starting work in the British National Health Service (NHS) in both primary and secondary care. The number of PAs graduating from PA programs and beginning to work in secondary care will increase substantially over the next few years. No research has been conducted on barriers and facilitators to the integration of a UK-trained PA onto a secondary service.

Methods: A grounded theory qualitative study design was employed. PAs who were educated in the UK and who had been employed as the first PA on their secondary care service were recruited to join the study. These PAs approached their supervising doctors to participate in the study. The PA and the doctor on each team were interviewed separately using a semi-structured interview guide. Nine PAs and eight doctors were interviewed. Data were coded using standard qualitative research methods and evaluated through Karl Weick’s sensemaking framework.

Results: Coding of data revealed nine barriers and ten facilitators to the integration of a UK-trained PA onto a secondary care service in the NHS. These barriers and facilitators were
grouped into coherent themes, three groups of barriers and three groups of facilitators. The three barrier themes were: lack of understanding of the PA role inhibits the development of the PA role, having no champion or a champion of limited effectiveness inhibits the use of PAs in the hospital trust, and regulatory issues contribute to lack of role clarity. The three facilitator themes were: PA involvement in role development facilitates the smooth integration of a PA onto a secondary care service, an effective champion helps define and develop the PA role, and principled behavior allows the PA role to develop safely and effectively. Theoretical analysis reveals that a clear role for PAs is the essential facilitator and an unclear role for PAs is the primary barrier to the integration of PAs onto secondary care services in the NHS.

Discussion: As the number of PAs employed in the NHS grows substantially, PAs need a medical role distinct from that of junior doctors that is developed with input from the PAs themselves and they need strong champions to advocate for PAs within the hospital trust and within the NHS. PAs and doctors both need to engage in principled behavior to allow the PAs to practice safely and effectively. Lack of a legal framework for PA practice limits the development of the profession. Doctors and PAs alike engaged in sensemaking to come to a more thorough understanding of their experiences with a healthcare role new to the NHS.
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LIST OF ABBREVIATIONS

CCF – Competence and Curriculum Framework for the Physician Assistant
FPA – Faculty of Physician Associates (successor organization to the UKAPA)
GMC – General Medical Council (regulatory body for doctors in the United Kingdom)
GP – General Practitioner / General Practice
IRB – Institutional Review Board (US)
NHS – British National Health Service
PA – Physician Associate (UK) or Physician Assistant (US)
PI – Principal Investigator
RCP – Royal College of Physicians (London)
REC – Research Ethics Committee (UK)
SHO – Senior House Officer
UK – United Kingdom
UKAPA – UK Association of Physician Assistants (predecessor organization to the FPA)
Univ – University
US – United States of America
A. Introduction

The Physician Associate (PA) profession was developed in the United States (where it is called the “Physician Assistant profession”) in the 1960s to address a medical workforce shortage. The founders of the profession trained medical corpsmen returning from Vietnam in a two-year education program modelled on the shortened version of medical school used to train doctors during World War II. Currently, there are more than 123,000 certified PAs in the United States, practicing in nearly every specialty of medicine.¹ Since the early 2000s, countries other than the US have begun to develop PA professions of their own. The United Kingdom is one country in which the profession has been introduced.

B. Statement of Problem

The PA profession, while well-established in the United States, is relatively new to the United Kingdom (UK). Very small numbers of US-trained PAs first came to the UK in the early 2000s as part of three pilot projects to test the feasibility of implementing the role in Britain. These pilot projects in England and Scotland were judged to be successful and British universities began establishing PA training programs in the late 2000s.² ³ The first validated PA programs in the UK were established in 2008 and just over 300 people had qualified as PAs by the end of 2016. From 2015-17, nearly 30 new PA programs have opened and over 1200 students have enrolled. Between 2017 and 2020, the UK and Ireland Universities Board for Physician Associate Education (now known at the PA Schools Council) estimates that more than 3000 people will enter the PA profession.⁴ Many of these graduates will enter secondary care
employment because many of them have had their training funded by hospital trusts which are desperate for medical providers to work in specialty and hospital settings. Little is known about how PAs are integrated into medical teams in UK secondary care settings due to the youth of the profession. Outside of the two pilot project evaluations in the mid-2000s, which looked at the experience of incorporating very experienced US-trained PAs into secondary care in the UK, no research on this topic exists.

C. Purpose and Significance of the Study

The proposed study will take a grounded theory qualitative approach to elucidating the barriers and facilitating factors associated with implementing UK-trained PAs for the first time in a secondary care setting. The results may assist medical teams incorporating PAs for the first time to anticipate and address issues that commonly arise with the introduction of this new role onto the team. PAs who are beginning practice in secondary care may also benefit from better understanding the experiences of other PAs who have established the PA role in a new clinical setting. The results of this study may be particularly useful now, when we will see a substantial increase in the number of PAs entering practice. In 2012, 17 PAs graduated from British PA programs. In 2018, nearly 700 people are anticipated to graduate. An improved understanding of the process of implementing PAs into secondary care may also allow educators to more effectively train PAs for work in secondary care settings in the National Health Service (NHS). Finally, results from this study may assist health workforce decision-makers in other developed countries as they evaluate the potential for developing the PA role for inclusion in their health systems.
D. Research Question

What are the Barriers and Facilitating Factors to the Integration of the first UK-trained Physician Associates into Secondary Care Services in the British National Health Service?

E. Assumptions / Biases

All researchers have assumptions and potential biases that potentially influence the development of hypotheses, choice of methods and analyses of data. Making explicit the investigator’s assumptions is particularly important in qualitative research where an inductive reasoning process is employed. Conclusions reached through inductive reasoning are more likely to be influenced by the investigator’s assumptions and experience than when a deductive process is used. My assumptions are:

a. **PAs are a potential good in the health system.** I am a trained PA and a PA educator. I believe that properly trained and supervised PAs can be a useful part of the medical team while saving the health system money. However, I also believe that PAs are not the right solution for every health system, specialty or situation.

b. **PAs and doctors have the potential to work together effectively, but this outcome is not assured.** While the literature shows that not all PA/doctor teams are effective, many studies have reported satisfaction on the part of the PAs, the doctors and patients.\(^6\)\(^7\)\(^8\) Other studies have reported equivalence in patient outcomes when a PA/doctor team delivers care compared to a team comprised completely of doctors.\(^9\)\(^10\) In my own experience as a practicing PA in both outpatient and hospital settings, I was a part of effective teams. However, I am also aware of many instances where the doctor and the PA never developed a functional team. While the literature on this topic is
scarce, several potential reasons why these teams may not ever develop properly have been proposed in the non-scientific literature. These include:

i. **The PA and the doctor have differing expectations about the role of the PA.** Some doctors are hoping they will be hiring a person who has the knowledge and experience of a doctor and are disappointed when the PA cannot meet that expectation. Other doctors want a true “assistant” – someone to follow them around and carry out commands and are frustrated when the PA wants more input into patient care. Of course, PAs are also very frustrated under these scenarios. They do not wish to put patients in danger when their knowledge and training are insufficient for the case at hand. On the other hand, they have been trained in the practice of medicine, and are frustrated if they are not permitted to use their training.

ii. **The practice or health system in which the PA works may put external restrictions on PA practice that do not acknowledge the PA’s level of training or experience.** Some health organizations have put specific external constraints on PAs such as “PAs may never insert chest tubes”. Arbitrary limitations such as these are very frustrating to specialty PAs for whom these procedures may be regular practice. While it may make sense to limit invasive procedures for PAs in other specialties, prohibiting thoracic surgery PAs from performing a procedure that is essential to their work is frustrating for both the PAs and the doctors on those teams who look to the PAs to relieve some of the burden of time-consuming procedures. **Scope of practice for specialty PAs should be determined, in part by the doctor’s scope of practice and the**
training and supervision the doctor can provide to the PA carrying out these services.

iii. **Interpersonal conflicts.** Some combinations of people just do not work. A particular PA or doctor team may not be able to work together effectively because of differences in style, pace, approach to patients or sense of humor, for example.

iv. **Poor choice of specialty on the part of the PA.** Because PAs do not choose a specific specialty in which to train as doctors do, a PA may choose a job in a specialty that ends up being not well-suited to his or her interests or personal style. For example, a PA may accept a job in a fast-paced critical care setting and not be a particularly fast worker. Or, a PA may choose a job in a primary care setting and realize that she misses working in the hospital. PAs who do not identify well with their specialties or settings may not develop an effective team relationship with their doctors.

c. **PAs can practice safely if they know their limits.** PAs practice medicine with far less training than doctors have. They can practice safely if they are clear about what they know and can identify situations that are beyond their education, training and experience. PAs who are unable to identify what they do not know or who are unwilling to seek the help of a doctor when they do not know something are dangerous.

d. **The quality of PA education and training is different depending on the university where the PA studied.** In the United Kingdom, the accreditation process for PA training programs has not yet been implemented. Examination results from the PA National Examination show that the quality of programs differs. One PA program has a 33% pass rate, and still another has a 99% pass rate. Informal feedback from employers
suggests that they have noticed substantial differences in the preparedness for practice between graduates of different PA programs. Differences in the quality of training will affect the ability of different PAs to transition to providing quality semi-autonomous medical care. Graduates of some programs may require substantial additional on-the-job training to reach the level of new graduates from more rigorous programs.

F. Conclusion

The PA profession is relatively new to the United Kingdom. Little research has been conducted on PAs in the UK and on the introduction of PAs to secondary care clinical services in the British National Health system. This study aims to answer one of the pressing questions about PAs working in British hospitals.
CHAPTER 2 - REVIEW OF THE LITERATURE

A. Introduction

Before conducting this study of the barriers and facilitators to integrating PAs onto secondary care services in the NHS, it is important to characterize the current state of the literature on PAs in the UK. It is also important to explain the philosophical history behind the theory of symbolic interactionism, which underpins both the grounded theory methodology used in this study and the sensemaking framework used to analyze the results of this study.

B. Search Strategy

Studies regarding physician associate practice in the United Kingdom were identified by searching Medline, Google Scholar, and Cumulative Index to Nursing and Allied Health Literature (CINAHL Plus) online. The initial search was conducted in the spring of 2017, with a further search for new articles performed in August 2018. No date, language or publication status restrictions were placed on the search. (Figure 1)

In an attempt to cast the net as broadly as possible, each database was initially searched using the terms “physician assistant” and “physician associate”. Medline returned 1732 articles for “physician assistant”, including hundreds of clinical articles which were published in the Journal of the American Academy of Physician Assistants and do not relate to health workforce research. Creating a Boolean AND with “United Kingdom” decreased the number of publications to 20. Within the “Physician Assistant” AND “United Kingdom” search, four articles were PA workforce articles, seven related to PA education, eight were commentaries or personal narratives, and one related to a non-US, non-UK country.
A Medline search on “physician associate” returned 85 articles. Instituting the Boolean AND with “United Kingdom” decreased the number of publications to 15. Fourteen of these 15 were duplicates from the “physician assistant AND United Kingdom” search, due to the choice of most authors who published articles after the profession changed its name from “physician assistant” to “physician associate” to use both MeSH headings to label their articles.

The 70 references that arose from the “physician associate” search which were not included in the “physician associate” AND “United Kingdom” search represent a heterogeneous mix of references. Thirty of these articles referred to a program at the University of Minnesota called the “Rural Physician Associate Program” in which third year medical students complete nine months of clinical rotations in the same rural community as part of their training for the MD degree. In addition, some of the oldest PA programs in the United States have historically called their programs “physician associate programs” from the time when the title in the US was not yet settled. Studies with authors employed by these programs are retrieved with the “physician associate” only search because of the titles of their authors, regardless of the topic. Many of these authors wrote clinical or educational articles regarding work performed only in the United States. Twelve of the articles retrieved in the “physician associate” search were articles on interprofessional education, in which PA students were one type of participant. A small number of news, personal narratives and articles from non-US, non-UK countries also presented themselves in this search.

C. Literature Review on PAs in the United Kingdom

Because the PA profession in the UK was established so recently, very few original research studies of the profession have been published. No research studies have been published which
address the integration of UK-trained PAs into secondary care settings. Prior to the establishment of PA education programs in the UK, a few regional health systems recruited experienced US-trained PAs to come practice in the NHS as proof of concept. PAs in these pilot studies worked in both primary and secondary care. Two of the three initial pilot projects included formal program evaluations conducted by academic medical centers. These studies both found that PAs could provide a substantial portion of the medical services provided by a doctor and that no doctors and few patients had any concerns about PA practice in terms of patient safety. The experienced American PAs were found to have good generalist medical knowledge, a strong work ethic, and excellent patient communication skills. All of these attributes were found to facilitate integration of PAs into the NHS. However, integration of the PA role was inhibited by several factors:

- inability for PAs to prescribe and to order radiologic investigations (due to legal restrictions) as they were accustomed to doing in the US
- difficulties communicating the scope of the role to members of the health care team
- differences in expectations between the PAs and the doctors regarding the role the PA would play on the team
- inconsistent arrangements for clinical supervision of the PA by a doctor
- confusion among patients regarding the training and role of the PA
- lack of knowledge of the structure and culture of the NHS by American PAs
- cultural conflicts between American PAs and British doctors, nurses, NHS staff and patients.

While the last two barriers on this list were specific to the integration of foreign health professionals into the NHS, the first five of these barriers are still potential barriers for UK-
trained PAs. In addition, there are likely additional or different barriers and facilitators to the integration of UK-trained PAs. We will explore these themes in this study.

More recently, as PAs have begun training in the UK and graduated out into the NHS workforce, some original research on PAs and PA practice has been published. It is useful to categorize the research into three categories:

- Characteristics of PAs and PA practice in the UK
- Patient experience with PAs
- Response / perspective of doctors and the health system regarding PAs

i. Characteristics of PAs and PA practice in the UK

The first paper, other than the report on the pilot projects mentioned above, to attempt to quantify and characterize the number and type of PAs in the UK was published in 2011. This study, entitled “Physician Assistants in the United Kingdom: An Initial Profile of The Profession” reported the results of the first annual census performed by the United Kingdom Association of Physician Assistants (UKAPA) with 39 PAs and 56 PA students across the country. This study showed that PAs had entered 19 different medical and surgical specialties and that US PAs who had stayed on from the pilot projects were more likely to practice primary care than UK-trained PAs. UK-trained PAs were more likely to be practicing in secondary care than were US-trained PAs. PAs were primarily practicing in regions of the country in which there had been a pilot project or near universities that trained PAs. In 2012, Ross, et.al. published a commentary on the potential usefulness of PAs within the NHS. In the context of this commentary, they revealed that 21 hospital trusts were employing PAs across England and Scotland. These studies
were useful for both establishing a baseline regarding PA practice in the UK and for providing solid peer-reviewed data to the medical literature on which other investigators could build.

In 2012, a study in the *Journal of Interprofessional Care* described the results of a survey of 16 PAs working in general practice, to characterize the clinical content of their work. Half of the PAs included in the study were US-trained PAs, the other half were UK-trained PAs. At the time the PAs were surveyed (2011), none of the UK-trained PAs could have been graduated from PA school longer than five years. Most of the UK-trained PAs in the study had graduated within the past one to two years. US-trained PAs were more experienced, because prior experience as a primary care PA in the US had been a requirement to obtain these jobs. This study found that while PAs engaged in nearly the full scope of primary care medical tasks, they spent more time seeing patients for acute problems than on providing chronic disease management services. No data were collected on the views of doctors or patients on the PA role or the care provided by PAs. It is unknown how applicable these study results are to UK-trained PAs who have more than just a few years of experience.

In 2014, the shortage of emergency physicians in the UK was in the news. A survey of emergency physicians performed by the Royal College of Emergency Medicine showed that more than 23% of all British emergency doctors were planning to leave emergency medicine practice or were planning to leave the United Kingdom. Tamara Ritsema published a research letter in response to demonstrate how PAs might help meet the need for provision of emergency care. She used UKAPA Census data from the 2014 administration to characterize the scope of practice of the 17 PAs who were practicing emergency medicine at that time. The data showed a wide variety in PA scope of practice among emergency medicine PAs, with some PAs working only on the lower end of the acuity spectrum, while other PAs were working with all patients, even the most critically ill. The study showed that the most experienced PAs were
most likely to care for the sickest patients. Given the youth of the profession in the UK at this time and the lack of clarity around regulation of PA practice for invasive procedures and provision of critical care, it was not surprising that many PAs were only working at the lower end of the practice spectrum. It is unknown whether the scope of practice will broaden for PAs in emergency medicine as they gain more experience or obtain formal regulation. This study was limited by the small sample size, self-report of scope of practice, and the lack of formal peer review.

An important question to answer when considering deploying PAs in the UK is whether PAs can provide comparably safe care at a cost that is equal or lower to that of doctors. Drennan and Halter compared PAs in general practice to GPs on their reconsultation rates after having seen a patient for an acute, same-day visit. Reconsultation rates for the same problem are surrogate marker for inadequate medical care. Those who have to come back for the same issue are presumed to have either been incorrectly diagnosed or inadequately treated at the first visit. They also assessed cost of the consultations by looking at the length of the consultation, percentage of the consultations that included a diagnostic test, a referral to another provider or a prescription issued. The investigators surveyed patients about their levels of satisfaction with each visit. Finally, the medical record of each consultation included in the study was reviewed by an independent, blinded GP for the quality of the medical documentation at the first visit for all patients who required a reconsultation.

To conduct this study, they recruited 12 general practice clinics to participate in their study, six of which employed PAs and six of which did not employ PAs. The investigators abstracted medical records from 932 visits to a PA for an acute problem to 1154 visits to a GP for the same type of problem. They found no differences in rates of reconsultation between GPs and PAs. No difference was found in the rates of diagnostic tests ordered, referrals made, number of
prescriptions issued, or levels of patient satisfaction with the consultation. PAs were found to spend longer for each consultation, but given their lower pay, the direct cost of their consultations was still lower for PAs than that of GPs. Drennan and Halter did find a substantial difference in the appropriateness of the medical records for the initial consultations as judged by blinded, independent GPs. The record of the initial consultation was judged as appropriate in 79.2% of consultations provided by PAs, only in 48.3% of consultations provided by GPs (p<0.001). Although a very small number of PAs (seven PAs in six practices) were included in this study, this study did review a substantial number of patient visits for comparison with GP practice. The results of this study seem to suggest that PAs can provide safe care in the general practice setting for acute complaints that is also cost-effective and acceptable to British patients.

In 2016, de Lusignan et al. compared practice outcomes of five GPs and six GP PAs for acute problems for which patients had requested a same-day appointment. 41 GP consultations and 21 GP PA consultations were video-recorded. Assessors, who were blinded to the provider type were asked to determine whether the care provided was safe (yes or no), the number of medical complaints voiced by the patient and whether the presenting complaint was an exacerbation of an existing medical problem. The assessors were asked to rate the quality of the consultation on factors such as organization, time management, and diagnostic sophistication. They were also asked to guess whether the medical provider in the video was a GP or a PA. No visits were determined to be unsafe. GPs were more likely to see patients with multiple complaints and with exacerbations of chronic medical illnesses than were PAs. GPs were rated higher in the quality of the consultation than were PAs. The assessors were not able to reliably determine from viewing the video of the consultation whether the practitioner was a GP or a PA. While establishing that the practice of GP PAs seeing urgent care appointments
were generally safe, this study did not take into consideration the differences in length of experience between the GPs and the PAs. To become a fully-qualified GP, doctors have at least five years of post-graduate medical training. The length of experience of PAs included in this study is not known, but the study was conducted in 2012. Only two PAs in the United Kingdom graduated before 2010, so at minimum, three of these PAs had two years or less of medical experience. It is unsurprising, therefore, that GPs were rated more highly for the quality of their consultation skills than were PAs. It is also revealing that the assessors could not reliably guess the type of the provider seeing the patient. The study is limited by the extremely small sample of six PAs, but is strengthened by the use of blinded evaluators.

As more PAs entered practice, some doctors and health administrators began to express concern that PAs would be dissatisfied with their roles and the lack of an obvious path for career progression in the same way that doctors and nurses can progress. Some expressed concern about spending money to train PAs if PAs would not stay in practice due to their dissatisfaction with the role. In 2016, Ritsema and Roberts published a study on the satisfaction of PAs with their job and their role. They embedded a previously validated measure of health professional job satisfaction in the 4th annual administration of the national UKAPA Census. They also administered an unvalidated PA role-specific questionnaire. The response rate to this survey was 70.6% of all PAs working in the UK. PAs were found to be satisfied with all aspects of their jobs; no factor was found to have lower than a 66.6% satisfaction rate. PAs were the most satisfied with their relationships with doctors and other health professionals, and least satisfied with their pay and their ability to fully use their training. This research is consonant with the Physician Assistant job and role satisfaction literature in the US, which has consistently found that PAs are among the most satisfied health professionals. PA frustration about the inability to use their education fully is unsurprising when PAs are trained to prescribe medications and to
order and interpret radiologic investigations, but are legally proscribed from doing so at this point. This study begins to demonstrate that PAs, at least in the early days of the profession, are satisfied and are not in danger of leaving the profession, despite external legal restrictions. A limitation of this study is the difficulty differentiating between satisfaction with the particular job they are working now as compared to satisfaction with the role as a whole.

ii. Patient experience with PAs

The literature on patient experience with PAs is scant. Halter and colleagues conducted interviews with patients of primary care PAs in 2012. They interviewed 30 patients drawn from six primary care clinics. These interviews lasted 10-20 minutes and focused on whether the patient understood what the PA role was, whether they trusted the PA to provide care, how PAs compared with GPs in the patient’s experience, and whether the patient would be willing to see the PA again. They found significant heterogeneity in patient understanding of the role from “doctor in training” to “foreign doctor who can’t prescribe here” to a correct understanding of the PA role. Patients generally trusted the PAs and felt that PAs compared well to GPs in their technical and communication skills. They were frustrated that the PA had to go to talk to the GP to get prescriptions signed as this delayed their discharge from care. Most patients were willing to see a PA again. Some were only willing to see a PA for more minor complaints; whereas, others expressed hope that the PA they saw would be their new regular primary care provider. The only other data on patient satisfaction with PA practice comes from the English and Scottish PA pilots which used American PAs to assess suitability of the PA role for the UK. In general, these pilot evaluations showed that patients were appreciative of the care provided by PAs and were willing to see a PA again for medical care. They appreciated the
strong communication skills of the PAs. However, these data are of limited applicability to PAs currently in practice in the UK because all the PAs in the pilot were Americans and were trained in American PA programs.

iii. Response / perspective of doctors and the health system regarding PAs

The first evaluation of the view of doctors on the practice of UK-trained PAs was published in 2012 as part of a program evaluation of their own graduates by the University of Birmingham PA program.\(^{26}\) They surveyed six psychiatrists who worked with five newly graduated PAs. They surveyed doctors before the PAs embarked on their jobs in psychiatry and surveyed them again after the PAs had started to practice (time lag not specified). They found that the consultants were initially concerned that PAs would have insufficient medical knowledge and that PAs would be unable to prescribe. The post-employment survey found that most doctors appreciated the PAs’ generalist medical knowledge, the contribution of the PAs to continuity of care for patients, and their willingness to seek advice from the doctors when needed to provide the best care. However, four of the six doctors expressed concern about the PAs’ lack of psychiatry-specific knowledge and their inability to prescribe medications. This study is clearly limited by the small numbers of surveys performed and the fact that all of the PAs were graduates of the same program.

In 2013, in response to social media discussions about the acceptability of PAs to doctors, Williams and Ritsema conducted a survey of doctors who were currently working with PAs.\(^{27}\) Sixty one doctors representing fourteen specialties completed the survey. Doctors were asked which aspects of having a PA on their team worked well and which aspects of having a PA on their team did not work well. More than 60% of doctors believed that PAs have good clinical
skills, PAs provide improved continuity of care, PAs add flexibility to the team, and PAs have good communication skills. The majority of doctors (81.8%) also said that the feedback they have received from patients about PAs was either “all positive” or “generally positive”. Two respondents (3.3%) chose the statement “Having a PA on our team does not work well”. When asked about difficulties with the PA role, 82% of doctors said that the inability to prescribe was a problem for their team. 42.6% of respondents also said that the inability of PAs to request radiologic investigations and the lack of understanding of the PA role by other staff in the clinic and the hospital were aspects of having a PA on the team that did not work well. Interestingly, in this study, four doctors reported that they did not feel that patients could distinguish their PA from a doctor. Two of these doctors felt this was a positive reflection on the PAs’ medical skills. The other two doctors viewed this inability to distinguish as a negative – that the PAs were possibly misrepresenting themselves. This study was limited by a low response rate (40% of eligible doctors) and the inability to ensure that doctors were commenting primarily on the role of the PA and not the performance of the individual PA with whom the doctor worked.

In 2016, Wheeler et. al. surveyed 56 PAs in secondary care regarding their specialty and which other professions they worked with on their teams.\textsuperscript{28} The specialties reported were consonant with the Faculty of Physician Associates annual census.\textsuperscript{29} Unsurprisingly, most PAs reported working with doctors and nurses. More surprisingly, 82% of the PAs reported working with another PA. The research question of this study shows a limited understanding of PA practice. By definition, PAs work with doctors. Since doctors work with nurses in secondary care settings, PAs also work with nurses. The finding that 82% of hospital PAs work with other hospital PAs is new and is a useful contribution to the literature.

A 2017 study which surveyed medical directors of hospitals and mental health trusts across England about the factors affecting the decision to employ PAs received responses from 20
These medical directors reported hiring PAs to help services that did not have sufficient numbers of doctors to meet the needs of patients. They also indicated that they hired PAs, in part, to allow doctors-in-training to have more time for educational activities. The medical directors indicated that the supply of PAs at that time (2015) was insufficient to meet their needs, and that many of these hospital trusts would hire more PAs if they were available. Medical directors were also concerned about the lack of prescribing rights for PAs and the possibility that doctors in their hospitals would not accept PAs. One significant limitation of this study is that it is uncertain the degree to which the medical directors actually understood what a PA was and whether their hospital trust actually employed PAs. Some of the tasks they reported PAs were doing in their hospitals (such as administering general anesthesia in the operating room) are not part of PA training, raising the possibility that the medical directors were thinking of other types of health professionals such as advanced practice nurses when they completed this survey.

A recently published study (2017) with a similar name to the study under description here was entitled “Barriers and facilitators to integration of physician associates into the general practice workforce: a grounded theory approach” was published by Jackson, et.al. The investigators conducted focus groups with general practitioners, practice nurses and patients in an area of the country in which PAs do not typically practice. They were asked about what they thought would make bringing a PA into a practice easier or more difficult. However, none of the members of these focus groups had ever worked with a PA. The practices surveyed were not considering hiring a PA. No information about PA education or experience was provided to the participants in the focus group. The results of this study revealed the lack of understanding of the role. Many participants wondered aloud about the breadth and depth of PA training. They struggled to understand whether a PAs was “an underpaid doctor vs an overpaid nurse”. They
were uncertain if PA training included foundational medical topics such as anatomy, physiology, genetics, pharmacology, or pathophysiology of all the organ systems. Some participants believed that PAs were intending to take over general practice and displace doctors.

Unfortunately, this study does not add much to our understanding of how doctors and the health system will work with PAs, other than to illustrate vividly the need for education within the health system about PA education, socialization and scope of practice prior to introduction of PAs into a new region of the country.

A study published in January 2019 sought to understand the perspective of junior doctors on the effect of introducing PAs to academic medical services in a part of the UK where no PAs had previously worked. Junior doctors have become very concerned that the presence of PAs on their clinical services will detract from the quality and quantity of their training. Roberts et. al. performed a mixed methods study with junior doctors in Leeds. The University of Leeds graduated their first cohort of students in September 2017 and these newly-graduated PAs were placed in five different hospitals in Yorkshire. The investigators conducted surveys, focus groups and individual semi-structured interviews to assess whether junior doctors who were working with PAs believed that PAs were detracting from their training experience, were adding to their training experience, or were not affecting their training experience one way or the other. They also asked how their experience with PAs had changed their view on PAs. This study found that most of the junior doctors believed that adding PAs on to the service had either no influence on the opportunities for learning, or that bringing the PAs on had increased their opportunities for learning. For example, when asked about whether having PAs on the team had increased, decreased or not influenced the ability of the junior doctors to attend educational sessions, 38% said that they were more likely to attend an educational session than before the PAs had arrived. The majority (55%) found that the presence of PAs had no effect on their ability to
attend training and 7% reported that the presence of PAs had decreased the likelihood that they could attend teaching sessions. When queried about whether their opinion of PAs had changed from before the arrival of PAs until now, 48% reported feeling more positive about the PA role. 30% reported that they felt positive about the PA role from the beginning and they still felt positive about the role. Eleven percent of participants reported that they had substantial concerns about the PA role and that they are still concerned about the PA role. Another 11% have greater concerns about the PA role than when the PAs started. The authors included supporting quotes from their focus groups and semi-structured interviews that supported and explained their quantitative results.

This study is a very helpful starting point in our understanding about how junior doctors view the impact of PAs on their education. The mixed methods approach yielded useful exploratory data on a topic that had never been investigated. Their finding that exposure to PAs generally improves the opinion of doctors about the PA role is completely new within the UK PA literature. The study followed appropriate research methods for this type of study. The limitations of the study are primarily that the doctors surveyed worked in only one area of the country and the PAs to which the doctors were exposed were all graduates of the same PA training program.

iv. Gaps in the literature

So much is not yet known about PA education and practice in the United Kingdom. Research into the profession in the UK has only just begun. An incomplete list of unanswered questions includes:
• How are PAs educated in the UK? To what degree do PA programs follow the Competence and Curriculum Framework / accreditation standards?

• Which methods of instruction are most effective for educating a person with a science bachelor’s degree to become a semi-autonomous medical practitioner in 24 months?

• How are PAs socialized to their role during PA education? Who influences how their view of the profession is developed?

• How do newly graduated PAs from different programs across the country compare to each other? Is there a minimum standard of competence an employer can expect?

• What are the key skills that a newly graduated PA must develop to become useful in the NHS (primary or secondary care)? What training are practices and hospital trusts providing PAs after graduation from their programs to help them make the transition from student to practitioner?

• What is the scope of practice of PAs in different specialties (primary care, secondary care, surgical care, intensive care, psychiatry, etc) after six months on the job? After six years on the job?

• Are there particular specialties or medical settings that are particularly suited to employing PAs? Are there particular settings or specialties that are not as well suited to employing PAs?

• Which leadership roles are PAs assuming in their hospital trusts? What do other leaders think about PAs potentially assuming health care leadership roles within the trusts?

• Are primary care patients satisfied with the care they receive from PAs (small studies already done, larger studies are needed)? Are secondary care patients satisfied with the care they receive from PAs?
• How does the presence or absence of PAs in a particular practice environment affect the education provided medical students or junior doctors?

• What are the similarities and differences between UK-trained PAs and UK-trained nurse practitioners or other “advanced care” clinicians?

• What administrative structures need to be developed to support the use of PAs in the NHS?

This study aims to answer one outstanding question: What are the barriers and facilitators to the integration of the first UK-trained PA on to a secondary care service in the NHS? Of all the gaps in the literature, this question is one of the most pressing due to the large number of students who will graduate as PAs in 2019 and 2020. In the past, well over 75% of newly graduated PAs have been hired into secondary care. Without guidance about bringing PAs into the secondary care environment, PAs and doctors who work with PAs alike are at risk of difficult transitions. Learning from other PAs and doctors who have made this transition already may help new services make the transition more effectively.

D. Conceptual Framework

The conceptual framework for this study comes out of the pragmatist philosophy of William James, Charles Peirce and John Dewey via George Mead’s social psychology theory, Herbert Blumer’s symbolic interactionism framework and Karl Weick’s sensemaking approach. I will briefly review the history of these ideas and then discuss how symbolic interactionism underpins the grounded theory study design and the sensemaking framework through which the data will be viewed.
i. Mead and the origins of symbolic interactionism

George Herbert Mead, Herbert Blumer and Anselm Strauss were all employed in the same group at the University of Chicago. Mead preceded Blumer, who preceded Strauss. Yet all were profoundly influenced by the underlying philosophy of pragmatism of William James, Charles Peirce and John Dewey. Pragmatism measures the value of theories and beliefs by the practical application that they engender, instead of by how they contribute to academic philosophical debate.\textsuperscript{33, 34} Pragmatist philosophers proposed that reality is fluid and is open to different interpretations by different people.\textsuperscript{35} The idea that people create their interpretations of reality and make choices of action in response was an advance from previous philosophies which posited that human belief and actions were purely a product of conditioning.\textsuperscript{36} Through participation in social interactions, people can construct and re-construct social meanings that shape their views of the world and subsequent actions.\textsuperscript{37}

Mead suggested that people engage in “social acts” over time to make meaning. Social acts are a conversation of gestures (words and actions) where one person’s words or actions generate a response in word or actions from another person.\textsuperscript{37} People then use the data they collect from these interactions to ascribe meanings to people, objects and situations. This social process shapes people’s views of themselves, society and others. In addition, this process occurs continuously and each part of the process influences the other parts of the process.\textsuperscript{36}

Mead proposed that the ability to develop a sense of having one’s own mind and sense of self, distinct from others is part of what differentiates humans from other animals. People can analyze themselves and their own behaviors to place themselves and their actions in a social context.\textsuperscript{36} They can also imagine what others might be thinking or feeling and can “take the role of the other” to assess situations and predict what others might do in the future based on past experience.\textsuperscript{38} According to Mead, thoughts are not divorced from action. Mead rejected
philosophies that proposed that mind, body, spirit and actions could be separated from one another. Mead proposed that people interact with their whole beings based on the interpretations they construct of the world. The ability to change one’s interpretation of a situation based on further interaction with others and with the environment is the source of novel solutions to problems people encounter.

Mead’s proposal for how people engaged in the analytic process of reflexive thinking clearly laid the foundation for Blumer and Weick. In 1938 Mead proposed the following four-step process of reflexive thinking:

1. Impulse – when there is a mismatch between what a person expects in response to his or her actions and what another person does or says, the individual realizes that there is a problem which must be analyzed and addressed before she or he can move ahead with further action.

2. Perception – the individual evaluates the perceptions of the problem (her own perception and what she thinks the other person’s perception may be) to determine the cause of the mismatch and to identify how the situation needs to be changed before further action can be attempted.

3. Manipulation – the person considering the causes of the mismatch generates alternative hypotheses about how to correct the problem. They evaluate the likelihood of success of new strategies they might employ in the situation.

4. Consummation – the person chooses and implements one of the potential solutions generated, removing, at least temporarily, the barriers to action. They then evaluate the effectiveness of that solution based on the response of those with whom the mismatch occurred.
As they go on through life, people engage in this cycle of learning based on their experiences and the information they gather from those experiences. The mismatch described by Mead is very similar to the disruption of equilibrium proposed as a stimulus to sensemaking by Weick.\textsuperscript{40}

ii. Blumer and Symbolic Interactionism

Although Mead’s work clearly laid the foundation for symbolic interactionism, Mead himself never used this label for his work. Herbert Blumer, who was a student of Mead’s at the University of Chicago, coined the term “symbolic interactionism”.\textsuperscript{34} The basic tenet of symbolic interactionism is that people create and share the meaning they attach to things in the world via language and symbols. Humans observe situations, the actions of other people, and the language other people use, to assess and assign meaning. As they are party to more situations, novel experiences, new people, and as they interact with others, the meaning they attribute to these situations and actions is revised. People are not just observers, however, they also act. The actions people take are influenced both by the meaning they have attached to people and situations in their environment, and by the ways they hope to influence the meaning other people in the environment attach to people and situations. Every person engages in recursive cycles of acting, assessing the reaction of others to their actions, attributing meaning to the reactions of others, and acting again based on the revised assessment.\textsuperscript{34,33} While these ideas are very similar to the cycle proposed by Mead, Blumer emphasized the idea that social interactions \textit{form} human conduct. Social interactions are shaped by historical, cultural and social contexts, but these contexts are not determinative of behavior. Culture, social contexts and language precede each individual and inform his or her behavior choices, but individuals still have the choice of which behaviors to enact based on their own interpretations of the situation. In
addition, individuals may choose to act in a way that attempts to change the social or cultural context or influence the way language is used in a situation.\textsuperscript{34}

According to Blumer, the process of symbolic interactionism can apply to groups as well. Groups of people can make and share assessments of situations. They can choose to take collective action based on their shared understanding. Like individuals, groups can act and then evaluate the effects of their actions. Individuals and groups also work to influence and potentially change the assessment that other people make of situations as well.\textsuperscript{35}

Blumer noted that Mead had not really proposed specific methodologies for testing his theory.\textsuperscript{41} Blumer believed that most of what was occurring in these cycles of action and assessment were not visible to scientists based on external observations of human behavior. To test these theories, Blumer proposed that sociologists and psychologists conduct deeper exploratory investigations that would necessarily have to involve asking individuals about their perceptions and interpretations. The data collected was what people said, not ethnographic observations of their external behavior.\textsuperscript{34}

iii. Karl Weick and Sensemaking

Symbolic interactionism deeply informed the sensemaking framework developed by Karl Weick.\textsuperscript{30} In many ways, the sensemaking framework is a practical operationalization of symbolic interactionism. Sensemaking provides insight into the process of how individuals and groups create and change the meanings that are so important in symbolic interactionism. Sensemaking as a construct entered the organizational psychology/sociology literature in the 1960s to provide a framework for the discussion of how meaning is constructed by individuals and groups, how that meaning is transmitted to others, and how people act to try to influence the environment and the meaning others make within that environment. Karl Weick first
postulated in 1969 that changes in organizations create disruptions which are sufficient to require people in organizations to need to re-evaluate their organizations and their role in them.\textsuperscript{42} This disequilibrium in the environment prompts individuals and groups to engage in recurring cycles of thought and action with a goal of “making sense” - reducing uncertainty about the structure, function and culture of an organization and the individual’s role in the organization. Over the next forty years, sensemaking as a construct has been expanded by researchers in fields as disparate as cognitive psychology, organizational psychology, management sociology and linguistics.\textsuperscript{43}

While definitions of sensemaking vary among theorists, the original outline of sensemaking by Weick included seven elements. In his construction, Weick postulated that these seven elements can occur in any order and at any time.\textsuperscript{40} These seven elements are:

- **Develop identity**: who people believe they are and what their role is in a given context shapes the way they choose to act in that context, how they expect others to respond to their actions, and how they interpret the events that play out.

- **Engage in retrospection**: the opportunity to engage in sensemaking occurs when there is a violation of expectations sufficient to get people to look back and consider how their understanding may have been either erroneous or different from the understanding of others.

- **Enact identity**: when people act they bring structures and events into existence. Enactment is an attempt to create the environment they believe should exist based on their sensemaking up to this point. Enactment also helps people clarify their own understanding of their identity in the present context.

- **Focus on extracted cues**: people look around in the environment to inform themselves about what others think about the identity they have created. They
notice what information in the environment is relevant to them and determine which explanations of their role are acceptable.

- **Engage in social activity**: as people interact with those around them, the discussions in which they engage help create plausible explanations for events. People work together to build a plausible narrative on which they agree. Sharing the stories also allows people to attempt to influence the ways others make sense.

- **Develop a plausible story**: people do not weigh all possible explanations for a situation equally. They favor plausible stories that fit with their existing narrative and identity over strict accuracy.

- **Sensemaking is ongoing and iterative**: people both react to and shape the contexts in which they live and work. Even as they enact the identity they have developed they are observing how others react to them. They are also trying to influence how others respond through social activity and they develop plausible stories that they and others will accept. They continue to engage in retrospection as long as the disruption in their context continues.

A rapid expansion and application of the sensemaking approach to a number of fields of study has led to many interpretations of sensemaking. Sensemaking is not a formal theory, but a lens or perspective through which relationships between organizations and individuals can be viewed and analyzed. A systematic review of the sensemaking literature by Maitlis and Christianson in 2014 drove them to define sensemaking as “a process, prompted by violated expectations, that involves attending to and bracketing cues in the environment, creating intersubjective meaning through cycles of interpretation and action, and thereby enacting a more ordered environment from which further cues can be drawn”. This definition is notable for its emphasis on the continuous nature of sensemaking. Their definition finishes with the
idea that further information will be and should be obtained from the environment to allow individuals and groups to continue to work to make sense of their situation and to actively work to change their environment.43

While the literature on sensemaking is heterogeneous, there are essential characteristics of the framework that are included in nearly all explications of the construct. First, sensemaking is a response that is triggered by an event, issue, or threat. Something happens that upends the understanding that people have of the environment in which they exist. Usually this is an event or issue that forces people to acknowledge a significant discrepancy between their expectations of how things were supposed to be and the reality they see in front of them. The triggering episode leads to people feeling like their environment is no longer the predictable, rational, orderly system they felt they once knew.44

Not all events, threats or changes in situation trigger sensemaking. The events must be substantial enough to make people wonder about what is happening, what will happen next, and what the implications are for them as individuals and groups. Louis posits that changes in the environment that are considered negative or unpleasant are more likely to trigger sensemaking than those that are considered positive.45 It is also possible that some people accommodate or dismiss cues for sensemaking that would trigger sensemaking in other individuals or at other organizations which have a different organizational culture.46

One of the most powerful inducements to sensemaking is a threat to personal or organizational identity. People construct their view of their own identity in ways that maximize self-enhancement, self-efficacy and internal consistency.47 When this identity comes under attack by other people or by events, people are quickly thrown into sensemaking. The person must then appraise the significance of the event for his or her identity and assess what threat the event or issue has for the way he or she currently views his or her identity. The depth of the
threat to his or her identity may hinge partially on how established that identity is. For example, people who have recently acquired a new professional identity are more likely, according to Petriglieri, to change the meaning of their identity to themselves and others.\textsuperscript{48} If the evidence from the environment is that the individual’s current understanding of his or her identity will not be sustainable, the individual works to change the shared view among the organization of “identity X” to something more sustainable. For example, if a physician associate started a job viewing herself as a full-fledged medical professional, but gathers evidence from others that they do not see the PA this way and will not allow her to maintain this identity, she may change her view of the professional identity to “a PA is a person who specializes in clinical procedures to assist the medical team in their work”. In contrast, people who are well-established in their professions are more likely to respond to identity threats by trying to discredit the source of the identity threat.\textsuperscript{48}

Another key tenet of sensemaking is that meanings and identities are created in individuals and between groups of people. The meaning or identity is the end product of a process of negotiation and influence between a potentially large number of people with different roles in the organization and in society at large. In the definition of sensemaking proposed by Maitliss and Christianson, this process is the “creating intersubjective meaning through cycles of interpretation and action”, where “intersubjective” is defined as the shared meaning held by a group of individuals.\textsuperscript{43} This quest for intersubjective meaning cannot be divorced from power dynamics, manipulation and attempts to persuade others within the group as to what the meaning should be. These tactics can be part of a bid to influence both the individually constructed meanings and the meanings constructed by the group.

Attempts to form the sense others are making in a situation is sometimes called “sensegiving” while attempts to change an existing cognitive framework another individual or
group holds is called “sensebreaking”. Sensebreaking may have preceded sensegiving in organizations undergoing change as leaders try to persuade the members of their organization to give up their old way of viewing things and take on new meanings (the leaders’ preferred meanings). Much literature has described the ways that leaders attempt to control and direct the sensemaking process of their subordinates in organizations. While some leaders do not attempt to control or direct the sensemaking of the members of their organization, most leaders promoting a substantial change in an organization try to control the process and direct stakeholders to an understanding that matches that of the leaders. This approach is unsurprising, given that leaders of organizations are accustomed to providing guidance to their employees and having the employees share the leaders’ views on the organization. However, in situations in which the change is small, somewhat hidden, or when organizational leaders choose not to become involved in trying to help their members make sense of the changes, sensemaking can be fragmented. People make sense through informal means. The movement of information is lateral (between members) not vertical (between leaders and members). Much of the sensemaking takes place in contexts and conversations in which leaders and managers are not physically present. The potential disadvantage to this approach to the organization is that senior leadership has little influence on this process, and in fact, may not even know what conclusions the team has arrived at in their attempt to make sense of an organizational change like bringing PAs onboard. The potential benefit is that groups may develop an understanding of or explanation for the changes that can be used to engage in sensegiving to other teams as the innovation is rolled out in other parts of the organization, if the leadership can learn what understanding has been developed.

Another key feature of sensemaking is the role of action in creating meaning. When a person develops a concept of his or her role in the system and how he or she views his or her
interaction with the larger system, he or she tests that meaning by acting. If a PA views her role as a member of the medical team, for example, she may give input about pathophysiology or treatment while on patient rounds. How other team members respond to her asserting her medical knowledge is a test of whether they share her view that she belongs on the medical team. If they tell her to go away and perform a nursing task, for example, it is clear that they do not share her view of her role. If, instead, they respond positively to her contribution to the discussion, she would believe that the team views her role as a medical one as well. Enacting her role in this way also provides the PA with data with which she can continue working to make sense of her role. Taking action, thinking about the information generated by the action, and talking with others are all part of a cycle which feeds itself. The feedback resulting from the action taken provides more information to the person to discuss with others and to consider herself. The reflection the individual performs and how others think about the action she previously took influences her next choice of action. This continuous cycle of action and reflection is called “enactment” in sensemaking terms. This concept of enactment differentiates sensemaking from merely observation or interpretation. In observation or interpretation, the person making judgments stands outside the interaction. In enactment, the person making the judgments is the person who is acting and reflecting. The person is attempting to create the environment that makes sense to him or her.53

iv. Strauss and Grounded Theory as a Data Collection Approach

This study uses grounded theory as a method of data collection and examines the resulting data through the lens of Karl Weick’s sensemaking framework. The pairing of this method of data collection and examination of the resulting data through the sensemaking framework is a
natural one as they both are underpinned by the perspective of symbolic interactionism. Although the founders of grounded theory did not initially identify a theory on which their methodology was based, subsequent theoretical papers and the relationship between Anselm Strauss and others such as Blumer at University of Chicago where symbolic interactionism was ascendant, have demonstrated the symbolic interactionist underpinnings of grounded theory.

Symbolic interactionism underpins the types of questions that are asked in grounded theory studies. While grounded theory studies often do ask factual questions such as “what happened first?” or “how did you address that problem?”, in the types of exploratory studies that necessitate a grounded theory approach, we are more interested in questions of interpretation. For example, questions in this study included “what were your expectations, and how do you think you came to hold those expectations?” and “why do you think the integration of the PA onto your service went so well/badly?”. Answering questions about expectations, hopes, opinions, etc. allows the participants to share the meanings they have made in the process of their experience. Asking participants about interactions between PAs and doctors, nurses, other health professionals, administrators and patients allows the investigator to discern the interpretations people are making within the situation. These questions also allow us to learn what interpretations the participants think others are making in the situation.

The interpretations and meanings that people create from their experiences are the data which are analyzed in a grounded theory study. Strauss and Glaser, in their seminal book “Awareness of Dying”, interviewed and observed dying patients, their families and their caregivers. The words and actions of these people were their data source. They specifically asked people questions about the meaning they made of their situations. From this data, they developed a central theory regarding the process of dying. After the publication of this book,
they released a book that explained their newly-developed methodology called “The Discovery of Grounded Theory: Strategies for Qualitative Research” in which they outlined their new qualitative method which they called “grounded theory”. Their central premise was that the theory should be allowed to emerge from the data collected. This approach was in marked contrast to the dominant paradigm which required a testable hypothesis to be developed *a priori* and then tested quantitatively.

While Glaser and Strauss believed that grounded theory could stand on its own as a research methodology, others, including John Creswell, have argued that pairing qualitative methodologies with quantitative methodologies can provide some of the benefits of both types of inquiry. Qualitative studies such as this grounded theory study can do exploratory work that enables generation of hypotheses that may be tested later with quantitative approaches. Or, quantitative studies may be augmented with qualitative work to allow the voices of participants to be added to the quantitative data collected. In the case of the current study, so little is known about the phenomena under investigation, that grounded theory is the best approach for the research question. It would have been impossible at this stage to develop a meaningful quantitative survey instrument. Collecting data about PA clinical practice patterns would not have revealed the interpersonal and administrative barriers and facilitators to bringing a PA on to the clinical team. Instead, we have collected experiences and meanings from PAs and doctors and have used the grounded theory approach to analyze the data they have given us.

**E. Conclusion**

Very little literature on the experience of PAs and doctors with PAs in secondary care is available. This study attempts to build on the small amount of previous research on PAs in the
UK to better characterize the barriers and facilitators to the integration of UK-trained PAs on a secondary care service. The study used a grounded theory methodological approach and has analyzed the results through Karl Weick’s sensemaking framework.
CHAPTER 3 – METHODS

A. Introduction/Background on Grounded Theory Approach

This study took a grounded theory qualitative approach to the research question. Grounded theory, like other qualitative research methods, is used to provide rich descriptions of phenomena which not have previously been studied and to generate hypotheses about these phenomena. Unlike traditional quantitative social science research, grounded theory takes an inductive approach first. Researchers interview several key informants about their specific experiences and examine other sources of information that maybe informative about the phenomenon under study (documents, videos, etc). This process of using multiple sources of data and multiple types of data to improve the trustworthiness of the conclusions is called “triangulation”. The investigators then develop generalizations based on the common themes that emerge from the data collected. After analysis of the themes which emerge from data sources, the investigators begin to seek to build a theory which would unify and start to explain the experiences shared by the participants. Unlike researchers using quantitative methodologies, grounded theory practitioners begin analyzing the data they obtain very early in the process to allow them to modify subsequent interviews to obtain data that may help refine the hypotheses generated from early interviews.

While the inductive approach used in grounded theory is limited by potential confirmation bias, a grounded theory approach has provided hypotheses that can be tested in the future with larger-scale quantitative research. Because the integration of British PAs into secondary care environments is so poorly understood at this point, any survey that would have been designed would have been seriously limited. It would have been difficult to develop meaningful
responses from which participants could choose. This study, however, has now generated themes which will guide subsequent development of survey items.

B. Methodological Approach Employed

A standard qualitative study methodology was implemented (see Figure 2 for flow chart). Each piece of that methodology is described in a stepwise fashion below.

i. Reviewed documents / research articles / websites / published media

To inform the development of the semi-structured interview guide and the theory arising from this study, documents, research articles and websites with content regarding the integration of PAs in secondary care around the United Kingdom were reviewed. The review of the scientific literature was reported in chapter two. Table 1 shows the results of the review of non-scientific documents and the concepts uncovered. Among the types of documents included were the newsletters and website of regional health and education authorities introducing the PA role to patients and other health professionals, videos created by Health Education England and the NHS on the introduction of PAs, and the website of the Faculty of Physician Associates at the Royal College of Physicians. The Competence and Curriculum Framework for the Physician Associate, which is the curricular guide for PA educators in the UK was reviewed in detail. The nascent standards which have recently been proposed for accreditation of UK PA programs were also reviewed. The program evaluations of the pilot projects from the early-mid 2000s in which US PAs were brought to England and Scotland provided particularly helpful information about what it is like to introduce the first PA to an NHS service. In addition, news
articles from both the lay press and from medical/nursing organizations were reviewed. This review of documents contributed to the development of the semi-structured interview guide.

ii. Developed semi-structured interview guide

The questions that comprised the semi-structured interview guide were based on several sources, including the pilot project reports from the introduction of US-trained PAs into several clinical settings in the mid-2000s, the more recently published scientific literature on UK PAs, the implementation science literature, the review of documents/websites/videos discussed above, my own experience as one of the first clinical PAs employed at Johns Hopkins Neurology and as a PA educator, along with discussions with UK-trained PAs. The semi-structured interview was also informed by the existing scientific literature on the development of the PA profession in the US. (See Appendix 1 for final interview guides)

As expected, the guide underwent a few revisions during the course of the first few interviews to better capture the data that participants wanted to share. For example, a wrap-up question was added. For doctors, this question was: “If a colleague from another hospital wanted to hire a PA in [your specialty] and s/he had never worked with a PA before, what advice would you give that doctor?” For PAs the question was: “If a recent graduate of [your university] rang you and told you they were taking a job as the first PA in [your specialty] at a particular hospital, what advice would you give that PA?” These two questions seemed to allow the participants to reflect on their experiences and bring up themes that they might not have spoken about earlier, in part because they did not wish to reflect badly on their colleagues. For example, it seemed easier for a doctor to say, “I would encourage them to make sure all the
[specialty] consultants were on board with it before they hired the PA,” as opposed to saying, “a problem we had at my hospital was that not all the consultants agreed with hiring the PA”.

iii. Pilot-testing of interview guide

The interview guide was pilot tested with one PA who was not eligible for the study because she had resigned from her post to stay at home with children. The pilot testing revealed some subtle changes that needed to be made to the interview guide, mostly around differences in British versus American terminology for doctors in training. Multiple attempts to pilot the interview guide with a doctor failed. Some of the changes suggested from the piloting of the PA instrument were implemented for the doctor interview guide as well.

iv. Obtained Institutional Review Board approval in the United States and Research Ethics Committee approval in the United Kingdom

A formal application was made to the Institutional Review Board (IRB) at the George Washington University School of Medicine and Health Sciences (where the principal investigator is a faculty member) and was obtained without modification to the proposal. The IRB at George Washington did require proof that the project met ethics regulations in the United Kingdom, so the proposal was also submitted to the Research Ethics Committee (REC) at St. George’s, University of London (where the principal investigator also holds a faculty appointment). Approval was obtained from the St. George’s, University of London Research Ethics Committee after small modifications to the text of the recruitment materials were implemented.
v. Participant recruitment

Several methods were used for recruitment. An email was sent to the five universities which had graduated PAs requesting the program directors to forward an email about the study to their students. This email was approved by the IRB/REC in both countries as an acceptable recruitment tool. The email contained a description of the study and contact information for the principal investigator. In addition, the PI posted recruitment advertisements on her own Facebook and Twitter feeds. These recruitment advertisements were approved by the IRB/REC. Finally, as participants were recruited into the study, they were asked if they knew other PA/doctor teams that might wish to participate in the study. We therefore used a combination of purposive and snowball recruitment strategies to develop the participant pool.

a. Study inclusion criteria:
   - PA must have been the first PA or part of the first group of PAs to be employed in a secondary care setting
   - PA must have been trained in the United Kingdom
   - PA must have a doctor who worked with the PA (or group of PAs) at the time of implementation who consents to participate in an interview
   - PA must have started the job under discussion in 2013 or later

b. Study exclusion criteria:
   - Employed in primary care or not practicing as a PA
   - Not the first PA (or group of PAs hired simultaneously) employed in a specific secondary care setting.
- Trained in US, Canada, the Netherlands or other country
- No corresponding doctor willing to participate
- Started index job prior to 2013

PAs who contacted the PI were screened for fit into inclusion and exclusion criteria. They were advised that they would need to approach a doctor with whom they had worked during their initial days in their job and determine the willingness of that doctor to participate in the study. This doctor needed to either be a consultant or a senior doctor-in-training (equivalent to a fellow in the United States). In the United Kingdom, consultants do not necessarily round on all the patients every day. The clinical team is often headed by a very senior trainee, who is within one or two years of becoming a consultant. Restricting doctor recruitment to only consultants would have potentially limited the participants to people who had less experience with the PA than a senior trainee would have. Once the PA had ascertained that the doctor was willing to participate, the doctor was contacted by the PI via email to explain the study and to obtain preliminary consent for participation. Neither the doctor nor the PA was considered as entered into the study until both parties consented. Twenty seven PAs expressed interest in the study. Nine of these ultimately were enrolled into the study, along with eight doctors. Of these eight doctors, four were consultants and four were senior-level specialty trainees. An informed consent discussion was held with each participant and both US and UK consent forms were signed and returned to the investigator. Participants were offered a small incentive for participation (a £10 gift card to a coffee shop).

The protocol called for doctor-PA pairs to be enrolled in the study. Seven pairs of doctors and PAs were enrolled. In addition, a group of one doctor and two PAs was enrolled. (Table 2 – Characteristics of Study Participants) This group was enrolled to increase the potential for a negative case analysis, as these two PAs had started on the secondary care service at about the
same time, but one of the two PAs left employment on that service after only about one year. Interviewing a PA who had left a job provided a different perspective compared to the doctor and the PA still working in that setting.\textsuperscript{35}

While qualitative research does not purport to be representative, the quality and diversity of the data can be improved by working to recruit participants who are likely to have different experiences and views. To that end, recruitment was conducted with an eye toward maximizing variation in clinical specialty, region of the United Kingdom in which the participants practice, whether the PAs were introduced as a group or singly, and institution of PA training (Table 2).\textsuperscript{64}

Three of the teams included in the study were surgical and five were medical. This breakdown between surgical and medical moderately over-represents surgical PAs compared to the prevalence of surgical PAs in the UK (about 24\% of current UK PAs work in surgery).\textsuperscript{65} The South East of England was over-represented in this study compared to the other regions of England. We made significant attempts to recruit PAs from Scotland into the study, but were unsuccessful in part because of the small number of PAs in Scotland who met the inclusion criteria. No PAs were included from Wales or Northern Ireland because the PA programs in these areas had not yet graduated students. We were successful in recruiting a mix of PAs who had started in their hospital trusts as the sole PA and those who had been hired onto their service as a group. Of the PA participants, seven were graduates of the same PA program. Two of the other four programs with eligible graduates contributed one participant each. While the program from which the largest number of graduates was drawn was one of the two programs that have graduated the most students in the UK, this program was still overrepresented in the study. Although the gender of the doctors and PAs was not explicitly included in the selection process, the gender breakdown of PAs in the study was fairly similar to the gender breakdown of PAs in the UK. Twenty two percent of the PAs in the study were male, whereas 25\% of all UK
PAs are male. Doctors in this study were not similarly representative of the hospital doctor population in the UK. Only one of the doctors in the study was female. While 36% of medical consultants in the UK are female, only 12% of the doctors in this study were female. Doctors in this study often held leadership positions within the hospital, and female doctors are less likely to hold hospital leadership positions than are men.

vi. Interview process

The protocol called for interviews to be conducted over a secure videoconferencing system. Of the seventeen interviews included in the study, fourteen were conducted on a videoconferencing system. Two doctor interviews were conducted in person because these doctors were only willing to be interviewed in person. One of the PAs who worked with a doctor who insisted on an in-person interview was also interviewed in person simply because she happened to be available on the same afternoon as the doctor when the investigator visited the hospital. Written consent was obtained from each participant via hard copy consent forms mailed to the participants and returned by post.

Interviews were all between 30 and 50 minutes in length. Most interviews lasted between 35 and 40 minutes. All interviews were audio-recorded using two devices in case of equipment failure. The recordings of these interviews were securely transmitted to a UK-based research transcription company that has experience complying with UK data protection laws.

vii. Initial data analysis with open coding

In grounded theory methodology, data analysis is started as soon as possible after each interview is conducted. The first technique employed in this data analysis was memo writing.
Initial memos recorded thoughts regarding the interview. They were used to begin to process the data analysis and as a place for the investigator to record ideas for queries for subsequent interviews. Further memos were created throughout the process of interviewing and data analysis served as an ongoing resource for both potential interview questions for the future and for developing concept maps over time. Memos were also a place to begin recording the thoughts of the investigators on their own potential biases and influence on the interviews and data analysis (see “quality assurance – reflexivity” below). Results of this data analysis process were used to inform subsequent interviews, which in the grounded theory paradigm is called “constant comparison”. As themes emerged, later interviewees were queried about these themes to understand how experiences of early and later interviewees are similar or different.

Early data analysis also included open coding of transcripts. As each interview was completed, the recording was submitted to the transcriptionist for transcription. As the transcripts became available, the principal investigator and her co-investigator began coding the data. With the permission of the doctoral committee, the author selected a co-analyst for this project to help decrease the probability of confirmation bias and to improve the quality of the data analysis. The co-analyst selected was Lillian Navarro-Reynolds, MS, PA-C/R, CDE. She is an American-trained physician assistant who worked for three years as a clinical PA and PA educator in the United Kingdom. She was chosen for her knowledge of the PA profession in both the UK and the US, her experience in the NHS, and for her intellectual honesty. Mrs. Navarro-Reynolds coded and evaluated data for this study, but did not participate in the writing of this dissertation.

Based on the documents reviewed for the development of the semi-structured interview questions and the interview questions themselves, the investigators developed twenty one pre-
defined codes. While the early proponents of grounded theory advocated a pure open coding that did not include any presuppositions on the part of the investigators about what they would find, the requirements of modern human subjects research committees for submission of a semi-structured interview guide for approval meant that we did not start this study without some ideas about what we would ask the participants. The initial pre-defined codes came from the questions in the guide. For example, one of the questions we asked doctors and PAs was about their initial expectations for the role compared to the role the PA has currently and how the role has evolved. Among the codes included on the initial coding guide were “PA expectations”, “Doctor expectations”, “Expectations of the other health professionals” and “Role evolution”. These initial pre-defined codes allowed both analysts to have a common language with which to code the initial interviews. As coding of the interviews progressed, both analysts proposed new codes as new ideas emerged from the interviews through the process of open coding. Open coding is the process of looking closely at the interview transcript and attaching descriptive labels to data segments (parts of the interview). These open codes help investigators correlate data segments across participants over time and are the foundation for the axial and theoretical coding to take place later on in the process. Each of these open codes were entered in to the NVivo Qualitative Analysis software (version 11) for future analysis. The investigators performed their coding of each transcript independently of each other to avoid influencing the others’ interpretation of the data.

viii. Continue to conduct interviews and data analysis

In qualitative research, interviews are continued until participants are no longer generating new themes and ideas, even with probes based on early interviews. When no new themes are
forthcoming, the research is said to be “saturated”. From a purely practical standpoint, most qualitative studies interview 10-15 informants. After six pairs of PAs and doctors were interviewed, very few new themes or codes were generated. By the end of the sixth pair, forty one codes had been generated. Two more PA/doctor pairs were interviewed to ensure that what appeared to be saturation was not simply a lack of diversity among the first six pairs. These final two pairs of interviews did not generate substantial new themes, leading the investigators to believe that saturation had been reached.

ix. Perform axial coding

Axial coding is a procedure in which the investigator looks at the codes generated in open coding and begins to categorize the open codes into themes and identify relationships between the open codes. It brings together data that was fragmented during open coding. In our axial coding, we used both inductive and deductive reasoning to look at relationships between codes. We especially sought to identify what causal relationships we might be seeing in the data. In the case of this study, we performed axial coding on two different dimensions – the barriers to the integration of the PA onto the clinical services and the facilitators of the integration of the PA onto the service. In some cases, these were predictable inverses of each other. In other cases, a theme emerged only on the barriers side or only on the facilitators side of the codes.

x. Perform theoretical coding

Theoretical coding is the step at which the theory is generated from the codes and themes that have emerged over the course of the research. Typically, the investigator chooses one core category to which the other categories discovered relate. The investigator then explains
the influences and relationships between these categories to support the generation of a unified theory. Ultimately, this theory can be tested by quantitative studies using deductive instead of inductive reasoning.

xi. Quality assurance for qualitative research

In qualitative research, quality assurance is called “Trustworthiness”. This concept is similar to the concept of validity in quantitative research. Since the development of grounded theory in the 1970s, numerous authors have sought to develop methodology that helps limit the inherent problems present in an inductive research method. Several prominent academic journals including Health Services Research and Academic Medicine have published guides for authors, reviewers and editors on proper trustworthiness methodology for qualitative research. I have outlined below the trustworthiness approaches used in this study.

a. Proper inclusion and exclusion criteria

Because the research question regards PAs who were the first to serve on their secondary-care service, only these PAs were included in the study. See other inclusion and exclusion criteria above.

b. Triangulation

Triangulation in qualitative research is a method of seeking data from a variety of sources which can be used to both broaden and deepen the inquiry through comparison of themes raised by the different data sources. In this study, we used two primary methods of
triangulation. The first is to triangulate between publicly available documents, websites and videos produced by the NHS, Health Education England, the Department of Health, local health authorities, and hospital trusts, and the data which emerges from the interviews. The second approach to triangulation is to triangulate between the data collected from doctors and that collected from PAs. Doctors and PA have useful differences in their perceptions due to the differences in their roles. These different perspectives helped deepen the understanding of important themes.

c. **Sampling method**

Purposive and snowball recruitment was used to try to develop a group of participants which included maximal variation among the participants with respect to:

- **Specialty**
- **Region of the country**
- **Whether PAs were brought in as a group or whether a solo PA was hired first**
- **Institution where the PAs trained** (although there were 29 PA programs operating at the time of recruitment, only 5 universities had graduated PAs).

Enrolling a diverse group of participants allowed for an assessment of whether issues raised were particular to the site or specialty, or whether they are inherent to introducing a new health profession into secondary care. Examination of Table 2 shows the characteristics of the PAs and doctors regarding these four factors. In this table, specialty has been reduced to “Medical” or “Surgical” to preserve PA confidentiality. In some specialties, there are only one or two PAs in the whole country working in a particular specialty, so identifying the specialty is identifying the person. Also, while the institution where the PA trained was a selection characteristic, this
information is reported as institution A, B or C to avoid identification of the university by readers.

d. Establish credibility of investigator with subjects

The principal investigator of this study is reasonably well-known in the physician associate community in the United Kingdom. She publishes regularly in the PA literature in the United Kingdom and hold a national leadership position with the UK PA professional organization. She is on the faculty of PA programs both in the United States and in the United Kingdom. These characteristics enabled the PI to establish credibility with PAs. To establish credibility with doctors, they were provided with information about the employment of the PI and research training and experience of the PI. This information allowed the doctors to determine whether they felt the study was worth their participation. The PAs also often advocated with the doctors on behalf of the PI.  

e. Tactics to ensure honesty of informants

Providing an environment where participants can feel that they are safe to voice their honest opinions is critical to the success of any qualitative project. The PI employed several techniques described in the literature to try to provide a conducive environment for honest expression. Because the PI lives in the US and the participants were in the UK, most interviews were conducted over a videoconferencing system which allowed the interviewer and interviewee to see each other. All informants were properly consented and advised that the transcripts of their interviews will not be read by those outside the research team. No informant was told what other informants said. Specifically, the paired informants
(PAs/doctors) were not told what their respective “partner” shared. The independence of the research team from the NHS was emphasized. Questions to “warm up” the participants were asked first to help the participants feel comfortable and to establish rapport between the investigator and the participant. The PI emphasized to the participants that although she is a PA, she was conducting these interviews in her role as a health workforce researcher and that she wanted to hear their unvarnished experiences and opinions. She provided them with reassurance that she would not share their responses with others. The PI used active listening techniques, including non-verbal cues such as open posture and verbal phrases of encouragement, to get the participant to expound further. Follow up probes were deployed to encourage deeper disclosure.

f. Semi-structured interviewing approach and piloting of interview questions

Initial questions and probes were developed to help keep the interview focused as described above in the methods section. (See Appendix 1 for semi-structured interview guides) The list of questions was piloted with non-participants to improve wording of the questions and usefulness of data collected. However, the interviewer allowed the participants to guide the interview to a certain extent. This approach allowed participants to raise new themes which the investigator did not anticipate in advance. Many of these unanticipated themes raised by participants were crucial to the development of the emerging theory. The semi-structured interview guide was used to ensure some consistency between the questions asked of participants. The semi-structured interview guide was modified slightly over the course of the first six interviews to include themes that arose in the early interviews which were deemed important.59
g. **Prolonged engagement**

Lincoln and Guba discuss “prolonged engagement” as one of the methods for increasing credibility. Although the PI did not have prolonged engagement with the participants in terms of time spent with them, she does share medical training and immersion in the medical culture with the participants that will account for some of the benefit of shared culture, language and experience that is traditionally established through prolonged engagement.

h. **Member checks**

Participants were offered a transcript of their interviews. They were offered the opportunity to review the transcript and add any additional thoughts they may have had on the topic since the time of the interview. No members shared additional thoughts on their original reflections.

i. **Multiple evaluators**

Another term for this quality assurance strategy is “triangulation through multiple analysts”. In addition to the primary investigator, who performed all the interviews, another investigator reviewed all transcripts *de novo*. She generated her own list of themes and possible theories that emanated from these themes to characterize the inhibiting and facilitating factors to the integration of PAs on a secondary care team. The principal investigator and the co-investigator worked together to resolve differences in understanding and to refine and improve codes and resultant themes and theories. The co-investigator provided a check on the investigator to ensure that the data were represented and analyzed faithfully.
j. **Frequent debriefing sessions**

The two investigators regularly compared evaluation codes and our potential theories to explain the phenomena we saw. These discussions were performed soon after interview transcripts became available to inform subsequent meetings with participants. Grounded theory best practices suggest that investigators modify the interview questions for subsequent participants as themes begin to emerge to be able to further deepen and broaden the understanding of emerging themes.\(^{74}\)

k. **Negative case analysis**

All quality rubrics for qualitative work emphasize the extreme importance of evaluating carefully to see why certain participants present a different perspective (a “negative case”) than the dominant perspective being shared.\(^{58,71,72}\) Do they simply have a completely different set of experiences than the others? Is the participant a particularly reflective and insightful person who can articulate issues others cannot? Are the differences due to the maximum variation sampling and therefore due to a difference in location, specialty, etc? Is the participant simply a person who is resistant to change? This study did contain negative cases and the results from these informants will be discussed at length in the results and discussion sections of this paper.

l. **Thick description**

Many authors have attempted to explain thick description in the qualitative literature over the years. Thick description originally comes out of ethnography, where investigators observe
behavior and then ascribe purpose and intentions to that behavior. In grounded theory using interviews as the data collection method (instead of observations of the participants in their own environment), the investigators collect participants’ descriptions of their thoughts, experiences, expectations, beliefs and actions. They then begin to use these descriptions to identify emerging themes, and ultimately theories. Descriptions that are particularly insightful or revelatory are essential not only to theory and theme development, but as exemplars that can be used as quotes in the subsequent manuscript. Investigators need to be thoughtful about including context for the quotes and ideas included in the description of the results of the research to allow readers to better understand the context and the justification for inclusion of these themes in the study. We have hopefully met this burden in this study.

m. Reflexivity

One of the main concerns in qualitative research is that investigators will only “see” what they hope and expect to see. They may be blinded to themes and theories that do not conform to their worldviews. One of the approaches to address this potential problem is for the investigators to be explicit about their worldviews and potential biases and to attend to the potential influence of these potential biases at each step in the analytic process. This process of conscious attention to induction of bias is called “Reflexivity". The investigators have provided a declaration of beliefs which we held at the beginning of the study to make our assumptions explicit to the reader. In addition, we continually examine, acknowledge and seek to address the relationship between ourselves as PAs, any personal knowledge we have of the participants, the position that we have as instructors of PAs and as academic PAs to the results. Prior to data collection, the PI made a list of barriers and facilitators she expected to find in the
interviews. She put this list away and did not review it again until data collection and initial data analysis was complete. After initial analysis was complete, the PI compared the list of themes that emerged from the interviews with the list of themes she had created prior to data collection. The comparison of the expected and the found theme can be seen in Table 3 “Projected and Found Barriers to the Integration of the First UK-trained PA on a Secondary Care Service in the British National Health Service” and Table 4 “Projected and Found Facilitators to the Integration of the First UK-trained PA on a Secondary Care Service in the British National Health Service.” Counsel was sought from the members of the dissertation committee, none of whom are PAs, to keep this analysis honest and to discover and address unconscious bias that I and the other primary evaluator of the transcripts might have exhibited in our assessments.

C. Ethical Considerations

There are no serious ethical concerns about this study. The study was approved by research ethics authorities at both an American and a British university to ensure that the studies abided by all relevant laws in both countries. Potential participants were invited to join the study and could say no without consequence. In addition, participants were free not to answer any particular question within the interview. They were free to withdraw from the study at any time, although none of them chose to do so. Participants were asked about their professional roles and experiences, which are traditionally considered less sensitive than asking them about personal roles and experiences. Interview recordings were transmitted securely, were transcribed by a professional research transcriptionist and were anonymized for analysis.
CHAPTER 4 - RESULTS

A. Introduction

As is typical with qualitative research using individual interviews, the seventeen interviews conducted for this study provided large amounts of data. All transcripts of interviews were read and coded by two analysts for barriers and facilitators identified by the participants. The interview data were coded for themes using NVivo 11 software. The analysts had developed some initial codes based on the contents of the semi-structured interview guide, but continued to add codes as participants raised new themes in the interviews. A codebook was kept and shared between the two analysts to encourage consistency of code application. The ideas below emerged from the coding of the transcripts by both analysts and discussion after all interviews had been completed between the two analysts about the data. Nineteen “codes” (nine barriers and ten facilitators) were identified.

After all the transcripts had been coded, the principal investigator coded the data at the axial level (Figure 3). This process involved categorizing the initial codes into thematic groups to identify relationships between the codes generated in the initial data analysis. Six “themes” were developed, three groups of barriers and three groups of facilitators. Finally, the principal investigator engaged in theoretical coding. During this process, the themes generated in the axial coding process were evaluated to identify the unifying theory which emerges from the study.

B. Barriers to the Integration of PAs on a Secondary Care Service in the NHS

Study participants described many barriers to the full use of PAs in their secondary care services. (See Figure 3). Upon analysis of the data from the interviews, nine types of barriers
(codes) were identified. These nine types were ultimately grouped into three themes, all of which support the overarching theory that an unclear role for the PA on the service is the primary barrier to effective integration of the PA. We will review the nine types of barriers identified through open coding and then justify their grouping and the reasons for the emergence of the final theory.

i. Nine barriers to the Integration of PAs on a Secondary Care Service in the NHS

a. PAs recruited for employment by someone other than the person with whom they will work on a day-to-day basis creates uncertainty for PAs and doctors alike.

Several PAs and doctors reported that the decision to hire the PA was not made by the doctors who actually practice on the wards. In some cases, the PAs were recruited because of a trust-wide initiative to use PAs. In other cases, PAs were hired because someone was offering money to hire PAs that could not be used to hire more doctors or other clinicians. In these cases, the doctors recognized that any person with some medical background had the potential to be helpful with the workload. However, these doctors rarely knew what to expect from the PAs or how to bring them aboard.

Physician F - We had some funding and [the PAs] were literally just coming off the training program and what our trust wanted to try and do was get in there quite early because they saw that this is possibly the future. We were short staffed of nurse clinicians, we were short staffed on doctors and we saw [PA] as an intermediary. Some money appeared, it was obviously higher than me, some money appeared for the position and to support the role and then we had money available within [Department A] and said, “I think this role would be good there.” The funding, it just appeared and then we said, “We’ll take them while we can”...
It just so happened people had applied for the job and on that day I happened to be around and they said, “[Physician F], there is an interview in half an hour, can you do it?” type of thing. The next thing I know I was already in charge of [the PAs], not in the entire trust but certainly in [Department A] and [Department B]!

I think if I’m absolutely honest with you [the PA role] been quite difficult to catch on. The difficulty we have is knowing where the role actually sits [in our system].

Having the PA be hired by one doctor and supervised by someone different created a lot of confusion for both the PAs and for the doctors. Neither PAs nor doctors were certain of role envisioned by the person or group of people who had made the decision to hire the PA. No job description for the PA was provided to the PAs or the doctors. This made it difficult for the PA to enact the PA role on the service.

Med PA 96 - So, it wasn’t really a fixed thing when I arrived. They didn’t really know whether I’d be doing outpatients, inpatients. A lot of the consultants didn’t know what I would be able to do. They didn’t really have a particular vision for it, so I wasn’t quite sure.

b. The clinical workload inhibits opportunities for PA role development.

Several PAs described situations in which the medical and surgical teams were very happy to have their services and their assistance in caring for patients because the clinical workload they faced on a daily basis was overwhelming. PAs in some hospitals were simply put on the call schedule (“the rota”) for junior doctors just to make sure all patients were covered. However, despite the PA having similar responsibilities to the junior doctors, the hospitals did not invest in PAs the same way they invested in the junior doctors. Junior doctors had protected educational time, but in some cases, there was no similar opportunity for the PAs to obtain further training. Unfortunately, the amount of work that needed to be done immediately limited the ability and
willingness of the team to allow the PA to take time to receive training. PAs were often covering the wards while the junior doctors attended educational sessions. Without further training, the PAs were unable to develop their PA role more fully.

In addition, the PAs wanted someone to think with them about how the role of the PA might be developed, separate from the role of the junior doctors. Consultants were, in principle, willing to think about role development with the PA, but were often unable to make time for this due to the clinical demands of the hospital.

Med PA 53 -So this is the frustrating thing. My boss said “this is where I want the PA to develop”. The problem is the reason we have not managed to do that is because the junior doctor’s rota is so short. I don’t see us as [progressing] because we are an integral part of the rota.

c. **PAs just expected to do clinical “jobs” instead of assessing patients.**

In the United Kingdom, many of the clinical tasks that would be accomplished by nursing staff in the United States are performed by doctors. For example, in the UK doctors may draw blood, obtain peripheral intravenous access, insert urinary catheters, or obtain an ECG. Colloquially, these tasks are called “jobs” and the team generates a “jobs” list each day for the members of the medical team. Jobs can also include tasks such as checking laboratory results or confirming that a consultation by another service has been performed. Medical staff in the UK must juggle assessing patients and making decisions with completing these jobs for the patients. Often the jobs need to be done first to allow the doctors to obtain the data they need to make decisions. A substantial portion of the day can be used in completing the jobs list.

Some PAs were quite frustrated because they felt that the team viewed them as a person who could complete jobs, but who could not perform semi-autonomous patient assessments. The PAs had been trained to take a medical history, perform a physical examination, evaluate
any laboratory or radiology results the patient had, and develop a differential diagnosis and management plan. While some PAs were permitted to use nearly the full scope of their training, other PAs were being used simply as a skilled pair of hands to complete the jobs list of the team. Other PAs were required to do the least desirable tasks, specifically, the discharge summaries and discharge paperwork that many medical providers abhor.

A quote from a PA working in a medical specialty illustrates the difference in expectation between the PA and the doctors. The PA expected to be assessing patients, but the doctors just wanted help getting the jobs done.

Med PA 74 - They didn’t really know what to do with me. So, I started in [Department], and just joined the ward rounds. My thought of what my role would be was doing ward rounds, and clerking patients. So, that’s what other PAs were doing in [city in which PA had trained as a student], you know, in the trust that I had been working at [as a student].

So, I figured that that’s what I would be doing, but it was met with a bit of a sense that that wouldn’t be what I was doing ... So, the consultant that I was working with was essentially saying, “If you can take the history and examine them, but you can’t request the ionizing radiation, and prescribe the medications on the drug chart with all the regular meds, and whatever treatment I want to give, then it’s almost not worth it,” which I completely disagreed with, because I’m still doing a lot of the front work. I’m taking the blood, and getting the initial tests out of the way.

So, I haven’t really been clerking patients, and I’m still not clerking patients, which is a bit frustrating.

A doctor said that his initial perception of the PA was just someone who would be there to help complete jobs and not engage in patient assessment.

[Interviewer question – Did you expect that the PAs would be able to assess patients or not?] Physician D [in response] - I have to say, at the time, no, I didn’t really think they would be doing those sorts of
independent things. I thought they would be more assisting with the machinations of the day-to-day practice.

A surgical PA believed that the junior doctors were leaving less desirable tasks such as paperwork to the PAs and taking the opportunity to go to the operating theater more often.

Surg PA 17 – Some doctors felt, “Since we have them now we can leave duties and responsibilities to them, so we can have more theatre time.” This wasn’t people misbehaving, it was just their understanding, “This new role has come in, maybe it’s here to give us more time so we can focus on our training.” It might just be because we were new in the department and there were certain things we weren’t able to do. People were expecting us to do the little jobs, such as doing discharge letters.

Tasks such as drawing blood and completing paperwork are repetitive and boring.

While it is understandable that junior doctors would love to be relieved of this work, PAs do not want to perform only the less interesting tasks. They wish to do tasks that require them to think and use their medical training.

d. Lack of understanding of PA role by other professions

The newness of the PA role in the UK and in each hospital meant that many health professionals had not heard of PAs before. Most had never worked with a PA before. PAs found that they had to continuously explain their role to those with whom they worked in the hospital.

Med PA 31 – I guess I was just constantly giving a blurb of what a PA is, how I've been trained and people genuinely seemed interested, so it was quite nice. It was just about spreading the word really and showing them what I could do... I feel like they didn't expect that much of me to start with, which I think is fair. But then with time, I'd like to think I showed them quite quickly that I could do quite a lot of what [the doctors] were doing.
One surgeon had heard of PAs through the medical grapevine but had no idea how they were trained or how they might be deployed on a practical level.

Surgeon A – To be honest, I don’t think I had any expectations, because I had no idea what a PA was. It’s, you know, as simple as that. I just had no idea. I had heard about it vaguely; I knew that there was a course at St George’s Hospital for PAs, and things like that; I knew they were doing some sort of anatomy, but I didn’t really know what was their role in real life.

One PA reflected on how she had to work to reassure doctors and nurses that she was not there to impinge on their roles within the healthcare team. This PA tried to re-focus the discussion to the need for an increased workforce to care for all the patients in the NHS.

Surg PA 17 - It was difficult at first, I would say challenging. Obviously, the physician associate role is new. Very much in the premature stage in the UK. Most people had never heard of physician assistants or physician associates. It was a mixed feeling. Obviously, everyone was professional and very welcoming, but there was always this skeptically in terms of, “Are they nurses? Are they doctors? Do you fall in-between?” There were a lot of moments where we had to reassure people that, “We’re not here to take the doctors’ jobs and we’re not nurses. Again, we’re here to contribute to a growing workforce.”

Several PAs made comments that doctors don’t expect PAs to know about the practice of medicine specifically. Some of the media coverage of PAs has indicated that they only have a “two-year degree” (instead of clarifying that the two years of training come after a bachelor’s degree in a life science). Because medicine in the UK is a five-year undergraduate degree, it is unsurprising that doctors might be concerned about people who they think have less than half of the training they have practicing medicine.

Med PA 53 - I think the biggest misconception is people don’t expect that PAs have a good foundation knowledge of medicine. I think people have this idea that we’re ill-educated, because there’s this
huge misconception that we have become pseudo-doctors in just two years. Not knowing how intense the course is; that we already have a previous degree, work experience.

Well, I had one SHO; we became good friends, and she was very honest, and that’s something I admired very much about her. After working with me for a few weeks, she’s told me, “You know, [Med PA 53], when they were hiring PAs; we were all very upset. And when I told my boyfriend, who works in plastics, ‘We are hiring PAs,’ he told me he felt sorry for me.” (Laughter) And then she said, “But after working with you guys for a few weeks, you guys are very helpful, a great addition to the team.”

While some colleagues didn’t think the PAs could do much at all, others thought the PAs could do everything a doctor could do. This confusion led to frustration for PAs, nurses, pharmacists, microbiologists, and doctors. In some cases, PAs were allowed to perform certain duties for a while, only to have the privilege revoked later on for reasons that seemed illogical or even potentially unsafe to the PA. For example, one PA was allowed for more than a year to take bacterial culture results from the microbiology team and have a discussion with the microbiologist about which antibiotics should be prescribed. He would then work with one of the doctors on the team to order the antibiotics for the patient. This system worked well for his team, especially in cases where the patient had been in the hospital for a long time and the PA was the medical provider who knew the patient best. One day, he was told he could no longer take microbiology results or discuss antibiotics with the microbiologist because he is not a prescriber.

Surg PA 69 - An email was sent out from [Microbiology Administrator] and all of a sudden it was, “No, I can’t speak to you anymore.” “Well, I know you, you know me. I’ve never had any issues. So, what’s changed?” It’s like, “Well, why now? I’ve been here for a year and a half, why are you saying this now when for the past time, we’ve had no issues?” They just said because they wanted to limit the errors in terms
of writing the medications in the chart, as we’re not a prescriber. But it would be the same as me writing it down on a bit of paper as it would be a doctor, and then the doctor copying it onto the drug chart.

So, I would always write down what they say, as you would do with anything. And then [I would say to the doctor], “I’ve written this down. Can you then prescribe it in this drug chart for me? I’ve chatted with a microbiologist; this is what they suggest.” But, if I know the patients well enough, and I’ve dealt with the patient for about a month, or six weeks, and I know their history, I know everything, it makes sense for me to speak to [the Microbiologist] rather than a doctor who doesn’t know [the patient], doesn’t know their background.

e. Absence of a consistent or powerful PA champion

The literature on the development of the PA profession in the United States has pointed to the importance of having a person (usually a doctor) of reasonably high status in the organization who advocates for PAs and uses his or her credibility to improve the response of others to the PA. This person is called a “champion”. While some of the PAs in this study had excellent champions, some were without a champion to advocate for them. For example, when one PA was asked who advocates for PAs in this particular hospital, the PA indicated that there has not really been one clear person to champion the role. He reported that for a time there was an experienced American PA at his hospital, but in a different specialty. She would come around to his floor and try to help him solve problems he was having on his team. She would also do some teaching with the newly graduated PAs. When she left, he did not really know who would be considered his champion any more. He felt frustrated because the surgeon who hired him and who did his performance evaluations did not help him much in other ways. A nursing leader was very helpful and supportive, but she is part of the nursing hierarchy, not the medical leadership.
Surg PA 69 - So, I have, in essence, I think two line managers; one is [Surgeon] who was the consultant surgeon who originally hired me, who had done my appraisals for the last year, year and a half. But then, I've kind of gone along with the side of the advanced nurse practitioners, because- it's hard, because technically, I'm not on the medical team, but I'm not [a] nurse practitioner. So, I'm sort of in the middle, as you can probably imagine.

So, [Nursing Leader] is one of the leads in [Specialty] for the nurse practitioners; so she's kind of taken on the role of looking after me, and helping me get my feet on the ground, and she's been very helpful. She's been able to do a lot more [for me] than what [Consultant Surgeon] has been able to do, or maybe she has the time to do it, or she has more drive to do it.”

Another PA understood the power that a champion can have, particularly in delineating the role the PA will play on the team. When asked what advice she had for a service considering bringing a PA on board, she said:

Med PA 42 – I think that the best thing the consultant could do is to personally take that PA under their wing for a week, and everybody that they see and meet, they personally introduce [the PA] as a way of giving them their rubber stamp. If that consultant is saying “This is a new member of our team. They’re a new profession. I think it’s a great thing. I think they’re brilliant. Here they are. You’ll see them a lot. These are going to be their responsibilities.” That stamp and seal of approval will go a long way.

f. PA has a willing champion, but the champion encounters barriers to carrying out the role.

Several PAs advised that they had champions, but that the champions had limited effectiveness. Several doctors reported that they were the champion for their PAs, but that they wished they could be a more effective champion. They realized that being a champion for the PAs could substantially help them integrate into the team. One champion felt like he just
had no knowledge of or training for his new role as a supervisor of a PA. He was just assigned by someone to do the job. He clearly wanted to supervise the PA well, but was just uncertain how to go about it.

Physician F - I think as supervisors I would imagine that a lot of trusts are very similar to ours and people like me are falling into that role rather than actually saying, “I want to be a supervisor of that role,” I fell into it. Because of that, I presume most consultants are like me, they want to provide a solid foundation for development, then we just need to know how to do that. I don’t know how to support [PA] to make the job more fulfilling. Is that fair?

One PA was frustrated because she could see that there was the potential to have a functioning champion, but that the primary consultant was too busy. When she gently tried to suggest that maybe another doctor could serve this role, the consultant was not willing to act on that suggestion, leaving the PA without a functional champion.

Med PA 53 – And, the frustrating thing is, is they see the potential of PAs in the department. Like [Medical Consultant A] who is one our clinical lead consultants, he sees the potential of it. And so does [Medical Consultant B], and so do other consultants. It’s not they don’t see the potential; they do see the potential, but there’s a lack of structure and organization to achieve that. And the sad thing is, when we had a meeting, in a very nice manner, I tried to put to my [Medical Consultant A] that, you know, “I understand you have a lot in your hands, that I wouldn’t mind if another consultant would become responsible for us, to guide us.” I just tried to put that in a very nice, politically correct way. And that didn’t work either. (Laughter).

Another service did have a consultant who was willing to give up the role to someone who was more often physically present. Although it took some time and effort for the PAs to ask the new consultant for some help, eventually they did receive it and the PAs were appreciative of her efforts.
Med PA 42 - Dr [K] was definitely the lead, and then because it turned out he wasn’t around as much, Dr [L] was then our lead. She was lovely, she was very nice, and she was very interested in us, but it did take a bit of, sort of, saying, “We would really like to have a tutor group, maybe once a week, to meet up and to discuss things.” We did have to ask for a lot of stuff, which is not necessarily a bad thing.

One PA stated that she had a very effective champion who really believed in her and her patient care skills. She was so confident that she gave the PA a lot of autonomy. However, that confidence in the PA quickly became a problem for the PA. The PA was assigned to cover an entire ward of very seriously ill patients while the surgeons were in the operating theater. Because the PA could not prescribe or order radiologic investigations, the she felt terrified that she would not be able to provide proper care for seriously ill people expeditiously enough and that someone would die. She was worried that if someone died, it would end up on the news as “physician associate kills patient”. It took a while for the champion to realize how this was unsafe before things were changed.

Surg PA 17 – You would think: “Nobody would leave me to look after a whole ward of patients.” But in the beginning, there were times when that happened. Obviously, you’re new in the department and you don’t want to be the troublemaker and say, “I’m not happy with this.” Even though I wasn’t happy with it. You sort of have to soldier on. That’s one thing I didn’t anticipate - being left on my own, especially when you’re new to the department, still feeling insecure and just thinking, “Oh God, if something happens that will be plastered all over the news.”

PA role limited by legal restrictions on prescribing or ordering tests with ionizing radiation

Physician Associates are not a legally recognized health profession in the United Kingdom. Clearly, people who are not members of a regulated health profession cannot
and should not prescribe medications or be permitted to request tests which involve
exposure of the patient to ionizing radiation. Both doctors and PAs recognize that these
restrictions make sense from a legal perspective, but both groups also are frustrated
with the inability of the PAs to perform tasks for which they are trained.

Med PA 96 – In terms of day-to-day things, it’s the standard prescribing,
radiation and those things we can’t do because of [lack of] regulation.

Physician C - So all my unanticipated problems [with PAs] stemmed
from their relationship with the rest of the hospital, because they’re not
recognized by the GMC. There are certain things, which are ridiculously
trivial, that they can’t do, such as request a chest X-ray, and the hospital
did not know where to put them.

The frustration the doctors feel is compounded by the demands of extremely
busy clinical environments. The PA could be of more use if he or she did not
have to find a doctor to order medications or tests each time.

Physician F - Once again the problem we have is autonomy. In the UK, as
you’ll appreciate, it is terribly busy in [Department] and from a
consultant’s perspective we’re incredibly busy. We’re not making
excuses but let’s say [PA] is on a ward round with us, we’re doing a lot
of it ourselves...In the UK we’re having issues with prescribing and
ionizing radiation, so when it comes to most tests we end up having to
request them ourselves, MR, CT and x-ray. Certainly when it comes to
prescribing, a lot of the ward rounds are altering medication and
starting medication and it’s proving somewhat challenging [because the
PA cannot prescribe].

One doctor noted that the lack of authorization for the PA to prescribe and order
tests with ionizing radiation meant that patient discharges from the hospital were
delayed while the doctor was in clinic. If the PA could have prescribed, she or he could
have discharged patients from the hospital. If the PA could have ordered radiologic
investigations, she or he could have moved the patient’s clinical evaluation forward.

The doctors tried workarounds to deal with these problems.

Physician D - I think barriers, probably something that I guess you could think of as a barrier is the fact that they’re not allowed to prescribe...For example, there are times when we don’t have enough staff members and if, for example, I’m in a clinic in the afternoon and the only person on the ward is a PA, then I know that actually it’s going to be difficult for anything to move, if they’re not able to prescribe. Normally, actually, people just pitch-in from different parts and you may grab an SHO off the other ward and say, "If anything needs to be prescribed, can you just prescribe it?"

h. Lack of administrative structure to facilitate use of PAs

Because PAs are not recognized professionals in the UK, the National Health Service has not developed administrative structures to evaluate, support or guide PAs and doctors as they seek to implement the role. Doctors who were accustomed to having specific forms and procedures for the evaluation (an “appraisal”) of doctors in training at different levels struggled with having no guidance as to how to implement the PA role or evaluate the PAs on their teams. Even on a practical level they struggled simply because there are no forms for them to fill out when doing a PA appraisal. They worried that they might be reprimanded by higher level administrators for not supervising the PAs “correctly”.

Physician F – The unanticipated [issue] was governance really, because from our perspective we’re very regimented now, we’ve got Big Brother watching us, literally. It’s like we’re being watched upon and everything has to be signed off, appraisals, governance and hierarchy...Obviously I had responsibility [for evaluation] as medical lead but I still don’t know where they fall because they’re not doctors... A big issue is appraisal, because it’s hard to even do a formal appraisal for [the PAs] because they don’t fall into the appraisals that they do with the nurses, and he doesn’t fall into our medical appraisal. [The PAs] just don’t fit.
The PAs also noticed that there was no system for evaluation of their performance at the beginning. One PA who has been in her job for slightly longer than some of the other PAs in this study noted the progress her department had made in this area over time, resulting in a satisfactory process for their service.

Med PA 31 – I think it's the whole process of having a completely new role, people not being aware of what your training is, what you're able to do, not able to do and also finding a place for that role within the existing members of the multi-disciplinary team. I think it took a bit of time to set up appraisals and having a supervisor as such to start with. Because there wasn't a fixed process of how often you should have an appraisal, it was very much based on how you wanted to do it in the department. But once that got established, it worked quite well.

Hospitals struggled to determine where PAs should fit in the existing administrative structure and sometimes wanted to place them away from the doctors and into another health profession group. Doctors and PAs alike resisted this approach.

Physician C – The hospital did not know where to put them. So while there is no conflict between them and different groups of professionals, the hospital at various stages attempted to add them to the nursing cohort or the therapy cohort.

Sometimes administrative functions were faulty. For example, at one hospital, the clinicians put identification cards into the computer when they need to document care or request interventions. Initially, the hospital trust did not seem to differentiate between the cards of PAs and of doctors, giving PAs the computer access to prescribe or order radiological tests. PAs knew not to use this access to request medications or studies. However, the PAs lived in fear that someone else might accidentally access their computer account for a few minutes and order something that a PA should not order under the PA’s name.

Med PA 42 – The computer system in the hospital - physician associate didn’t exist as a role. So, in order for us to be able to do things we
needed to do we were [classified as] associate specialists, so cast as doctors, which meant that our cards could prescribe.

So, you leave your card in a computer, and particularly, say, for example, [if you were] on the [specialty emergency beeper], and somebody could go up and prescribe [medication] on your card. Why would it prescribe it, if you weren’t allowed to prescribe? So, you had that kind of worry and concern all the time.

Funding for PA positions was another area of administrative uncertainty that limited the ability of services that wished to hire more PAs to do so. One medical doctor reported that he would like to hire another PA, but the fact that PAs were paid out of a different budget than junior doctors are made this difficult. Junior doctors are paid out of a doctor training budget by a regional medical education organization (the “deanery”), while PAs would have to be paid by the hospital itself. Essentially, junior doctors do not cost the hospital money, but the PAs do. This funding structure makes it more attractive to hire junior doctors than PAs, even if the service would prefer a PA for the continuity they provide.

Physician G - Trying to secure funding for PA posts is quite difficult. I’d very much like to have a second post. We’ve talked about having a joint post with [Department H] but getting that through the management structure as a business case is quite difficult because the junior doctors are all paid through the deanery. When you lose junior doctors, you don't actually find you've got more money in your budget... I think ensuring that there are clear funding pathways for people like this within the HR payroll system is something we haven’t worked out yet.

One surgical service would have liked to hire more PAs, but had been told that if they hired more PAs, they would be allowed fewer senior house officers (SHOs). This particular department had allowed their PA a wide scope of practice, but because PAs and SHOs are not directly comparable, the choice between the two types of providers was difficult to make. As of the time of the interview, the doctor had not yet resolved which choice their department was
going to make.

Surgeon B – I think the main barrier at the moment is finance. How many PAs are the equivalent of an SHO? I would suggest that [PA] is more than equal to an SHO. Sometimes she’s worth two. Some PAs will not be like that. It’s difficult when you’re trying to job plan. I know at the moment they want to bring more PAs, but then you need to get rid of some SHOs, so what does that mean for a service? What does that mean for the department? It’s a bit up in the air. We don’t really know.

i. Hospitals struggled to define an appropriate scope of practice for their PAs, due to lack of regulatory guidance

Because the role of the PA is not yet legally recognized in the UK, no formal guidance from the government exists to help hospitals and doctors define a specific scope of practice for their PAs. Some hospitals chose to interpret the delegatory authority granted to doctors to mean that the PA could perform any service (other than prescribing or requesting ionizing radiation) which the doctor chose to delegate. These services viewed the PAs as being similar to doctors-in-training and felt that as long as they had ensured that the PAs were competent and safe to perform the procedure, that it was fine to do so. One surgeon was keen to teach his PA more advanced surgical skills:

Surgeon B – I take her to theatre. Whenever I’m on call, I take her to theatre with me. I’ll say, “I have an emergency that I think will go to theatre in an hour. Do you have time? Get some scrubs on, come join. I’ll teach you whatever you need.” I do that in front of the other surgeons so that they know that that’s what we should be doing.

Other hospitals chose to interpret the delegatory authority much more narrowly. These hospitals restricted the PAs from performing any task that could have been in any way considered dangerous, including basic assessments of patients.

Surgeon E - I think now everyone understands who he is and what his
role is and what he can do and what he cannot do. So in allocating the duties we take into consideration that he won’t be alone in particular wards, not taking responsibility alone because of safety issues and especially can’t prescribe and can’t do everything that a doctor can do. So when he is working in a ward there is always a doctor on the team and he doesn’t do any on-calls and he doesn’t see patients alone.

One hospital took the approach that the primary role for their PAs was to perform procedures. They felt it was a waste of time for the PA to perform the history and physical examination of the patient if the PA could not also prescribe medicine or order certain tests. However, using their PAs to complete the time-consuming clinical jobs list seemed to them to be a better use of the PA’s time. In this case, the PA became the go-to clinician for blood draws and lumbar punctures. He was excited about the possibility of being trained to do paracentesis and thoracentesis – both very invasive procedures.

Med PA 74 - So, [because I am not assessing patients] I’ve tried to do as many skills as I can. I’m very good at taking bloods. Often the nurses, or the doctors, will come to me when there’s a very difficult blood, a cannula to do. I do lumbar punctures. I’m going to start doing [paracentesis]. The medical director has looked at maybe [sending] me to respiratory for a bit- trying to get me some more specialist skills, and the respiratory consultants seem very keen on PAs, as well. [The respiratory consultants have] had students, and want me to do some therapeutic [thoracentesis] taps, and having me as a regular person that can do them.

It is interesting that the doctors at this hospital felt uncertain about letting an unlicensed health professional take a history from a patient and perform a physical examination but were willing to allow the PA to perform some quite invasive medical procedures. It is possible that they viewed these as more amenable to PA practice due to their repetitive (albeit highly invasive) nature, as compared to patient assessment which always varies from patient to patient.
ii. Three themes of barriers to the integration of PAs onto a secondary care service

After identifying the nine barriers which arose from the interviews with the participants, the barriers were grouped into three themes. Each theme represents a common underlying difficulty that was manifested in one of the nine identified barriers. (Figure 3).

a. Lack of understanding of what the PA role is or could be inhibits development of the PA role

Four codes comprised this theme: PAs brought in by someone other than the person with whom they will work, clinical workload inhibits opportunities for the PA role development, PA just doing SHO “jobs” instead of assessing patients, and frank lack of understanding of the PA role. When PAs are hired by an administrator or by someone other than the doctors on the team with whom they will work, there is a high potential for there to be confusion about the PA role at multiple levels: the administration of the hospital trust who thinks that the PAs will be able to bring certain skills to the team, the doctors with whom the PAs actually work who may have another conception of the potential role for the PAs, and the PAs themselves, who may have yet a different set of expectations for how they can be a part of the team. When the PAs arrive, whose concept of the role do the PAs try to enact? Do the PAs even know that others don’t share their views of the role? What happens when the doctor expects a certain set of skills and the PAs do not have the training or experience to meet that expectation?

NHS hospitals are currently overwhelmed with the demands of providing more care to an aging, increasingly unhealthy, population. The British Medical Association paper “Working in the System that is Under Pressure” reports that doctors are providing more complex care to older, sicker patients than ever before with less government funding and less nursing support.
This situation is leading to unsafe conditions for patients and burnout among doctors. The current government policy of trying to move Britain out of the European Union (EU), known as “Brexit”, is exacerbating these difficulties because the NHS is heavily reliant on staff from the EU to meet its mission.

While PAs have the potential to help doctors facing these conditions, they cannot help if they are not receiving sufficient on-the-job specialty training to relieve the burden on the team. Despite the doctors’ recognition that they should devote time to provide the teaching and training that would allow PAs to grow further and for a PA role on that service and in that specialty to be specifically defined, the overwhelming nature of the daily work keeps them from making this investment. Doctors and PAs are both frustrated by this difficulty, as expressed below:

   Physician F - I think [the PA] understands our frustration, I think he feels it. I don’t know how to make it better purely because I’m pulled everywhere and I’m trying to develop a service. I’m trying to look after my medical juniors, I look after the nurse clinicians, I’ve got [the PA] and I don’t know how to make it better.

Assigning PAs primarily to do the clinical “jobs” (drawing blood, obtaining consents, organizing the team, checking laboratory results, performing minor procedures, or providing patient education) that do not involve the PA using her or his diagnostic or therapeutic skills is not only failure of recognition of what the PA could bring to the team, it also actively inhibits the development of the individual PA and the PA role over time. When there is no existing role and the role becomes defined as “the person who does the clinical jobs list generate by the doctor”, instead of “the PA is a full member of the medical team” there is little room for growth. While a PA may be allowed over time to do more complex items on the jobs list (ex: lumbar punctures instead of just venipuncture), this advancement does not change the fundamental role of the PA
in the minds of doctors, nurses, administrators, etc. In one hospital, the PA was not permitted to assess patients on his own. He simply helps the ward run its daily routine. The PA primarily checks laboratory results and ensures that consultations from other services are complete. He works as a sort of clinical “ward manager” but is not a full part of the medical team.

Finally, a general lack of understanding of the PA role was a barrier mentioned in one way or another by all of PAs and nearly all doctors interviewed. All of them discussed being uncertain about what tasks were legal for PAs to perform. All of the PAs reported having to continuously provide education about the PA role to other health professionals, and in particular to junior doctors, who rotate through the hospitals every 3-6 months. They also had to continuously educate nurses because nursing shortages in the UK have resulted in an increased use of temporary nurses, who may work only one shift or for one month on a particular clinical floor. Some PAs reported having been cleared to perform a particular task at some point and then later on having that privilege revoked. Lack of understanding of the PA role in the restrictive sense (you can’t do that because you are a PA) was the most common complaint, but a few PAs also reported that the lack of understanding of the PA role meant they were given responsibilities for which they were not trained or prepared. For example, a surgical PA who was asked to care for a floor of 20 people while her surgeon was in the operating room very early in her PA career felt that she did not yet have the training or experience to safely manage these patients without assistance. She worried deeply that a patient under her care would suffer a bad outcome because of her lack of training and experience with seriously ill patients. She also worried about how she would help these patients when she could not order IV fluids, medications or radiographic studies.

Doctors also expressed that the lack of their own understanding of the PA role and the lack of understanding of others on the health care team was a significant barrier to optimal
deployment of PAs on their services. Many of the doctors divulged that they had almost no idea
what education and training PAs had before they arrived on service. They struggled to picture a
person performing medical tasks who was not a doctor. Most of them struggled with how to
assess PA performance and how to develop the expertise of PAs outside the traditional training
structures used for junior doctors. The doctors in this study varied to an astonishing degree
about what they thought the role of the PA should be. One doctor felt that PAs should never be
allowed to perform a clinical assessment of a patient. In his views, PAs should be limited to
performing clinical procedures as directed by the doctor. Another doctor believed that the PAs
should be trained over time to perform invasive surgical procedures without doctor supervision.
Predictably, the PAs who worked with these two doctors had very different perspectives on
whether they saw a long-term future for themselves in their current secondary care service.

b. Having no champion or a champion of limited effectiveness inhibits the use of the PA
role in the hospital trust

Two codes comprised this theme: either the PA has no champion at all or the champion is
not effective. In the second case, the champions often wanted to help the PAs and the PAs
recognized that the champion had good intentions. However, the champion was often
constrained by factors over which she or he had no control, such as lack of initial training to
work with PAs, an overwhelming personal workload, or conflicting information in the
environment about the role of the PA. Regardless of whether the PA does not have a champion
at all or whether that champion has limited effectiveness, the PA is without an effective
advocate for the PA and for the PA role within the health system in which they work.

The lack of effective champions is a serious potential barrier for both individual PAs and the
PA role as a whole. For individual PAs, it can mean that they need to spend their time
advocating for themselves and untangling complicated administrative problems instead of providing care to patients or taking time to obtain further education and training to advance their skills. Lack of a champion can also leave the PA feeling like they are in an uncertain position within the medical ream and within the hospital trust. They do not know if someone will support them if there is a problem with a patient or another staff member. They also are not certain of who might be advocating for them with doctors and administrators within the NHS or with national policymakers.

**c. Regulatory issues contribute to lack of role clarity**

Three codes comprised this theme: Inability of the PAs to prescribe medications or request studies using ionizing radiation due to the lack of legal recognition of the profession in the UK, lack of administrative structure to facilitate the use of PAs, and uncertainty about appropriate scope of practice given the lack of a legally defined PA role in the UK. Unlike the other two classes of barriers, these all have the potential to be mostly solved if and when the PA profession in the United Kingdom is legally recognized and the NHS and government develop guidance about the PA role to give to health systems, doctors and PAs.

It is not necessarily obvious how the prohibition on prescribing and ordering tests that use ionizing radiation might contribute to a lack of role clarity. Conceivably, other health professionals could grasp the concept that a PA may be fully trained and qualified to perform these duties but cannot perform them on a day-to-day basis simply due to the laws. However, in practice, the acts of prescribing medications and ordering tests are so central to the work that medical providers do that it is easy for people to make a judgment about the medical qualifications of a team member who is not performing those tasks. In this situation, PAs may
remind doctors of medical students – people with some medical training who have not yet been entrusted with some of the more potentially dangerous medical tasks. In fact, several doctors spoke about the PA with whom they worked as “like a medical student”. Not seeing any way for the PA to begin to prescribe or order tests with ionizing radiation, the PA, in the minds of these doctors, was consigned to a permanent medical student status. Many of the doctors who expressed those thoughts also expressed concern for the PAs that they had trained for a dead end job that they might not wish to continue to hold in the future. Physician H summed up the feeling of these doctors best:

Physician H: I think it is a valuable role, [but] I struggle to believe that someone with [PA’s] potential will be happy doing this without any stretch in the job in five or six years’ time.

The lack of formal recognition of the PA role by the government or by the NHS means that there are no formalized structures to help hospital trusts bring PAs on to the service, evaluate their service to the team, introduce the PAs to other health professionals, and formalize their role. Many PAs and doctors noted that they had essentially improvised to fill these gaps. They would introduce the PAs as being “between a doctor and a nurse” or “like an advanced care practitioner” or “like a junior doctor”. They modified forms used to evaluate the work of other health professionals and asked IT services to give the PAs IT permissions in the electronic health record for a junior doctor or a nurse. None of the doctors or PAs reported getting any formal administrative guidance from the NHS or from their hospital trusts.

Inevitably, there would be a problem with the improvised solution and the improvisation would cause disruption and further confusion for the doctors and PAs alike. For example, in one hospital trust, the PAs were given the IT privileges that would allow them to order CT scans through the electronic medical record because the doctors had requested IT to make the PAs
“like a junior doctor”, so that they could order serologic tests, consultations, etc. The PAs knew not to use their privilege to order tests with ionizing radiation, but they had a great fear that if a junior doctor sat down at the computer to which the PAs was logged on and did not realize that the logon was that of a PA, that a junior doctor would order a radiologic test for the patient and it would appear that the PA had violated the rules. Having to continuously explain these issues to the junior doctors rotating through the service became a burden for both the supervising physician and the PAs. Had the hospital trust had a definition of what a PA was and what privileges that should be extended to them, they could have implemented a technological solution to this problem, which would have been to define a set of PA-specific parameters for the electronic health record. All of this confusion about what PAs should or could do, and the confusion on the part of the supervising doctors about how and if the administration of the trust would support (or fail to support) the decisions they made in real time created ambiguity about what the role could or should be.

The lack of administrative structure to facilitate the use of PAs also made the doctors who were supervising them worry that their own performance as managers would be judged unfairly. When no one could tell the supervising doctors what the standards for evaluating PAs should be and there were no forms or procedures to complete to evaluate the PAs, the doctors felt vulnerable. They often improvised to meet the needs of their team for structure, but had no confidence that these improvisations would be supported by the administration. It was hard to achieve clarity for the role of the PA or the role of the PA supervising doctor when both were improvising. In addition, this improvisation meant that no two teams were doing things the same way across the country, further impeding the development of a unified idea of a role for the PA nationally.
Finally, uncertainty about the scope of practice of PAs due to lack of regulation contributed to a substantial lack of clarity about the PA role. Administrators, doctors, nurses, and many other allied health professionals who were to begin working with PAs all wanted to know what the “rules” for PAs were. No one could tell them, other than the medical practice act in the UK allows doctors to delegate tasks to other health professionals as they see fit. As is outlined in the primary data analysis, this complete lack of official role definition led some hospital trusts to allow PAs to do essentially everything a doctor does (except prescribe and order ionizing radiation), while other hospital trusts felt a need to be extremely cautious about tasks delegated to PAs.

Lack of clarity about scope of practice issues substantially colored the view that doctors had about the potential for the PA role over the long term. Without a clear goal for the ultimate scope of practice, doctors had difficulty envisioning what a mature PA role might bring to their service and the NHS as a whole. It was hard for them to want to advocate for the role when they felt that the central issue of “what is a PA and what can a PA do?” remained undefined.

iii. An unclear role for the PA is the primary barrier to successful integration of the PA on a secondary care service in the NHS

While both doctor and PA respondents cited many difficulties in establishing the PA presence on a ward, the core issue is that if team members cannot understand or agree upon the scope of the new role, the role cannot be fully realized. One doctor, who had expressed considerable admiration and appreciation for his PA, explained how lack of a clear role for his PA was a hindrance from the start. They just did not know what to do with their PA. In addition to not having a clear role, there was not good administrative support for the PAs or for the doctors
who were working with the PAs. This doctor expressed that having this difficult start, combined
with the legal limitations placed on the role, has made him uncertain how to develop the role
now. With frustration in his voice, he noted that he thinks that his colleagues would choose a
junior doctor over a PA every time, due to the problems they have had with implementing the
PA role.

Physician F - Where we failed is in preparation for the role. I
think it’s very easy to start somebody in a job, it’s very difficult
to have a purpose and an actual job for the person. I just felt
that there wasn’t the foundation to support PAs in the role and
therefore I think there was a lot of floundering at the beginning
and nobody knew where to place him, he didn’t have a true
purpose so he felt a bit lost. If I’m honest with you the
consultants didn’t understand the role so I think if there was an
option to have a pretty senior junior doctor with you on a ward
round or a PA, you’d pick the junior doctor. And that doesn’t
feel good for someone like [PA] that’s motivated and trained. I
feel for [PA] because of that and it’s hard [for me] to make it
better. Unless [the consultants] understand the role, then
everyone will choose a junior doctor.

C. Facilitators to the Integration of PAs on a Secondary Care Service in the NHS

Study participants described many facilitators to the full use of PAs in their secondary care
services. (See Figure 3). Upon analysis of the data from the interviews, ten facilitators emerged.
These ten facilitators were ultimately grouped into three themes of facilitators, all of which
support the overarching theory that a clear role for the PA on the service is the primary
facilitator for effective integration of the secondary care PA. We will review the ten facilitators
identified and then justify their grouping and the reasons for the emergence of the final theme.
i. Ten facilitators to the integration of UK-trained PAs onto a secondary care service in the NHS

a. The PA has some say in the development of the role

As noted above, PAs were often brought on and essentially used as additional doctors-in-training. They did not have much say in the type of tasks they were assigned or the structure of their work each day. In contrast, some PAs were given the opportunity to be involved in the development of their role. Sometimes the PA was given nearly complete control over what the role would be.

Surg PA 17 - At the end of [the first day] we sat with our consultant and explained to him what our interest in [specialty] would be and the role was tailored to that for us.

One PA was given her own clinic – a rapid access clinic which facilitated quicker evaluation of patients sent in to her specialty by colleagues from general practice or the emergency department. The consultants in this specialty had realized that having a PA with a permanent appointment (as opposed to the junior doctors who would rotate away from the service in three or six months) staff this clinic would enable them to offer a consistent service to patients and doctors. They involved the PA in the development of this clinic.

Med PA 85 - It was fairly shortly after I started [Consultant] started talking about setting up a rapid access clinic. I think he had the PA position in mind as a means to the continuity helping the success of the clinic. I was involved with the meetings in terms of developing the clinic, and then eventually, we really started seeing patients in [month], because it involved some renovations of one of the rooms on the ward.

Another PA reported that after she was hired, she was sent to a service that had never had PAs. However, one of the consultants there had previously worked with PAs at another facility.
That consultant allowed the PA to have input into how she would work with the team. The PA was asked if she had any resistance when she tried to mold the role. She responded:

Med PA 96 - No, and I think that’s partly because the consultant who was in charge of the inpatient team at that time is the one consultant who’d worked with a PA before, at [another hospital]. Yes, she vaguely knew what [PAs were] about and so she had said, “What would you rather do?”

Finally, another PA reported that not only did she have input into how her role developed, but her consultant also encouraged her to push herself in the development of the role on their service. She was asked if she had limits on her role. She replied:

Surg PA 28 - I think I always knew I’d have a really supportive team that would let me do what I wanted to do, because, having met them at interview, and having gone through the application process and having a very encouraging consultant to begin with, I didn’t think I would be limited. I haven’t been limited. Everything I’ve done has been because I want to do it or because my consultant is pushing me to do it.

b. **PAs have a clear understanding of the role and are able to communicate that to others**

The fact that doctors and other health professionals do not have a clear idea of the role is unsurprising in a country that (at the time of this writing) had only approximately 800 PAs nationwide. In the case of many of the PAs in this study, less than 200 PAs were employed in Britain at the time they started their employment. Most of the PAs in this study indicated that they had been educated in PA school about the existing and potential roles for the PA. They had also been taught how to answer the question “what is a PA?” All of the PAs in this study were educated at universities which had at least one PA on the faculty (some programs, particularly programs recently developed, do not have PAs on the faculty), which means that each PA in the
study had at least one PA role model. Several PAs said that it was up to them to communicate the scope of the role to doctors, nurses and other health professionals.

Surg PA 17 - Again, with a lot of education that we’ve had from the physician associate studies at university we sort of knew how to let people know, “We’re not here to do the filing and we’re not here to do the paperwork. We’re here to contribute to the healthcare role.”

Surg PA 28 - I think the doctors, a lot of them didn’t know what to expect. I think I’ve shown them, as time has gone on, a) what I am able to learn and take on, and how I want to... I’ve been very vocal about how I want to progress. I think the doctors are very much in support of that and so again I think they’re happy to teach me and train me, because a) they know I want to do it, but b) I’m capable of doing it. I wouldn’t do anything that’s beyond my capabilities.

c. PA sees opportunity to learn and grow in his or her role

Not only did PAs who reported they had a clear understanding of the role feel like their integration into the service went better, PAs who could see a clear opportunity for growth in their job were more satisfied with their work and were likely to have been in their jobs for several years.

Surg PA 28 - There was never any pressure as to, like, “This is what you have to take care of and this is what you have to do.” I was very much, I think, at the end of my induction period I was just like, “Okay, so I want to look after these patients.” The ones that, from being on ward rounds for the first three weeks, I talked through [with the doctor] “okay, so these are probably the less complex ones, and these are the more complicated ones,” I very much was just like, “Okay, so I’m going to do all the things for these few patients here.”

Every day, or week by week, I just identified more and more and just took on more and more of what I wanted. Then, by the time [doctor] changeover came, it was very evenly split between the SHO and myself. I would take care of one ward; he would take care of another ward.
Another PA noted how much she has progressed in her role and how she got to where she is now (running her own rapid access clinic). She noted a nice progression that helped her learn more about her specialty and feel more confident in her knowledge. She started by shadowing the medical team on the wards, then began to get more involved with the work of the team, then finally her consultant started talking with her about having her own outpatient clinic.

Med PA 85 - Compared to now, I was a lot more dependent on the doctors then. I was only a year out of university, so each morning I would do the rounds with them, kind of being more of a scribe [on the inpatient service] and just a presence rather than seeing patients on my own. I think that reflected my kind of level. I wasn’t seeing any outpatients. I started in [date], and initially we would review the inpatients in the morning, and, in the afternoon you do the jobs, and organizing investigations, and paperwork and things. It was fairly shortly after I started [Consultant] start talking about setting up a rapid access clinic.

Both of the PAs quoted here have been in their jobs for at least three years, indicating at least minimal satisfaction with their employment posts.

d. **PA takes initiative to develop skills that help the team**

PAs did not always wait around for someone else to define the role or to advise them on how to progress. Several PAs reported taking the initiative to seek out new training and to teach themselves in order to be of more use to the team. Doing this requires the PA to acknowledge that they either have not been previously trained in a skill or that they have not preformed that procedure in a while. One PA, in a discussion about how she would advise a newly graduated PA said:
Med PA 42 - If there’s an opportunity to get involved in something you have not been able to do for a long time, like insert a nasogastric tube in a patient who can’t swallow, ask to do that and be shown how to do it. Just be keen and honest.

PAs felt that if they took the initiative, that initiative would be rewarded by increasing scope of practice, trust from their team members and appreciation from supervisors.

Surg PA 17 - For example [Invasive Procedure G], on the PA course we weren’t really trained how to do that. When we got into the role we said, “It’s [Specialty], in a day we could have four [Invasive Procedure G]. For one doctor that’s a lot. If you teach me how to do this, that’s you doing two and that’s me doing two.”

People were even eager to teach us. “Okay, cool. I’ve seen her debride a wound. I’ve seen her suture a wound. I’ve seen her do other things, so clearly they have the capability of learning how to do this.” People were even eager to teach us stuff, so that they could rely on us more.

e. PA becomes skilled enough to teach others

Several doctors and PAs recounted stories of how over time, PAs have become very skilled at their jobs and therefore have begun to teach others, including doctors. The teaching that the PAs do is predominantly informal, one-on-one teaching on the wards. It is less common for the PAs to actually conduct talks or present at departmental meetings, although one PA in this study does conduct ward rounds with small groups of medical students and another PA has presented at the clinical conference in her department. One doctor spoke about how she realized that PAs could help get the new junior doctors up to speed more quickly by pairing them with her experienced PAs for training.

Surgeon A - The other thing I had realized later on, you know - I have since then worked with [the PAs] at a relatively senior level as well - is that they became the trainers of the SHOs. So with the new SHOs
joining in, the department would pair them up with the PAs because they then had a full knowledge of the SHO duties... and that was incredibly useful.

A PA expressed gratitude for having her role expanded to include teaching of medical students. She takes third year medical students on bedside rounds one half-day per week. To her relief and pleasure, none of the medical students had ever expressed an unwillingness to learn from a PA, despite the fact that this PA works at a hospital affiliated with a prestigious medical school.

Med PA 96 – For the last year or so, I have one afternoon per week when I do bedside teaching for the third-year medical students allocated to our department. [Interviewer asks if she ever gets resistance from the medical students because she is a PA]. Not generally. I think because they’re third years and this is their first year in the hospital, they have so little idea of what is going on. I think they’re quite grateful for anyone who is willing to put some time in with them.

The PA who has a very limited scope of practice overall found some opportunity in his job by being able to teach junior doctors. He explains that his several years of experience in performing lumbar punctures gives him credibility with the junior doctors.

Med PA 74 - I’m known as the person who does the lumbar punctures, and I’ve started training the junior doctors when they come round, and they know that I’ve been there for a couple of years, and I’m looked at as somebody more trusted.

One doctor pointed out how a PA who has worked at the hospital for a while can help doctors-in-training to learn how to work most efficiently because PAs know the particulars of the system well.

Physician D - As I said, I think [the PAs] actually do have the role of an SHO, an experienced SHO in terms of I think they have institutional
knowledge. So [my hospital] is a bit - not archaic, but the pathway to getting a task done isn't always clear. It involves knowing this person who sits in that office, who works at these times and I think because [PA] has been there for a long time, they obviously know how to make that happen.

f. **PAs have a champion who is willing and able to provide support and advocacy for the role**

In the literature on the history of the development of the PA profession in the United States, many authors noted the importance of having a PA “champion”. A champion is a person in the organization who has relatively high status and is willing to advocate for the PA. The champion is, in effect lending some of their own credibility to the PA to break down barriers and prejudices that the PA may face.

Almost all of the PAs interviewed for this study talked about their appreciation for their champion, their wish for a champion or their desire for a more effective champion (see above in “barriers”). Effective champions were present, willing and able to provide support for the PA. They demonstrated their interest in the PA and willingness to work with the PA.

Surg PA 17 - After we got the interview we sort of sat with the consultant, he’d shown a lot of interest in the physician associate role. So we knew this was our go-to person if we had issues or if we had problems with people not understanding our role.

Champions advocated for their PA with other staff in the hospital and also challenged the PAs to be the best medical providers they could be. One PA recognized that her champion was working on her behalf even when that consultant seemed like she was being hard on the PAs. In addition to trying to help the PAs be the best they could be, this consultant also vividly lent her credibility to the PAs on the team.
Med PA 53 - And then we had another consultant; she was very harsh on us, but she was a very good advocate for us, as well. She was not mean, she had higher expectations of us. Professionally and knowledge-wise. But I felt she was a very good advocate for us. Like, when she would send the induction emails [to the junior doctors], she would write that, “We have a team of physician associates who are a great asset, who are fabulous, and are a great source of knowledge for you all.”

Consultants particularly felt it was important to model acceptance and advocacy for their PA to the junior doctors.

Physician G - I hope that we modelled that acceptance by the fact that the consultants all treated [PA] with respect, as an important member of the team. I think that's probably quite important because we didn't say, "[PA], go and do this, go and do that, go and make the tea," we valued her as a colleague from day one. We all thought it was a great appointment and she was going to be great and the idea was great. I'm hoping that we modelled that to the junior medical staff because they saw us treating [PA] as a respected, important member of the team, that they would do the same.

PAs very much appreciated the efforts doctors have made to better advocate for the role with other doctors. They could see the difference that having long experience with their champion makes with others on the team.

Med PA 96 - I think, now that we’ve all worked with more of the consultants for quite a period of time, they’re able to introduce us better. I think the fact that they are happy and used to working with us has a bit of a knock-on effect in front of the others.

Some champions felt that people who treated the PA with disrespect were, in effect disrespecting the champion and the team. These champions viewed the PA as an essential team member and wanted to stand up for them, as one doctor humorously reported:

Surgeon B - Other doctors will take umbrage to being given advice by [PA]. A couple of times, our registrars have picked up the phone and
called them back and said, “Excuse me. What she says stands. She’s a respected colleague in this department and you need to listen to that. That’s it, end of story.” Once you’ve done that once or twice, that’s it.

Once in my memory, there was an argument because someone spoke to her quite badly on the phone. It’s kind of like a big brother mentality where we called them back and had a massive go at them. (Laughter) It never happened again, so it was fine – just short of going down there with all the lads, with a couple of baseball bats. It’s a hospital, you can’t really do that, but yes, we’re quite protective of her.

g. Potential for PA to provide continuity on the service makes champions willing to invest in them

In the United Kingdom, junior doctors not only rotate among subspecialties within their fields (ex: Cardiology and Renal for a doctor who will be an Acute Medicine specialist), they also rotate through different hospitals. Rotating like this means that consultants often only work with a particular trainee for one block of time during their training. It also means that trainee doctors do not have much continuity of care with patients. PAs, as permanent members of a ward team can provide continuity of care to patients and institutional memory as the junior doctors move around. Doctors can see the benefit for their own team from time they spend to develop a PA’s knowledge base. The continuity also provides opportunities to develop new services that could not be offered with junior doctor staff because they rotate away. One doctor described how having a PA allowed them to open a rapid access clinic which is staffed primarily by the PA.

Physician G – [We hired PA] because we were short of hands on deck. There is this continuous flow of junior doctors, they come and go, come and go. [The junior doctors] get some experience and some knowledge and then they’re off again and you get a new set. [We hired PA because of] a need for clinical continuity and also out of a sense of strategically looking forward, there were new things we wanted to do. [We wanted to develop] the rapid access clinic
and to be doing new things in new ways that we couldn’t do with the existing staff [of consultants and junior doctors].

A medicine doctor who takes care of numerous diabetic patients on his ward found that the constant churn of junior doctors was a poor fit for patients who stay on the wards for a long time and return to the wards frequently. While the doctors on this medicine service do invest in the training of junior doctors, they find investing in the PA more satisfying because they can teach them in greater detail over the longer term.

Physician H – In addition to our internal medicine practice, we are developing inpatient specialist diabetes [care]. Typically the junior doctors rotate within the blink of an eye. Whereas, diabetes is a long-term condition and [we get] benefits from [medical practitioners] who spend a bit longer. They get a bit more in-depth understanding of [diabetes care]. So we were quite keen to have the physician associate. I imagine that if she didn’t like our particular specialty, she does have some choice of moving. So, by definition, if [PAs] stay, it’s because they have chosen to. The junior doctors can’t really stay, even if they want to.

The same doctor reported that he actually had to work to remember to include the junior doctors in the care of the patients because he and the PA worked so well together and he trusted her judgment so much.

Physician H – [PA] is very experienced now on how to run our team and how to look after the kind of patients [we have]. I have to consciously make sure that I include the [junior doctors] for their teaching and training, because there’s a risk of almost bypassing them if we are not careful.

A doctor reported his surprise at the quality of the PAs’ knowledge, even compared to doctors on the team. He realized that if he picked strong PAs, they could perform at a high level and unlike the doctors, would not rotate away after he invested in them.

Physician C – And then she came to work with us and was superb. She was better than quite a lot of the doctors we had. And so at that stage I realized that if you were judicious in your choice of person you could get people who
were just outstanding, and they would make a very good contribution to the department, and they would stay [unlike the junior doctors who rotate away].

**h. PAs know their limits and put patient safety first**

For physician associates to be useful members of the team, they need to recognize that their training is shorter and less in-depth than that of the doctors. PAs are trained to provide care for common illnesses and to recognize threats to life, limb or sight. The foundational PA education does not provide extensive education regarding more rare diseases. Because the education of the PA is condensed, patient safety rests, in part, on the ability of the PA to recognize what she does not know and to seek help from someone else on the medical team who would have the knowledge to care for the patient. To be safe requires the PA to be honest with herself and to let someone know she needs help, instead of trying to handle the problem herself with insufficient skill. Seeing the PA repeatedly escalate the right patients to the senior doctors makes the doctors trust them more.

Physician G – I think as a senior, what you’re always looking for is for [junior staff members] to be sufficiently worried, but not too worried. I think one of the things that she was good at was not stretching herself beyond her capabilities or competencies. That inspires trust. Of course, someone could be incompetent and still do that, but the fact that she would come with appropriate questions and appropriate issues, you think “Yes, that’s a tricky one. You’re right to talk to me about that. I don’t know what to do either”. [PA] has clinical common sense. It is not the same as ordinary common sense, the ability to spot pathology that might get worse even though the patient might look quite well. I think [PA] inspired us because she showed that skill and that quality. She didn’t try to take too much on. She would confer when she needed to.

One PA discussed how she built up the trust the doctors had in her ability to care for patients safely by having a low threshold for consulting the doctors early in her time in the job.
Med PA 85 – I am not sure if it’s my personality, but I am quite cautious. In running things by [the doctors] and being extra specially safe and wary about any patient I am not at all happy with. I’ll have a lower threshold than maybe a junior doctor would have to involve a senior. I think over time people acknowledge that and then recognize you’ve got a pretty good clinical safety record. Being ultra-cautious from the beginning of your career results in [the doctors] trusting. That’s eventually rewarded by, if you do have a worry about patients and you flag up your concerns, then they will absolutely take it seriously. [My PA program] banged [patient safety] into us for the whole course. It is so important as a PA to know your scope and know your limits.

A doctor reported that his PAs appropriately sought help on a regular basis and that he was confident that they would seek help appropriately to ensure the safety of patients.

Physician D- [The PAs] say “This is what I think. This is what I am not sure about” which is what we expect. I don’t think there’s been that many true problems... my feeling is that they would escalate appropriately to [the senior doctors].

One PA believes that her team came to trust her when she was in the position of working with a rotating doctor she felt was unsafe. Although it was very hard for her to consider reporting this doctor up the chain, she did it to protect the patients.

Surg PA 28 – It all comes down to one event. There was one SHO who was here for a couple of weeks and she really struggled. She was writing up drugs all over the place and I was the one saying “No, this is wrong”. That’s when it hit home for them that “[PA] knows what she is doing and she is safe”

i. **Positive personal characteristics help the team accept the PA**

Several doctors discussed how they admired the PAs for the way they had handled being the first person in a new profession on their service. Doctors mentioned positive personal characteristics such as being humble, hard-working, eager to learn, friendly and having strong
communication as being essential to winning over a potentially skeptical team of doctors, nurses, and other health professionals.

Physician G – She’s unassuming yet very capable. She doesn’t put anyone’s backs up. She just gets on with stuff... She’s made a big impact on the team, on how well people get [along] together. I think she contributes more there than we’d anticipated.

Another doctor felt that strong communication skills with the consultants and registrars as well as good analytic skills were key to the success of the PAs on his team.

Physician D – These are maybe soft skills, but [the PAs have good] communication. They come out and say “I understand why we did this. I don’t understand why we did that”. So it shows you “Okay – they are thinking about what’s happening rather than just filling in forms or requesting imaging, etc.”

One doctor, whose hospital had constrained the role of the PA substantially due to uncertainty about the legal status of the PA commented on the way the PA works with the team despite restrictions.

Surgeon E – I tell you as a person, he is one of the best I have seen. I think because of [the PA] role and the limitations, there were some issues generated [at the beginning]. The junior doctors think that the [PA] is not qualified to look after sick patients. As a person [PA] is very keen to learn even though he has got [legal limitations], but his knowledge is very good. He has all the basic principles and good work ethic. He’s a really good team player. He’s helpful. I think he’s loved by everyone now.

Another doctor appreciates his PA’s organizational skills.

Physician H – [PA] is clearly highly competent and she’s enormously organized. I mean, she’s the most organized person on the team including myself. She gets pretty frustrated if we interfere with her organizational skills.

A doctor commented on the general quality of the PAs on his team and how the personal characteristics they brought with them would have made them successful in any endeavor they chose.
Physician C – It is just the nature of [these PAs]. These are high flyers, so if they had [gone to medical school], they would have been high flyers in medicine. If they went into business, they would have been high flyers in business. They were just good quality people. They were good at working in a team and they would pick up stuff quickly. They worked hard, so there wasn’t really anything not to like. And they didn’t do stuff that other people felt was their job, so they wouldn’t go around telling the physiotherapists how to do physiotherapy and they wouldn’t go around telling the doctors how to do medicine, they just blended in with them.

One PA effectively summarized a number of these characteristics in response to a question about how he would advise a newly graduated PA to behave.

Med PA 74 - Be keen and enthusiastic. Be humble in your role, and ask questions, show that you’re interested on the ward rounds. Go to one of your seniors if you have any problems, or issues, or any questions, and gain that trust from them. Be keen on doing procedures. Be keen on having difficult conversations with patients, and patients’ relatives. Be confident, but not over-confident. Confident enough to go and do something, but not overly confident to then not go and discuss it with someone.

j. A trusting relationship between PAs and doctors enables them to work together effectively

PAs are trained to practice medicine and expect to practice medicine when they join the secondary care medical team. However, because the role is so new, people in other professions may not agree that PAs should be allowed to practice medicine, with all the potential attendant risks to the patient, medical team or hospital. Developing and gaining the trust of other professionals in the hospital is a key facilitator toward allowing PAs to work at their full capacity. Trust needs to be built over time. Doctors need to be certain that the PAs know what they are doing and that they will not endanger the patient. They need to know the PA will tell them the truth. They also need to see that the PAs are committed to the team and committed to learning.
PAs need to be sure that they will be trained properly and that doctors will respond to help them if needed. They also need to be certain that they are being told the truth by the doctors on their team. One PA’s observation encapsulates both sides of the trust relationship well.

\[\text{Surg PA 17 – [You get trust from your doctor by] showing that you’re responsible, you’re professional and you’re good at what you do. You own up to your mistakes because at some point we all make mistakes. Showing that you’re eager to learn. I think in our department we’re praised all the time. I actually feel blessed because I feel appreciated. Even the consultants, they mention it all the time, “Our excellent PAs.” I think again, it’s just showing that you’re committed. We’ve been there [several] years now, so that shows a little bit of commitment on our side.}\]

Another PA felt that the trust grew over time in part, because of simple exposure to him and to the role. He also prioritized communicating clearly with the team to help them understand what he could do and clarify any issues that arose.

\[\text{Med PA 74 - [To help them trust me more], I do a few things. First, I am on the ward rounds. [Also], clear documentation. They can obviously see me documenting well. If there are any questions, I’ll ask right there and then, just to make sure everything’s clear and documented correctly. If there are any questions that I have later on, I’ll go straight to them and give them an SBAR presentation. You know, recognized ways of presenting patients, and just being professional about it, and asking for advice. I think just working [alongside] them, and being forthcoming with any issues is what has [created trust].}\]

One doctor reflected on her trust in the PAs with whom she works and the factors that have led her to trust her PAs:

\[\text{Surgeon A – Let’s say I am at home and I want to know something about the patient. Nine times out of ten, I would call one of [the PAs] rather than call the SHOs. Perhaps, partially because the SHOs rotate and are new to the job, but also partly because I know that if I ask [the PAs] it will be done and I do not have to check whether it has been done and documented. I know for a fact... The personal relationship that you have them that is part of this trust; not only their}\]
competence, but just that you know their character. They are going to tell you the truth.

Another PA realized that one of the ways she had begun to demonstrate to the consultants that her medical knowledge was solid was to use the teaching time with the consultant not only to learn, but also to demonstrate her knowledge and her ability to acquire knowledge on her own. Showing them that she knew the answers to their questions at the junior doctor teaching time helped them begin to trust her.

Med PA 42 - When we were encouraged to go to the junior doctor teaching, that was really nice because that meant that we had a chance to sit down with the consultant and talk to her, and show our knowledge, as it were. So, we’d be told next week our teaching is going to be on [disease], so that meant that you had a chance to go away and have a read about [disease], and then be like, “Oh, I think the answer to that is this.” It actually represents an opportunity for the PAs to show their knowledge, as well. Which is part of that building trust, isn’t it? They’re then more willing to give you responsibility because you’ve been given the opportunity to display that [knowledge] in a safe environment.

ii. Three classes of facilitators to the integration of PAs onto a secondary care service

After identifying ten facilitators which arose from the interviews of study participants, these facilitators were grouped into three themes.

a. PA involvement in role and skill development facilitates the smooth integration of PAs into secondary care

Five codes comprised this theme: PAs had some say in the role development, PA has a clear understanding of own role (often from PA education), PA sees opportunity to learn and grow in their role, PA takes initiative to develop skills to help with the clinical workload, and PAs become skilled enough to teach others.
Some newly-hired PAs were given explicit opportunities to define the role within their new job. In some cases, doctors asked PAs to be involved in the development of the scope of practice for the PA role because the doctor did not know what the role should be and believed that the PA would know best. In other cases, the doctors saw the newness of the role and the lack of definition of the role as an opportunity for the PA to define the role in a way that would make him or her satisfied as an employee. Other doctors thought that they would allow the PA to try out various options for the role and that together the PA and doctor could assess what was most effective. Regardless of the motivation on the part of the doctor for giving the PA input into the development of the role, teams that gave PAs this input saw benefits. PAs who had input felt that their doctors respected them. They expressed satisfaction with the relationship with their doctors. They saw hope for a future role on the team. Two PAs, who had considerable input into the development of their roles, reported that they had considered leaving their jobs but were concerned that they would not get a similar level of respect and input at a new job, and therefore were planning to stay in their current positions. They both also reported feeling that if they left, they would regret treating those who had treated them well badly. Because turnover of medical providers is disruptive and expensive, the clinical services on which they work have benefited administratively and financially from their decision to engage the PAs in the development of their own role on the team.

When PAs were presented with the opportunity to join a clinical team, the transition was better when they had a clear understanding of their own role and took the opportunity to educate others on that role. Several PAs noted that they were given clear expectations during their PA education about the PA role and that they took these expectations into their jobs. The PAs were taught about their role in the didactic portion of their training, but also had enacted the PA role to a certain extent as students on clinical placements. In many cases, they had been
treated like medical students when they were PA students, and therefore had been given opportunities to perform a doctor-like tasks. Some PAs were allowed to fulfill the role as they had been taught and those that were able to fulfill the role expressed more satisfaction with their job posts than those who were not allowed to fulfill the role they expected to have. Some PAs reported having to not only define what the PA role was, but also what it was not. For example, several PAs reported having to tell their medical teams that they did not only do paperwork or administration, but instead expected to see patients and be involved in medical decision-making. One PA explained that the registrars and consultants helped her communicate her role to the SHOs starting on the service.

Surgical PA 28 – It’s very much “This is [PA name]. This is our PA. Do not pile on the crap. She is here to do X, Y and Z [for our team]. She is not here to run around and clean up your mess or do the jobs you don’t want to do.”

Nearly all of the PAs reported that it fell on them to explain their role to trainees, patients, nurses and other health care staff. They noted with gratitude that their universities had explicitly prepared them to explain the role to others. Many PAs found themselves explaining the role to others on a daily basis, at least at the beginning of their time on the service. Even those who had worked in the same clinical position for three or four years noted that they still are in the process of explaining their role because of high rates of turnover among nurses, allied health staff and doctors-in-training. One PA noted that improving her own ability to explain her role to others had reaped dividends for her in the responses she got from new staff members. PAs not only desired a clear sense of their role on the team at the time they started, but those who saw opportunities for growth in their role and a willingness of the team to let the PA have input into how the role would grow felt that their integration into the team went well. PAs who believed their team supported their development and gave them opportunities to grow felt
respected by their teams. Many doctors and PAs expressed their views that PAs could and
should be developed because they are medical professionals. To them, it was only logical that
PAs should have opportunities to learn and grow in their role, just like they expected doctors to
continuously learn and grow. Several PAs and doctors also put the expectation for growth in the
context of the growth and development of the PA profession. They expected that the role of
the PA would not look the same in the future as it does now. They anticipated that once PAs
have been working in the NHS for 10 or 20 years, the role would look different and would likely
include a higher level of responsibility for patient care. Teams that had a development mindset
for the PA role were also likely to express satisfaction with the way the PA had been integrated
into the team. One PA reported that her team was so keen to give her development
opportunities that they had recently given her a promotion which included some surprising
responsibilities.

Med PA 31 – I have been upgraded recently and am doing more
managerial tasks which involve the rota. I actually help manage the
doctor and PA rota up to the registrar-level with one consultant. I have
been given a more senior role. I will be involved maybe with appraisals
or at least providing support to the PAs.

PAs reported that taking the initiative to develop their own skills to meet the needs of the
clinical workload facilitated their integration into the team. They noted that doctors
appreciated their enthusiasm to learn and their willingness to spend extra time and effort to
improve their skills. Many doctors reported that the current demands of patient care in terms
of volume are overwhelming. They were initially grateful for any extra help, even if the PAs
were not fully trained in their particular specialty yet. Some doctors reported that initial
concerns about having PAs on the team were allayed when the PAs demonstrated that they
could learn a new skill and be trusted to perform it competently. Doctors were impressed with
the PAs’ abilities to perform clinical tasks, but also their judgement in knowing when the clinical scenario was beyond the training and experience of the PA. Surgeon B said it best:

Surgeon B – [PA], when she started, was fresh out of PA school. She was finding her feet, but she’s got great qualities and characteristics that meant she found her way very quickly. She’s quite confident when she knows her stuff. She is extremely efficient and organized. She has insight into what she can and can’t do. She’s happy to ask for help.

Taking the initiative to learn new skills is an affirmation by the PA that they believe the role can be further developed and can be useful to the team. By attempting to provide more services, the PA is enacting what she thinks the role can be and demonstrating that belief to others on the medical team. As the team begins to rely on the PA for these services, the PA becomes a more fully accepted member of the team.

Both PAs and doctors reported that PAs had become teachers of doctors and medical students as the PA’s skills and knowledge had increased. The knowledge PAs had of their clinical specialties and their particular hospital trusts, combined with the fact that they do not rotate away from their primary clinical service, made them well placed to help teach doctors and students new to the service. None of the PAs or doctors interviewed reported any serious or sustained objections from the doctors or medical students to being taught by a PA. The doctors and medical students recognized that the specialty experience of the PAs, particularly when the PA had been a member of that specialty service for a long time meant the PAs had something valuable to offer them.

Surg PA 17 – As soon as [SHOs] know “You have been here for five years, you definitely know what you are doing, I’m happy to follow you around and learn from you”. We haven’t had any difficulties.

b. An effective champion helps define and develop the PA role
Two codes comprised this theme: the PA has a champion who is willing and able to provide support for the role and the potential for the PA to provide continuity for the team makes champions willing to invest in them. Some champions have prior knowledge of the role, either from working at a place where PAs have already been used in the UK or from exposure to PAs in the US. Others have read about PAs in the scientific literature. Another group sees the PA at work and becomes convinced. Motivations for becoming a champion vary between champions, but one of the most common reasons doctors cited for becoming champions for the PA role was the continuity of care that the PA role can offer medical teams and patients.

An effective champion made a substantial difference to the use and development of the PA role according to the PAs and doctors in this study. Champions pushed the PAs to improve their knowledge and skills. They brought down administrative barriers that had limited the work PAs could do. Most importantly, champions lent their own credibility to the PA by advocating for the role with other doctors. By advocating for the role, the champions accelerated the acceptance of the PAs by doctors who either did not know much about PAs or who had unfavorable opinions of the role. The perspective of the champion about what the role of the PA should be often ended up dictating what the role would become at that particular hospital. Having a champion who the PA knew would protect him or her also allowed the PAs to take risks to expand their role. They did not fear for their job security if they tried to expand their role within the team. They knew that the champions supported their efforts to do more for the medical team.

A particular driver for some champions to become champions was the continuity that a PA could provide the clinical service. The current approach to training doctors in the UK minimizes continuity with consultants and patients for these junior doctors. Appointing a PA who is a permanent member of the specialty team provides stability in the day-to-day operations of the
ward. It also has the potential to provide continuity of clinical care for patients with chronic diseases. While the junior doctors come and go, the PA can be the one who remembers the details of a patient’s prior needs and care. Having another person on the team who does not rotate away is a particular benefit to overstretched consultants. Several of these consultants could see the benefits to both patient care and efficient running of the team. These benefits made these doctors enthusiastic champions for the role. They wanted to share their good fortune with colleagues on other teams. They were also motivated to advocate for the PA with other doctors to increase the usefulness of their own PA. If the doctors could convince others in their hospital that the PA was qualified to provide consultations or advice to other teams, it lessened the burden on the consultant as well.

*c. Principled behavior allows the PA role to develop safely and effectively*

Three codes comprised this theme: PA knows limits and puts patient safety first, PAs have positive personal characteristics that facilitate their integration, and PAs and doctors form relationships of trust. Patient safety has been a key concern expressed by doctors, policymakers and patients over the entire history of the PA profession. How can someone with only two years of formal medical training provide the same quality of care rendered by a doctor with seven to fifteen years of medical education? Will the shorter training period mean that PAs will miss threats to life, limb or sight? The doctors who first developed the PA profession in the United States addressed this concern by including explicit education about knowing the limits of their knowledge and putting patient safety first into the PA curriculum. As the profession has moved from the US to the UK, the emphasis on teaching PA students “to know what they know, what they think they know and what they know they don’t know” has been retained. The willingness
of PAs in this study to explicitly acknowledge that there are things they don’t know and put the patient’s well-being ahead of the potential embarrassment of expressing uncertainty in the clinical situation have facilitated their inclusion on the medical team. As doctors see the PAs consistently seek advice in caring for patients, their confidence in both the individual PA and the PA role grows. They can see how the role can function to care for patients safely despite a shorter medical training period.

In addition to the training that PAs receive to put patient safety first, many doctors eagerly volunteered stories about the personal characteristics of the individual PA with whom they worked as a facilitator to their integration on the team. Many reported that the PAs were hard-working, eager to learn, humble, smart and friendly and that these characteristics has smoothed the transition to having a PA on the team. While the specific characteristics mentioned differed from PA to PA, in each case, it is clear that the doctor had thought about how things might have gone if the newly hired PA had not had these positive personal characteristics. Doctors wondered if these characteristics were unique to their PA, or whether PA training programs had selected for these characteristics. They wondered if PA programs had emphasized the importance of demonstrating these characteristics during the PA’s education. Doctors believed that if PAs continue to demonstrate these principled behaviors, that the future of the PA role in the NHS would be bright.

Finally, the PA profession is built on the idea that two people with different levels of medical training can work together to provide quality medical care to more patients than the doctor could see on her own. For this concept to work, there has to be substantial trust on both sides of the doctor-PA relationship. They need to trust that their partner is telling them the truth. The doctor needs to know that the PA will ask for help if the PA does not know what to do with the patient. The PA needs to know that the doctor is competent in their medical field and that
the doctor will not penalize the PA if the PA does raise a question about the care of the patient. This relationship is not static. Many PAs and doctors discussed how this trust between them had started, usually cautiously, and had grown over time. As PAs demonstrated their baseline medical knowledge, worked to improve their medical knowledge and as they demonstrated that they would prioritize patient safety, the doctors began to trust them more. This trust relationship between the PA and the doctor also allowed for both to see how the PA role could potentially grow over time. As doctors gained more confidence in the skills of the PAs, doctors began looking at their practice to identify other ways the PA role might be expanded to help the team. Crucially, no one felt that the distinctions between the PA role and the doctor role should be eliminated or even diminished. All felt that the union of the two roles provided the best results for patients and for the NHS.

iii. A clear role for the PA is the primary facilitator of successful integration of the PA on to a secondary care service in the NHS.

When evaluating the three facilitator themes, they all point to a clear role for the PA as the primary facilitator. When the role is clearly defined and is appropriate to the PA’s level of education and experience, the implementation goes well and the doctors and PAs are both happy. One doctor pointed out that from the beginning, the leadership of their clinical service had understood that the PA was not just a junior doctor substitute. At the time of hire, they already had some specific ideas about what a PA might do that was different from what the junior doctors do.

Physician G – As I recall [at the beginning] it went very smoothly. [PA] fitted into the role from day one. I think we tried to make it clear that she wasn’t just another junior doctor. I think there was always this notion that she was there to help [the team]. That was one of the reasons for creating [her own] clinic because we thought that she ought
to have her own niche. It was something that was her own and she was the lead on. She wasn’t just another pair of hands to run around after everyone else.

D. Conclusion

Participants in this study have identified nine types of barriers and ten types of facilitators to the integration of a UK-trained PA onto a secondary care service in the NHS. Axial coding of these barriers and facilitators found six total themes (three facilitators and three barriers). Theoretical coding revealed that clarity of the role is the key differentiator. When the PAs have a clear role, integration of the PAs goes more smoothly. When the role of the PA is unclear it presents a profound barrier to optimal integration of the PA. In the next chapter, we will apply the sensemaking lens to the data collected via grounded theory study design described here in chapter four.
**V. CHAPTER 5 - DISCUSSION**

**A. Introduction**

The purpose of this study is to explore and describe the barriers and facilitators to the integration of the first UK-trained PAs on a secondary care service in the British National Health Service. Because the profession is so new and so little research has been published regarding PAs in secondary care in the United Kingdom, a grounded theory qualitative study was conducted. This study was designed to capture a wide range of experiences of PAs and doctors with bringing the first PA onto a clinical service in the NHS. We developed broad questions that allowed the research participants to reflect on the barriers they encountered and the facilitators that smoothed their path. The study also allowed these participants to share their explanations for how the PAs had integrated onto the service and how things might be different had circumstances been different. Participants were also invited to share the meanings they had made around the experiences they had. The current study lays a foundation for future research by developing themes that can be explored in larger populations of PAs and doctors through surveys and other quantitative means. This chapter presents a summary of the findings of this study; provides interpretation of these findings; situates these findings in the context of the existing scientific literature and the conceptual framework of sensemaking; and discusses the implications of these findings for hospital trusts, doctors, PAs and the NHS overall. In addition, the limitations of the study and opportunities for future research work based on the findings of this study are presented.

**B. Summary of Findings**
1. This study investigated both barriers and facilitators to bringing the first PA onto a secondary care service. The principal finding from each of these two pathways is that a clear role for the PA is the ultimate facilitator and an unclear role for the PA is the ultimate barrier to the integration of the PA onto a secondary care clinical service. Despite the fact that these themes came from two different strands of analysis, these are essential the same finding.

2. To maximize the usefulness of PAs to the clinical team, PAs need to have a medical role that is at least partially distinct from that of the doctors-in-training on the team. Doctors and hospital trusts need to have a plan for the professional development of PAs that is specific to PAs. PAs also need to be able to clearly communicate the distinctive characteristics of their role to doctors, other health professionals, administrators, patients, and patients’ families. The PA role needs to be defined appropriately to the PA’s education and experience for the PA to be of most use to the team.

3. For the PA role to be as useful as possible, PAs need to have input into the development of their role. Having a clear sense of the PA role and the limits of their medical training allows them to develop their role while still protecting patient safety. PAs also need to take the initiative to develop their own skills and to teach others.

4. A willing, effective champion for PAs helps provide definition to the PA role and development for the PA role within the clinical service and the hospital trust. An effective champion also provides substantial credibility to the PA and the PA role with others on the healthcare team.
5. Lack of legal recognition and regulation creates uncertainty for the PA role that inhibits development of the PA role at the local and national levels.

6. Principled behavior on the part of both PAs and doctors is central to the success of introducing a PA to the team. When PAs and doctors are honest with each other and when PAs recognize the limits of their knowledge, trust grows between the PAs and their doctor colleagues. When all team members are hard-working, respectful, seeking to continue to grow in their medical knowledge and always put patients’ needs first, the PA-doctor team can practice safely and effectively.

C. Discussion

Nineteen different concepts emerged from the interviews conducted. Nine barriers to and ten facilitators of the integration of PAs onto a secondary care service in the NHS were identified. These concepts were grouped into six themes via the process of axial coding. I will discuss the findings of this study by addressing each of the axial codes and the overall theoretical code.

i. Lack of understanding of what the PA role is or could be is a barrier to integrating PAs

Study participants explained that a number of barriers contributed to the lack of understanding of the PA role. For example, PAs who are hired by someone other than the person with whom they will work on a day-to-day basis often find that the doctors with whom they work either did not wish to have a PA or were completely naïve to how PAs were trained and what they could bring to the team. As hospital trusts bring on more PAs, it is likely that newly graduated PAs will find themselves in this situation. Administrators are looking for novel
solutions to the current NHS workforce crisis, and PAs have been cited as part of the potential solution, which may initially make this problem more common. However, over the next five years, as thousands of PAs enter hospitals, it is likely that fewer doctors will have no experience with or opinion about PAs. It is still possible that PAs will be hired to work with doctors who actively oppose the implementation of the PA role and those PAs will have to negotiate difficult situations. Hospital trusts should engage doctors who direct clinical services and understand the needs and wants of those doctors prior to hiring PAs. Shared decision-making is much more likely to produce effective PA-doctor teams than is simple imposition of a PA on the medical or surgical team.

The finding that some services were essentially imposing PAs on teams of doctors who did not expect them is consistent with the findings of both the English and Scottish pilot projects from the mid-2000s. In nearly all of the cases within the pilot projects, and in nearly all the cases in this study, when the PA was brought on by someone outside the core medical team, everyone expressed frustration. The PAs felt that they had to defend their “right” to work in that setting and had to prove themselves to gain acceptance. The doctors felt frustrated that they were not consulted in the decision to bring on a new team member who had the potential to substantially disrupt the way the team had worked for a long time. Participants in this study who had encountered this problem all felt that over time the PAs had proven themselves useful to the extent that they were allowed to enact the PA role. This finding was also consonant with the experiences of the US PAs in both the English and Scottish pilot programs. The PAs were able to win over the doctors who initially had been skeptical about the role and convert them from skeptics to believers. A recent study by Roberts, et. al. found just this result. The majority of junior doctors who had worked with PAs in the NHS believed the PA role was useful for the NHS after having worked directly with a PA.
Several doctors reported that the heavy clinical workload prevented them from investing in their PAs. This observation potentially betrays a lack of understanding of the current and potential role of the PA. While the decision not to invest in the PA may make sense in the moment when the clinical workload is heavy, a better concept of what the PAs might be able to contribute to the expertise and the workload of the team over the long term may motivate doctors to make the time to invest. The current situation in which the role of the PA is not fixed within the health service may make it difficult for the consultants to sufficiently envision a mature role for the PA. It is challenging to try to train a person for a role that is uncertain. Therefore, doctors may not be willing or able to make an investment in PA role development when there is urgent clinical business at hand.

None of the previous research reviewed for this study has found that doctors are inhibited by their clinical workload from investing in PAs. While it may be that investigators have never asked the questions that would unearth this result, it is also possible that the NHS is busier and more stretched now than it has been in years past. Quarterly evaluations by The King’s Fund, a British healthcare think-tank, demonstrate that need for hospital services in the UK is increasing by 5-6% each year even as the NHS has been closing emergency departments and decreasing the number of available hospital beds. In addition, government funding for social care services (home care, nursing home services, hospice, etc.) has been slashed in the last six years, resulting in many patients who are well enough to be discharged from the hospital, but who lack a place to go that can meet their care needs.

Many of the PA participants in this study reported that a large part of their clinical workload involved doing the “jobs list” – the clinical tasks required to further investigate or treat a patient. While all hospital PAs, regardless of specialty, expected and wanted to be part of doing the clinical jobs, those who were restricted to only performing clinical jobs were frustrated. PAs
believed they had been trained to assess patients and participate in decisions about the care of the patient based on review of the patient’s data. Simply performing tasks such as venipuncture or phoning another clinical service to ask for a consultation did not satisfy their expectation to be meaningfully involved in patient care. Even when the jobs the PAs were allowed to perform were more invasive and complex, such as lumbar punctures, the PAs soon tired of being viewed as the lumbar puncture experts and not full-fledged members of the clinical team. Only doing jobs did not allow them to demonstrate their knowledge and grow in their knowledge in the same way that assessing patients, developing evaluation strategies, and executing treatment plans would. Clinical expertise is developed by clinical practice. PAs know this firsthand from their PA education. PAs who are allowed to assess patients and recommend diagnostic and treatment plans are not only able to grow in their medical knowledge and skill, they are also able to demonstrate their growth in these areas to the registrars and consultants. Presenting their work to the team (in the form of oral presentations and written patients’ notes) can allow them to demonstrate their growth as clinicians to the team in a way that may stimulate the senior leadership of the team to consider PAs worth further investment. Restricting PAs to the jobs list limits how PAs can enact the PA role and stimulate others to view the role as they do. These limits also block potential opportunities PAs might have for further education or development. Why would a service spend money sending a PA to a specialty medical conference to further their clinical knowledge if the service views PAs as people who can only perform procedures? Restricting PAs to jobs and procedures may also decrease the likelihood that the PA will choose to stay working for that particular clinical service. Some of the PAs in this study whose work consisted primarily of doing the jobs list reflected that they did not expect to stay in their current post for many years. High turnover of PAs is also likely to limit the further development of the PA role in that setting.
While the general issue of scope of practice for PAs has been raised in previous studies of PAs in the UK, the finding that some PAs are limited by their superiors to performing “jobs” is new. Few of the previous studies have been performed in secondary care, and those have mainly evaluated the role of PAs in emergency medicine, not in the care of patients on hospital wards. The pilot program evaluations from England and Scotland did capture a few PAs in secondary care, however, the PAs in these studies were extremely experienced PAs from the United States. It is possible that those PAs were not restricted to simply doing the jobs list either because the consultants respected their substantial experience, or because the US PAs would not permit such limits on their roles. In contrast, the PAs in this study were all UK-trained PAs, most of whom were in their first position as a PA. It is likely that as new graduates, they did not feel sufficiently experienced or empowered to assert their understanding of the PA role.

Nearly every PA and doctor in this study reported that the general lack of knowledge about the PA role was a barrier to integrating the PA onto the team. Given the youth of the profession, this finding is unsurprising. PAs reported having to explain their role continuously due to the turnover of doctors, nurses and allied health staff within the hospital trusts. They found themselves wishing for a public information campaign that would inform both health professionals and patients about their presence in the NHS and their role on the team. PAs and doctors both reported having to explain what a PA was and what a PA was not. PAs specifically had to assert their membership in the medical team, as opposed to nursing or other allied health teams. PAs tried to define the role as a medical role through a wide variety of actions. They verbally identified themselves as members of their specific specialty teams. They reviewed labs and presented differential diagnoses to their teammates to demonstrate their clinical knowledge and their fitness to practice medicine. They dressed like doctors (where permitted) and ate lunch with the medical team. One PA even became the self-appointed “social director”
for her specialty service and arranged social hours at the pub for all the members of her medical team.

A particular frustration for the PAs in this study was that even when they believed they had established themselves as members of the medical team, others sometimes tried to revoke that status. Several study participants reported that they had been allowed to perform certain medical duties for a time, only to have their right to perform these duties change when something changed at their hospital trust. In some cases, these changes came about because of new administrative personnel. In other cases, the leadership of the trust had not realized that PAs were performing certain tasks, and when they found out, decided to ban the PAs from engaging in these tasks. Some doctors and administrators believed that the lack of regulation surrounding PAs meant that they could do nothing, whereas others believed that lack of regulation meant the PAs could do anything a doctor authorized them to do. PAs were sometimes caught between leaders whose views were at different ends of this spectrum.

PAs had to regularly explain their education and training as a pre-condition to understanding what the PA role could be. PAs struggled to connect their training with the training of other health professionals. The PAs had to explain to colleagues that they had a bachelor’s degree in a life science field and then undertook formal, structured post-graduate education for a medical role. Most UK health professionals are trained at the bachelor’s level. Medicine, physical therapy and dentistry students, for example, are bachelor’s degree students in the United Kingdom. Unlike in the United States, where nurse practitioners (NP) receive formal training at the post-graduate level, nurse practitioners in the United Kingdom do not necessarily receive any formal training for their roles. The training programs that do exist for nurses to become nurse practitioners are heterogeneous because there are no national standards for NP training and no national board examination at the completion of training. Thus, the idea that PAs had
a first degree and undertook PA training as a second, post-graduate degree was new and unusual to people on the team. PAs reported that even after explaining their educational background, some doctors had difficulty accepting the idea that the essentials of medical knowledge could be taught in only three semesters of didactic education and three semesters of clinical experience.

The lack of understanding of the PA role by other health professionals was well established in the literature by both pilot project evaluations and other studies.\textsuperscript{2,3,26,31} It is entirely unsurprising that people do not understand a new role in their health service. As in these studies, the current study demonstrates that being “the first of one’s kind” can be a lonely experience. The PAs are necessarily required to explain their role and training regularly. Several PAs commented that they enjoyed the annual Faculty of Physician Associates’ continuing professional development conference because they do not have to explain themselves to others there. Over time, it will be interesting to follow the research on PAs in this regard. We would expect that this problem should diminish over time as the number of PAs grows and their presence on the wards is more common.

ii. No champion for PAs or champion is of limited effectiveness makes it difficult for PAs to establish a role on the team

When PAs arrive on the clinical service as members of a completely new health profession, having a person who advocates for them and introduces the role to others can smooth the transition. In this study, PAs repeatedly reported that not having an effective champion limited the way they could enact their role. Not having an effective champion meant that the PAs were left to deal with challenges and threats to their role on their own. They did not have the benefit of having someone with more experience and connections in the hospital trust to break down
the barriers they encountered to full embodiment of the PA role. It is likely that PAs without an effective champion feel less free to take risks. Without a champion, they have no one to defend them if things do not go well. It is difficult for PAs to stretch themselves and try to develop the role without a defender.

For the development of the PA role across the country, lack of champions at the hospital trust level is a problem as well. Champions not only serve as a support to individual PAs, they often are the “face” of the PA profession to other doctors and to higher-level health administrators. Working on a regular basis with PAs provides them the credibility to speak about the strengths and weaknesses of the role from a doctor perspective. Doctors respect doctors, due to their shared training and position within the health system. Champions who want to be effective champions, but are limited by their workload, also cannot be the people who take time to go to conferences or meetings to speak on behalf of the PA profession. Lack of effective champions at the local level means there are fewer champions to advocate within specialties and within the NHS at the national level.

The pilot project evaluations from both England and Scotland did report that lack of effective local champions was a barrier to bringing PAs onto the medical team. None of the other original research conducted on the PA experience in the United Kingdom included specific questions on the role of champions. However, the social science literature is replete with studies about the importance of champions to the success of implementing new ideas within health systems. Performing more robust studies on the presence or absence of champions or what makes a PA champion effective would be useful to PAs, doctors and hospital trusts as PAs are more widely implemented across the country.
Regulatory issues contribute to lack of role clarity for PAs

All participants in this study discussed how regulatory issues substantially impeded the ability of PAs to work at the level at which they were trained. Inability to prescribe and request radiographic investigations were among the most vexing problems on a day-to-day basis. Medical care is based on using medications to heal patients. In practice, these restrictions meant that it was difficult for doctors to entrust the care of patients on the ward to PAs while they were elsewhere. If something went wrong and the patients required medications urgently, the PAs would not have the authority to prescribe the needed medicines for the patient. This limitation meant that PAs could only increase the level of responsibility they had for patients to a certain point.

Legal restrictions on prescribing or ordering radiographic tests made it more difficult for PAs to claim membership on the medical team. While they could explain to others on the team that they had been trained to prescribe, and trained to request and interpret radiologic tests, no one could see them actually perform these tasks. In theory, PAs could be asked by their teams to recommend medications or radiologic investigations despite not being able to order these themselves. In some cases, this dialogue within the team is precisely what took place. However, some study participants reported that PAs were not given this opportunity for input because doing this was considered time-consuming and of no benefit to the team or patients. Not being able to carry out these essential medical roles – investigating and intervening with medication – conflicted with the assertion of PAs that they were medical practitioners. The inability to fulfill the complete medical role has made it difficult, and will continue to make it difficult, for PAs to expand the role within the NHS. It is potentially difficult to convince resource-limited health administrators to hire a type of medical professional who cannot perform all the tasks a medical professional is expected to be able to do.
Inability to prescribe and order radiologic investigations also limits the potential expansion of the role into rural and remote areas of the United Kingdom. If PAs cannot perform these essential medical tasks, they cannot practice with remote supervision by a doctor. In the United States, PAs often serve in small hospitals and clinics in rural areas that do not have sufficient population to support a doctor. They are supervised by telephone by a doctor in a larger town. Their ability to do so is based on a legal framework that makes their scope of practice sufficiently broad to meet the needs of their population. Until PAs are recognized and regulated profession in the UK, they will not be able to be deployed effectively in rural and remote contexts.

Several of the studies assessing PA practice in the United Kingdom have also described the effect of the legal restrictions on the profession as a barrier to maximal PA practice. This finding in our study was expected. The study on satisfaction of doctors with the PA role published in 2014 found that 82% of doctors felt that inability to prescribe limited PA practice and 43% of doctors felt that restrictions on ordering radiologic investigations were a barrier to PA practice. In both pilot projects, PAs who had come from the US and were accustomed to prescribing and ordering tests under their own names found the inability to do so in the United Kingdom frustrating and inefficient. Several PAs in these pilots expressed that they could have seen more patients if they had not constantly been searching for someone to enter an order for a patient.

This study found that the lack of a set of administrative structures to facilitate the integration of PAs into the hospital trust was a source of substantial frustration to PAs and doctors alike. PAs and doctors also reported that this barrier to PA practice was wholly unexpected. They simply had not considered how they would meet the requirements of the NHS to have a role-specific set of evaluation and scope of practice forms. In addition, it was difficult for PAs to obtain the proper information technology privileges when no one really knew
what the role should encompass. Finally, lack of formal recognition of the role meant a lack of a dedicated funding stream for the PA’s salary. Each of these administrative problems made it more difficult for the PAs to demonstrate the possibilities of the PA role, much less to seek to expand the role. It is easy to imagine that overworked supervising doctors might prefer to have junior doctors or nurse practitioners instead of PAs if the burden of improvising administrative solutions for the PAs is so much greater.

These administrative difficulties are also likely to impact on morale of the PA. It is challenging to view yourself as part of the team if you have to constantly explain your role, if the criteria on which you are evaluated are uncertain and if you are constantly worried about the funding for your employment. This uncertainty may also inhibit the PA from taking the initiative to try to develop the role further. Why put in the effort if that work will not be recognized on an evaluation and if there is a high risk of loss of the position due to an unsecured funding stream?

The doctors who were supervising PAs were very frustrated at the lack of administrative structure. They worried that their performance as a supervisor would be judged negatively because they did not document their supervision and evaluation of the PA “correctly”. The lack of clear administrative structures for supervising doctors may inhibit the growth of the PA profession. If doctors become unwilling to supervise PAs because they do not know how they will be judged for their supervisory role, the PA profession will be unable to expand across the NHS.

The finding that lack of administrative structures was a barrier to the use of PAs has not previously been described in the literature. In the Scottish and English pilot studies, lack of comment on this topic was likely due to the temporary nature of the pilot projects. PAs were brought from the US for only a few years and did not require long-term human resources structures. Funding for the salaries of the PAs in the pilot projects had been allocated in
advance. In addition, these pilot projects were conducted in the early 2000s, before electronic medical records and ordering systems were commonly used. Therefore, the information technology issues encountered by the participants in the current study were not faced by the US PAs in the pilot projects. More recent studies on UK-trained PAs working in the NHS permanently have not seemed to be directed at characterizing the administrative issues surrounding PA practice. Participants in this study reported improvising solutions to these administrative problems. It will be interesting to see if these improvised approaches are adopted by the NHS as permanent administrative structures or if national guidelines will be established to enable hospital trusts to recruit, evaluate and pay for PAs in the future.

The last regulatory issue faced by the PAs and the doctors in this study is possibly the most consequential. Because there is no governmental guidance on what should be included in the scope of practice for a PA, people were forced to speculate what would be appropriate. Some teams decided that the delegatory clause in the medical practice act meant that PAs could do any task approved by a doctor. PAs on these teams were given a wide scope of practice. Other teams decided that PAs could only do a small number of tasks, none of which involved much independent judgement. The implications of this heterogeneity for the development of the PA role nationally are substantial. While there should be differences in the PA scope of practice by specialty, if there is no agreement on the core tasks PAs can carry out, it will be hard to define or regulate the profession. For example, PAs who work in cardiothoracic surgery may be credentialed to insert chest tubes to drain pleural effusions, while those who work in endocrinology are not. They each practice within the scope of practice of their specialty team. However, core PA functions should be delineated. Based on the Competence and Curriculum Framework for the PA (CCF), all PAs should be able to take a history from the patient, perform a physical examination, order and interpret diagnostic tests, recommend appropriate treatment
strategies, and undertake both diagnostic and therapeutic procedures for which they have been appropriately trained. However, this guidance has not routinely been accepted by hospital trusts that employ PAs. In addition, the CCF is only guidance, not law. Following the CCF does not indemnify trusts if PAs commit malpractice.

The lack of clarity about the scope of PA practice makes it difficult for PAs to know how to work to mold others’ views of what a PA could be. If PAs had had some guidance about an appropriate scope of practice, or goal for scope of practice, it would have enabled them to begin to advocate with their doctors for more training and more opportunities to demonstrate their knowledge and potential. It was hard for the PAs to advocate for themselves when they had nothing objective to point to in their discussions with doctors and other members of the team.

Lack of clear scope of practice for PAs also makes advocacy for the profession difficult. If there is no consistent answer to “what is a PA?” and “what can a PA do in a hospital?”, it is difficult for hospital trust and mental health trust administrators to assess whether the role would bring benefit to their institutions. Lack of clarity makes it difficult for both PAs and PA champions to communicate to others how best to integrate a newly recruited PA on to their specific service. It also makes it more difficult for doctors who practice in specialties in which no UK PA has ever practiced to envision how a PA might be used on their service. Advocating for the profession in the political sphere and with patient groups is also difficult when there is no clarity about the essentials of the role.

Lack of clarity regarding scope of practice has certainly been noted in other studies of PAs. Both pilot studies found substantial differences in what the US PAs expected their scope of practice to be compared to what it actually was. Predictably, some of the US PAs were frustrated at restrictions on their scope of practice compared to how they were used to practicing in the United States. However, in some cases, experienced US PAs actually felt that
their scope of practice was too broad and was, therefore, unsafe. These PAs were accustomed to close supervision when taking care of critically ill patients, which the UK doctors were not expecting to need to provide. Doctors surveyed in 2013 also reported feeling frustrated by the lack of role clarity for the PAs with whom they worked.\textsuperscript{27} A more recently published study seeking the opinion of doctors whom had never worked with a PA about the role of the PA found considerable confusion about the scope of the role as well.\textsuperscript{31} After regulation is achieved, it will be interesting to observe if and when a more coherent vision for the role across the United Kingdom is achieved.

iv. PA involvement in role and skill development facilitates the smooth integration of PAs into secondary care

Both doctors and PAs in this study expressed that the integration of the PA was easier when PAs were included in the decisions about the structure of their job. In these situations, the team tried to leverage the unique aspects of the PA role to bring benefit to the team. The best teams encouraged their PAs to think about new ways they could work to benefit the team and the patients. As noted above, teams that considered input from the PAs reaped benefits of increased satisfaction and intention to stay with the clinical service. PAs who have input into their role feel valued and are also likely to be working in their areas of personal strength. While two PAs may be working on a surgical service, for example, one may spend more time working on the wards and the other more time working in the operating room, based on personal preference. The team is likely to benefit from the increased medical management skills of the first PA and the increased intraoperative skill of the second.

It is likely that in addition to the increased personal satisfaction PAs feel when they have input about the structure of their jobs, that these PAs will be willing to make investments in
their team and their hospital trust. They may be more willing to make suggestions for performance improvement for their teams because their teams have demonstrated respect for the PA and their role. These teams have also established that they are open to suggestions. PAs may be more able to share innovations in deployment of PAs that they have learned from other PAs around the country with their team. They also may be more willing to accept administrative responsibilities, serve on committees and perform other less-desirable tasks because they feel invested in the success of the team. Finally, these PAs may serve as exemplars and mentors to other PAs and PA teams as they share their successes and failures in PA role development with others around the country.

The finding that PAs integrate into the team more effectively when they have some input into the development of their particular role is new in this population. However, it is more likely that no one has asked this question of UK PAs than that this finding is truly novel. Ritsema and Roberts obliquely touched on the issue of satisfaction with the degree of autonomy PAs have in their work with their survey of PAs using the Cooper 10-Item Job Satisfaction Scale (JSS). One of the domains in the JSS is “freedom of choosing my own way of working”. In this survey of 124 PAs, the mean score on this domain within the JSS was 2.99 (0= very dissatisfied – 4= very satisfied). “Freedom of choosing my own way of working”, while related to the opportunity to develop the role, certainly does not encompass all of the parts of being involved in developing your own job. Literature on employee motivation over the last 50 years has clearly demonstrated that highly-educated professionals strongly value the opportunity to have input into the content and structure of their work. Further research among UK PAs needs to be conducted to validate or refute this finding. It will also be interesting to observe over time whether PAs will have increasing input into the development of their roles as the profession
matures or whether the maturity of the profession will define the roles more clearly from the outset, therefore giving PAs less input into the development of their specific role.

In addition to having input into their role, the ability of PAs to clearly understand and effectively communicate their role to others was a clear facilitator. They could not rely on others to communicate it for them. All PAs in this study were educated at universities with PAs on faculty, so they had at least one PA role model, despite having trained as PAs when there were very few PAs in the country. In the process of their education, expectations were set for the PAs. They were often treated as medical students while on their PA student hospital placements and therefore had been performing medical tasks. They carried these expectations about their role as a medical role into their jobs and communicated those expectations to others. The ability of the PAs to generate and retain a clear and strong sense of their own role likely improved their ability to enact this role when hired into their posts. They expected to assess patients. They expected to propose diagnoses and treatment strategies.

Most of the PAs in this study were able to make their expectations of the role and their actual roles essentially match. However, the two PAs in the study who had their practice substantially restricted by their employers had both tried to communicate their expectation to be allowed to assess patients and give input into their treatments, but were not permitted to do so. They tried to share their understanding of the role with the doctors, but were unable to get the doctors to agree with the PA’s view of the role, due to other barriers previously discussed. Several PAs in the study reported that they had been formally educated on how to introduce their role to others. They found this training invaluable in their first jobs. For many PAs, being able to explain their role clearly helped them obtain a role that more closely matched their expectations. This finding ought to encourage educators to provide formal training to PA students to help them explain the role to others. It is likely that this education will be needed
for many years to come, as PAs in the United States are still explaining the contours of their role to others more than 50 years after the first US PAs graduated.

Previously published literature has identified role confusion and the need for PAs to educate others about the role, consistent with our findings in this study. Of course, the need for PAs to continuously explain the role was prominent in both the English and Scottish pilot studies because PAs were completely new to the NHS at that time.\textsuperscript{2,3} However, other studies performed in the UK have also demonstrated that confusion about the PA role exists in the minds of other health professionals and patients. Williams and Ritsema found that a small percentage of doctors who worked with PAs felt that patients could not differentiate between a PA and a doctor.\textsuperscript{27} Halter and colleagues found that medical directors of hospitals were not certain about what PAs do in their hospital trust, or what roles they might fill.\textsuperscript{30} The survey of general practice doctors who had never worked with a PA found even more confusion about the potential scope of the role and educational background of PAs.\textsuperscript{31} Further research should be conducted over time to characterize the degree of awareness of the PA role within the medical community, among health professionals, and among patients in the UK.

PAs who see opportunities in their clinical environment to grow and learn felt that their role was appropriate and that their team appreciated their potential to contribute to the service. Being given increasing levels of medical responsibility showed the PAs that the doctors viewed them as part of the medical team. The three PAs who had seen the most growth in their roles since hiring all expressed how they felt respected by the doctors. They also were all involved in teaching doctors and students. The increasing level of responsibility they were given and the respect they felt from their team fueled their desire to learn more about their specialties. They wanted to be members of the team who could be counted on for strong, up-to-date medical knowledge. Having this degree of respect likely allows PAs to enact their role completely, and
even to potentially have their own view of the role stretched as they grow and learn over time. Knowing that they are viewed so positively motivates them to invest more deeply in their team and their work.

The finding that having opportunities to grow and learn in their role is a facilitator to PA practice is new in the UK PA literature. Previous studies have not asked questions that would have drawn out this theme. However, the larger workplace motivation literature has addressed this theme in much greater detail. Many studies have found that workers are motivated by workplaces which provide long term development opportunities.\textsuperscript{94, 95} As the PA profession develops in the UK and as some hospital trusts begin to be considered more desirable places to work than others, it will be interesting to further characterize these differences to better understand what motivates PAs as employees. We will then be able to see whether an opportunity for growth is a prime motivator for PAs.

When PAs took initiative to develop skills they thought would be valuable to their teams, doctors noticed with appreciation. Learning new skills sets up a beneficial cycle. PAs noted that demonstrating excellence in performing one type of task often helped the medical team see them as part of the team and increased the willingness of the doctors to train them in more medical and surgical tasks. PAs found that humbling themselves to acknowledge that they needed training in a task was often rewarded with an opportunity to receive that training. The PAs felt that expressing enthusiasm for expanding their skill set was also a way to let the medical team know that they wanted to be as useful as possible to the team. PAs claimed the medical identity through performing invasive medical procedures and having sensitive medical conversations with patients – tasks previously performed only by doctors. Increasing their scope of practice also allowed them to relieve some of the burden on junior doctors for the
clinical workload. Sharing this load also made the medical team more willing to provide further training for the PAs over time.

The relationship with the junior doctors regarding training was bidirectional. While PAs initially often needed training from junior doctors, as they became more experienced as PAs, the direction of the training often reversed. PAs who had been working on their specialty clinical services became the teacher of the new junior doctors, who arrived at three and six month intervals. Both PAs and doctors noted this reversal. Senior doctors expressed appreciation that the PAs were experienced enough at this point in their careers to share the responsibility the doctors have for teaching medical students and junior doctors. The doctors on teams where PAs were teaching all expressed confidence in the ability of the PA to handle the educator role. Most of the PAs in this study had already had some opportunities to teach and all were enthusiastic about these opportunities. They were surprised at how well they were accepted by the medical students and junior doctors as teachers and were pleased to be viewed as such an important part of the medical team.

By teaching doctors and medical students, PAs are asserting their place as members of the medical team (as opposed to the nursing or allied health teams) and reinforcing the adequacy of their training to hold such a place on the medical team. They are defining themselves as members of the medical team in the minds of successive waves of doctors and medical students. These doctors-in-training will become consultants. As PAs are involved in their teaching, the PAs influence their views of the PA role on the medical team now and in the future.

While many of the PAs had opportunities to impart medical knowledge to students and junior doctors, all of the PAs reported being a reservoir of hospital systems knowledge for them. Doctors also noted that PAs provided invaluable systems knowledge to the waves of medical
trainees that came through the hospitals. Both PAs and doctors reported that mastery of this systems knowledge was often the way PAs first gained positive attention from junior doctors, many of whom were initially skeptical about having to work with PAs. Once PAs had established themselves as experts on navigating the hospital system, they were sometimes able to parlay the respect they had gained into an opportunity to demonstrate their clinical knowledge as well.

On January 18, 2019 the first study of the relationship between PAs and junior doctors was published. This study confirmed the observation that exposure to PAs made junior doctors more accepting of the role. Less than 20% of the participants reported that having PAs on the team affected their training opportunities negatively. These findings are consonant with the literature on PA–resident relations in the United States. Since the advent of restrictions on the number of hours resident physicians in the United States can work each week in 2004, academic medical centers have been hiring increasing numbers of PAs to do some of the work formerly reserved for residents. Several academic medical centers have performed formal evaluations of the perceptions of the resident physicians on the addition of PAs to their teams. Most of this research has been done with surgical residents because the restrictions on hours disproportionately affected surgical teams. In 2003, Victorino and colleagues found in a relatively small study that bringing PAs onto the surgical team decreased the amount of time resident surgeons spent in the hospital, decreased resident stress levels and increased surgical resident morale. Resnick and colleagues followed Victorino with a much larger study, in which they found that 91% of surgical residents felt that adding PAs and NPs to the team had improved their surgical education experience. However, doctors on these teams did note that they struggled to understand exactly how PAs and NPs fit into the hierarchy of the traditional surgical team. PAs in this study were found to be less satisfied than doctors with the educational experience of being members of an academic surgery team. They also struggled to define their
role and feel that their educational needs were being met. A more recent study (2016) of the implementation of PAs on a surgical service at a hospital in Toronto found that the residents there felt that the presence of PAs on the team significantly decreased the amount of administrative work and the amount of time residents spent working on ward-related activities. They also believed that having PAs on the team increased the amount of time they were able to spend in the operating room and at educational activities. It will be interesting to see what research will be produced on this topic in the UK, as more PAs are rapidly incorporated into hospital teaching services over the next two to three years.

v. An effective champion helps define and develop the role

The PAs in this study who were lucky enough to have an effective champion reported they could not have imagined how things would have gone for them when they started on their service without a champion. The champion smoothed their paths in many ways. The champions communicated to junior doctors and other staff that the PA was a member of the medical team. The champions worked to remove administrative barriers the PAs faced. Champions provided training to PAs in their new specialty. Most importantly, the presence of a champion let the PA know someone would support them through the challenges they faced.

Having a champion meant the PAs felt more freedom to explore the possibilities of their role. They felt free to make suggestions and to ask questions. They did not have to fearfully check with someone about each step they took, knowing that if they overstepped their boundaries by a little bit, that their champion would support them. PAs who had strong champions expressed optimism about the PA role. They could see how the role may develop further, particularly after regulation is achieved.
Doctors who served as effective champions expressed enthusiasm about the current scope of the PA role and the ways the role might develop in the future. They enjoyed their role as champions. They felt that they were contributing to a new solution for the workforce problems faced by the NHS. Many doctors in this study felt that PAs are an important approach to addressing NHS workforce needs and were proud of being on the “cutting edge” of this trend. Champions were pleased with the development in knowledge and skills that their PAs had shown over time and even expressed glee in seeing the PAs exceed the expectations of doctors who had less experience with a PA.

Doctor champions could see the benefits of having a PA to complement the junior doctors on the team. One of the primary benefits doctors specified is the continuity that the PA can provide a team, which prior to the hiring of a PA, had consisted only of an ever-changing kaleidoscope of junior doctors. The doctors realized they could invest in teaching the PA and reap the benefits of that investment for years. Investing in the training of the PA was not only an investment in the PA, but the PA often became able to teach students and junior doctors, multiplying the investment of the consultant or registrar in the PA. Patients also benefited from both the continuity of care provided by the PA and the investment made in the PA by the champion. Doctors and PAs alike spoke about how PAs became the reservoir of knowledge about specific patients who have to return frequently to the hospital due to serious chronic illnesses. The continuity of care that the PAs bring to the team represents a significant opportunity for the PAs to carve out their own role within the healthcare system, distinct from junior doctors. As discussed above, no literature on PAs in the UK has specifically addressed the role of champions, other than the English and Scottish pilot project evaluations. This is a potentially fruitful area for future research.
vi. Principled behavior allows the PA role to develop safely and effectively

A key piece of the PA profession’s development in the US in the 1960s was the idea that PAs would be trained explicitly to work within the limits of their medical knowledge, and that they would seek help from a doctor when the limits of that knowledge had been reached. The approach of providing targeted medical training along with explicit training in recognizing one’s limits has been carried over to the development of PA education in the United Kingdom. Both PAs and doctors in this study felt that the PAs knew their limits and were diligent in putting patient safety first. For PAs, knowing that their supervising doctors knew and understood that their training did not cover less common conditions meant that they felt free to ask for assistance. No PAs in this study reported an experience in which a doctor refused to provide assistance when asked. PAs demonstrated ethical practice by seeking help when needed, and doctors demonstrated ethical practice by providing assistance without shaming the PA for his or her uncertainty about a patient.

For the PA role to grow and spread through the NHS, PAs and doctors both need to understand this important interpersonal dynamic. When PAs recognize their limits and doctors provide the needed input, patient safety is preserved. If PAs begin exceeding their scope of knowledge or doctors refuse to provide needed assistance, patients will be harmed and the resulting negative publicity will potentially hinder the spread of the role throughout the NHS. British people are already concerned about the quality of care they receive from the NHS and are very sensitive to suggestions that costs (rather than clinical need) are the basis for decision making. In addition, British people have a very unfavorable view of the American health care system, and often become concerned when new approaches, including the use of PAs, are promoted as “having worked well in the United States”.
Some UK PA literature has addressed the issue of PAs’ safety and awareness of limits. Both pilot projects found that the ability of PAs to work appropriately within the scope of their knowledge increased the acceptance of the PAs by doctors, nurses and patients. The Drennan study which compared 932 PA visits to general practice with 1154 visits to a general practitioner for an acute medical complaint found no differences in rates of misdiagnosis or patient satisfaction with the encounters. A study of videotaped clinical appointments by GPs and PAs conducted by de Lusignan in 2012 found that none of the consultations provided by PAs were judged as “unsafe” by independent assessors. No specific studies on PA safety or understanding of limits have been conducted in the secondary care setting.

The finding that positive personal characteristics such as humility, willingness to learn, being organized, being hard-working, and having strong communication skills helped the PAs integrate into their clinical services is unsurprising. These traits gave the PAs credibility with their teams and made the teams more willing to accept them. PAs may have felt the pressure of being the first PA and worked to ensure that they were a positive representative of the profession. The PAs and doctors also commented extensively on the need to build trust between doctors and PAs. PAs worked to establish this trust by knowing their limits (see discussion on limits and safety above). They also developed trust by telling the truth, working hard to improve their medical knowledge and showing what they could do by actively participating in rounds, patient care, completion of day-to-day ward tasks, and documentation in the patient’s chart. PAs trusted doctors when the doctors treated them with respect and did not shame them for seeking help when the patient’s needs exceeded the PA’s knowledge and experience.

Given that many of these traits are settled in adults long before they become PAs and that these traits are difficult to instill in adults who do not already have them, this finding should provide guidance to universities that train PAs. Universities should look for these traits in
prospective students and encourage the further development of these traits during their PA training. PAs who mentor PA students can show them how exhibiting these traits can help them succeed in medicine, particularly when the PA role is so new.

A number of previous studies of UK PAs have demonstrated that positive personal characteristics and strong interpersonal skills help PAs become accepted members of the medical team. Both the English and Scottish pilot studies demonstrated this finding. In addition, Halter’s qualitative study of PAs in general practice found that patients were appreciative of strong communication skills demonstrated by PAs. In the study of doctor satisfaction with the PA role, Williams and Ritsema found that 60% of doctors felt that PAs had strong communication skills and 57% believed that PAs had improved the quality of teamwork within their team. In addition, in the qualitative component of the doctor satisfaction study, doctors commented many times on the compliments generated by patients and staff for the interpersonal skills of the PAs.

vii. An unclear role is the primary barrier and a clear role is the primary facilitator to integrating PAs on to the secondary care service

When evaluating the three classes of barriers to integration of the first UK-trained PAs onto secondary care services in the NHS, they all point to the lack of a clear definition of the PA role being the primary barrier to using PAs to their fullest for the patients and the NHS. New professional roles can be developed in many different ways. A role could be formally designed by educators and intentionally implemented within a system to meet a specific need. A new role could develop as a result of an expansion of or change to an old role within the system, such as when nurses expand their knowledge to become nurse practitioners and assume a more “medical” role. A new role could be adopted from somewhere else that already has the role (ex:
idea of the PA role brought from the United States to the United Kingdom) into a place that sees a need that the new role could meet.

For an innovation to take hold and be effective, the diffusions of innovation literature suggests that the innovation needs to provide a relative advantage to the old way of doing things, be compatible with the needs and norms of the health system into which it is being integrated, be simple to implement, be tested without a substantial long-term commitment to continuing to use the innovation, be flexible to accommodate the greatest needs of the system, and pose little political risk to those who choose to implement the innovation. Lack of clarity about the fundamental characteristics of the innovation (e.g., the PA role) by those implementing the innovation make meeting each of these criteria difficult. If the role is unclear, it is hard to assess compatibility with the existing system or to assess or demonstrate relative advantage. Being able to articulate the essential characteristics of the role is essential for both advocacy for the role and assessment of its usefulness.

Lack of clarity about the role of the PA means that hospital trusts are having difficulty using the role to its full potential now. Instead of developing a specific role for the PA that might help with some of the needs of the clinical services, PAs are being slotted into junior doctor or nursing roles. Where there is no vision or guidance for a different role for the PA, managers try to fit the PA into an existing role they know and understand. This approach then strips away the potential benefits that the PA might be able to bring to the team for improvement in the way care is delivered to patients. When there is no clear role, champions have no clear path for advocacy. They cannot ask the system to change to allow the PAs to do something different within the system if they do not have a clear conception of what that “something different” might be.
In addition, the lack of clarity about the scope of the role induces extra expenses to the system. PAs and supervisors are forced to improvise the PA role and the systems that will govern the PA. Developing tools such as performance appraisals and protocols for PAs to use is time-consuming. In addition, since role development is not part of the training to become a physician associate or doctor, the tasks associated with role development may not be done particularly well, necessitating further changes later. PAs spend too much of their time explaining their role to others. Particularly with junior doctors, PAs may need to attempt to establish their role with new people nearly every month, instead of being able to conduct their clinical work within the team. PAs and supervising doctors also report having repetitive discussions with administrative staff to resolve issues around PA practice within the hospital trust to get them resolved. These discussions take time and are often a source of deep frustration and demoralization for the PAs and doctors involved. Role clarity and defined administrative structures around PAs would allow PAs and the doctors who work with them to simply point other health professionals and administrators to the relevant documents for their review. Fortunately, this problem is potentially one of the most easily rectified barriers of all of those that emerged across this study. Nearly all PAs talked about how they had honed a brief “A PA is...” speech to give to new doctors, nurses, other health professionals and patients. One group of PAs developed a small brochure on the PA profession. Another trust made certain to include an explanation from a consultant as to who the PAs were and what their role on the team was in the junior doctor orientation to the service.

Finally, lack of role clarity now makes it difficult for PAs, doctors, administrators and health policymakers to project what the contribution of the PA may be in the future. Ideally, educators, medical leaders and administrators would look closely at the needs of secondary care services in the NHS and the training of physician associates to see how PAs might assist the NHS
in meeting its secondary care mission over time. However, it is difficult to project what the role could become when leaders have no clear sense of what it is at present.

**viii. A clear PA role is the primary facilitator to the integration of a PA onto a secondary care service in the UK**

In contrast to the problems encountered when the PA role is not clearly delineated, clarity about the PA role allowed for several benefits to the team and the healthcare system. First, clarity about the role and the expectations that doctors and PAs have for how the role will be deployed allows team members to understand each other and work together most effectively. In the interviews, it was clear that when the doctor and the PA had similar views and expectations for how the PA would work that the team functioned more productively. On these teams, PAs were allowed to do what they did well and were appropriately supervised. These teams did not need to waste time on battles about specific tasks that the PA would or would not perform. PAs on these teams did not struggle to get their doctors to invest in them or to allow them to take time to attend training opportunities that would benefit the team. Interviews with doctor/PA teams in which there was a larger discrepancy between what the PA and the doctor thought the PA role was or should be revealed frustrated PAs, frustrated doctors, and inefficient teams. These teams also invested little in their PAs, compounding the PA’s feeling of being misunderstood and unappreciated. PAs on these teams felt that if they could only convince the doctors to give them an appropriate role, that the doctors would reap rewards in terms of what the PA could provide the team. They felt frustrated that their potential contribution was dismissed or ignored.

Having a clear role for the PA on the team allows the distinctive role of each type of medical provider (consultant, registrar, SHO and PA) to be leveraged for the benefit of the team and
patients. Consultants have completed their full medical training and are the most highly paid professionals in the system. It would be a waste of a consultant’s time to draw blood or even to perform the first-pass history and physical exam on a patient. Consultants should be working with the team to provide oversight to the care of the most complicated patients. They should be performing the most delicate surgical operations. SHOs should be doing most of the routine medical care of the patients: taking their histories, performing physical examinations, ordering and interpreting diagnostic studies and performing therapeutic procedures, all under the watch of the registrars, who can make decisions about the patients who are somewhat less complicated than those managed by the consultant.

Depending on what the needs of the team are, PAs should have a role designed to help the team address gaps. PAs can do many of the same tasks as SHOs. Like SHOs, PAs require guidance and supervision, particularly in the first few years on the service. However, some PAs in this study were trained specifically to do tasks that an SHO would not have carried out. For example, one PA ran her own rapid access clinic. Her ability to conduct this clinic was based on her training in the specialty over a period of years, her ongoing relationships with the consultants in her specialty, and her knowledge of and fluency with the systems of her trust that allowed her to access services and resources for her clinic patients. No doctor-in-training would have been able to carry out such a clinic. Junior doctors rotate away too quickly and do not yet have a deep knowledge of a particular specialty. They also don’t have longitudinal relationships with the team of consultants, and therefore would not have the same level of trust with these consultants as a PA who has worked with them daily over a period of years. Two other PAs had been trained to provide specialty procedural services needed for their surgical teams. Within a year, these two PAs were not only performing these procedures regularly, they were also training SHOs in those procedures. This arrangement took advantage of the continuity that PAs
have on the service. Investing in training PAs made sense to the consultant because it meant that he did not have to teach certain procedural skills to all the junior doctors who arrived for a 3-6 month stint with the team. Finally, a PA and a doctor who worked in a specialty in which all patients have a serious chronic illness reported that one of the main benefits to having the PA on the team was the continuity she provided with the patients. No other team member, even the consultant, was present on the ward as consistently as the PA over a two-year period. The PA could remember clinical details about specific patients and could help the team customize assessment, treatment and patient education regimens based on her knowledge of what had benefited a specific patient most in the past. The team leveraged her knowledge to both provide high quality medical care to the patients and to teach medical students and junior doctors more about comprehensive management of patients with this disease.

Clarity about the PA’s role on the team also allows patients to be cared for safely. While some of the teams in this study were not functioning very well because of excessive restrictions on the PA role, one team initially did not function well because the doctors on the team gave the PA too much responsibility for patient care without sufficient oversight. Fortunately, the PA involved had been well educated by the faculty of the PA program where she trained about knowing the limits of her training and experience and she refused to accept the level of responsibility she was being asked to take. Finding the appropriate level of autonomy for the PA which allows the PA to make a substantive contribution to the team while still protecting the safety of each patient is essential. Many of the teams in the study felt they had reached this equilibrium. The doctors were confident that the PAs would not exceed the limits of their knowledge and the PAs were confident that when they asked for help from the doctors that appropriate help would be provided. Each of these well-functioning teams felt their current arrangement allowed the team to protect patient safety.
A clear role for the PA on the team at the time the PA was hired seemed to allow for further development of the role as time passed. Although all the reasons for this phenomenon are not clear, part of the answer seems to be that a clear role for the PA at the start made integrating the PA on the team smoother and gave team members a positive experience with the PA. Having started with a positive experience, team members were willing to invest in the PA and consider what might be done to expand the role of the PA over time. These team members were also able to see what made the PA different from the junior doctors and this understanding allowed them to envision role development opportunities separate from the well-worn path of doctor training and development.

Doctors who had helped define a clear role for the PA and PAs who worked within a well-defined role also had a path for advocacy for the PA profession. Being able to clearly describe what the PA brings to the team and show how a specific team uses their PA allowed PAs and PA champions to use their experiences to demonstrate to policymakers, hospital trust administrators, doctors and PAs what the PA role could become in the NHS. While not all functional teams of doctors and PAs became outspoken advocates for the profession, neither of the less functional teams included in this study were advocating at all on the regional or national levels for PAs. In contrast, the doctors on one of the better functioning PA /doctor teams had encouraged their PA to submit her research work for a scientific contest in their specialty. The PA won this contest, which included submissions from about thirty doctors. Her win provided a national stage for a conversation about what PAs are and how they could contribute to teams in that specialty. Another well-functioning team had spoken at regional medical conferences about their approach to implementing the role. This team also was very active in providing supervised clinical practice opportunities for PA students.
Finally, a clear role for the PA made PAs more likely to want to stay employed on that clinical service. PAs who understood what was expected of them and felt that their team understood what they offered were more likely to express satisfaction than those who did not have a clear role. Three of the PAs in this study expressed that they had seriously considered changing jobs (although none had done so). In all three cases, these were PAs who had reported substantial difficulties arriving with their teams at a clear mutual understanding of the role at the start. One of the primary benefits of the PA role for the NHS is continuity. If PAs are unsatisfied with their work because of a lack of clear role definition and this dissatisfaction causes the PA to seek other employment, the benefit of continuity is lost. In addition, every time a job turns over, there is substantial cost to the hospital trust in recruiting, hiring, orienting and training a new PA for the post.

D. Sensemaking in the Development of a New Medical Profession in the United Kingdom

The participants in this study had ample opportunities to engage in sensemaking and were eager to share their thoughts about the birth of the PA profession in the UK with a researcher. Both doctors and PAs, without being explicitly aware of the sensemaking framework, routinely discussed how they had to develop and enact a new identity, how they engaged in retrospection and discussions with others about the role, developed a narrative around their work and extracted cues from the environment.

i. Develop and enact identity

The process and challenges of creating an identity either as a PA or as a supervisor of PAs in an environment in which PAs were new was one of the central concerns that emerged from this
study. Identity and threats to identity are key concepts in the sensemaking framework. Who people think they are in a particular context substantially influences how they act in that context. It also deeply informs their interpretation of how people respond to them in that context. People hold specific views about themselves and their role and then act to bring their vision of themselves and their role into existence. They are attempting to create an environment around them that is congruent with the identity they have developed. Developing an identity and enacting that identity are two sides of the same coin: one is the internal process that is not visible to others, and the other is the behavioral manifestation of the process of identity development.

For PAs, becoming the first PA on a clinical service was a major identity development challenge. They came to their new jobs with a partially formed identity from their time as PA students. All of the PAs in this study had been educated at institutions in which PAs were members of the teaching faculty. These graduates, therefore, had some access to PA role models. Eight of the nine PAs in this study had completed their PA education at a university which also housed a medical school and many of the PAs had been treated as medical students while they were on clinical placements. During their training, they had become accustomed to performing medical tasks and rounding with the medical or surgical team. They expected that when they became full-fledged PAs that they would continue to be part of the medical team and perform medical and surgical tasks. Some of the PAs in this study had exactly that experience. They arrived on the secondary care service and were almost immediately given the opportunity to work like a senior house officer. For these PAs, creating and enacting an identity as a member of the medical team was a reasonably smooth process.

The comparison with senior house officers, while facilitating acceptance of PAs as medical providers (as opposed to nursing staff or other allied health professionals), had the potential to
inhibit the ability of the PAs to develop and enact a specific role for physician associates. PAs who reported being part of the SHO work schedule had trouble differentiating themselves from the SHOs. After working for a few years of being considered an “SHO”, several PAs expressed that they were expected to fulfill the responsibilities of an SHO, but did not have the rights of an SHO. These hospitals did not invest in the education of the PAs the same way they did the SHOs. Unlike the SHOs, the PAs were never going to become registrars or consultants and did not have the hope of being relieved of some of the less-pleasant SHO duties. Unlike an SHO, the increasing medical knowledge and competence of the PA was not acknowledged by the NHS in terms of increased compensation or recognition. Being constantly thought of as a “sort-of SHO” inhibited the PAs from convincing doctors and administrators that PAs could fulfill a different role on the team that would benefit both the team and the patients. For example, one PA had a novel idea to develop a consultation service for doctors at small hospitals to be able to phone their specialty team at the large teaching hospital to get quick advice for patient care. This PA thought that with her several years of experience in the specialty, that she would be an ideal person to take the initial phone calls, handle the ones that were within her scope of knowledge, and triage the more complex calls to the appropriate subspecialists on her service. This proposal would have leveraged the fact that PAs do not rotate away from the service like SHOs, and could have provided continuity to the doctors at smaller hospitals and her specialty service consultants alike. The PA presented this idea to her team and the consultants liked the proposal. However, this proposal was quashed because the consultants knew the team was chronically short of SHOs, and they didn’t want to remove the PA from the SHO schedule or distract her from completing the daily jobs list. This decision inhibited the development and enactment of a PA role that would have taken advantage of the unique aspects of PA practice.
The lack of a legal structure for PA practice and administrative guidance from hospital trusts about how to incorporate a PA into the medical team inhibited shared sensemaking across employee types. Unsurprisingly, when hospital staff asked a new PA or a doctor supervising PAs “but what can PAs do?,” an equivocal response did not inspire confidence. Some health professionals wanted a formal, government-approved list of which tasks the PAs could and could not legally perform. Because PAs assert that their training is sufficient to allow them to be trained to perform the specific tasks of any medical specialty, as long as there is appropriate supervision, the PAs opposed a specific procedure list that did not account for the specialty of the PA. Explaining that they are generalists who have a broad medical foundation that enables them to receive more on-the-job training from doctors in any specialty did not always allay concerns of other health providers. The current uncertainty surrounding the PA role means it was difficult for PAs to engage in sensegiving to other members of the team. If PAs were recognized by the government, or if members of the hospital trust had been given guidance by the trust about PAs, it would have likely been easier for other team members to accept the PA role. PAs felt frustrated about having to say “we can do this” continually. It would have been easier to point others to guidance developed by someone other than a PA about the scope and contours of the role.

Many PAs in this study reported enacting their identity as a medical provider by simply attempting to perform all the tasks a medical provider does. They assessed patients, provided patient education, presented their patients to the rounding team, and consulted with other teams to further the patients’ care. Sometimes, they were told not to undertake these tasks anymore, but in most cases, the PAs were permitted to continue accepting medical responsibility for the patient. The two areas in which PAs could not enact a medical role were prescribing medication and requesting radiologic studies. Several PAs described their efforts to
assert their medical identity by proposing appropriate pharmacologic treatment or radiologic studies to the team and asking other members of the team to put these requests into the computer. To their delight, most PAs in this study found that the members of their team were amenable to this approach. The PAs reported that initially the other members of the medical team closely reviewed any orders the PAs wished to make, but that over time, the discussions became briefer and the opinion of the PA was more respected. A few PAs who have been in their jobs for three or four years explained that the SHOs now put in orders on the PA’s patients without much discussion at all. These SHOs recognize that the PAs have more subspecialty knowledge than they do and that they can actually learn from the orders the PA wishes to place.

PAs also enacted the role of “trusted medical professional” by taking action to ensure that they were, in fact, trusted. They recognized that being completely honest, even when being honest meant they had to accept responsibility for something they did or failed to do, was the best strategy for obtaining and maintaining the trust of the doctors with whom they worked. It was embarrassing to admit that they forgot to perform part of the patient’s physical exam or that they had a complication when performing a procedure. However, the PAs recognized that doctors would judge them much more harshly for misrepresenting the situation than they would for honestly representing it, even if the news was not good. They realized that any lapses in their perceived truthfulness could strip away the trust the doctors had in them and their judgement. Doctors reported that they were able to develop trust with their PAs in a way that they could never do with SHOs, simply because the SHOs were not on the team long enough to develop this type of relationship. Several doctors commented that they preferred to ask their PA to complete potentially sensitive jobs because they had a higher degree of trust in the PAs’ skill and truthfulness about how the task went than they did in the SHOs’.
PAs also enacted the “trusted medical professional” role when they took the initiative to develop new skills to be able to better help the team. This finding was one of the key facilitators found in this study. Doctors were impressed with the degree to which PAs worked to develop their knowledge and skills from the time they arrived on the service. PAs often asked to be trained in specific procedures when they could see that having this skill would benefit the team workload. In the minds of the doctors, these requests for training were expressions of medical professionalism on the part of PAs. These requests showed the doctors that PAs wanted to be part of the team and that they were analyzing the needs of the team in an attempt to help meet them.

Another way PAs enacted the role of “trusted medical professional” was to become teachers of doctors and medical students. Of course, the opportunity to teach medical learners only presented itself once the PA had established his or her credibility with the registrars and consultants. Several PAs reported that they started teaching doctors and medical students after roughly two years of experience in their specialty and in their hospital trust. PAs in this study expressed surprise and delight at how easily doctors and medical students accepted them as teachers. Their authority to teach was predicated on the experience they had gained in their medical or surgical specialty. It was enhanced by the way the registrars and consultants treated the PAs. Foundation doctors and medical students could see that the registrars and consultants respected the PAs and believed that the PAs were appropriate teachers. Doctors in this study reported that medical learners expressed appreciation for the passion and enthusiasm that PAs had as medical teachers. PAs reported enjoying the opportunity to teach. In some cases, it represented the chance to take a break from the daily clinical jobs list. PAs also believed that teaching doctors and medical students was a very effective way to advocate for the PA profession. These doctors could see the depth and breadth of the PA’s knowledge in this
setting, as well as the limitations of the PA’s knowledge and training. They could then make judgements for themselves about the potential role for the PA within the NHS. PAs felt pressure in this situation to provide high quality education. They recognized that doctors and students would be making judgments on the whole PA profession based on their interactions with this particular PA. Overall, however, PAs enjoyed teaching. Some PAs recognized that they might even be participating in the training of their own future supervising doctor!

While a few doctors inhibited the ability of the PA to develop and enact the PA role, many other doctors were instrumental in helping PAs both develop and enact the PA role. These champions encouraged PAs not only to act as medical providers, but encouraged them to stretch themselves further each month. These doctors encouraged the PAs to try new procedures, read journal articles, go to conferences, and present cases at grand rounds or morbidity and mortality conferences. These doctors asked the PAs to consider how the PA role might be expanded and what resources they would need to be able to expand the role. These champions supported the PAs to develop their role on a practical level as well. They invited the PA to go to the operating theater, try new procedures, render consultations to other services, and granted them paid time off to attend educational sessions that would help them grow in their knowledge and skills. Having someone express so much belief in them and their role made PAs want to grow in their skills. It made them more confident in sharing their knowledge and asserting their right to practice. It freed them to envision new possibilities for themselves and for the role as a whole.

Doctors who were champions of PAs wanted them to enact the role as a medical role not only because they wanted to encourage the PAs to be as useful as they could to the team, but also because they wanted to demonstrate to other doctors what PAs could do. Champions were trying to convince other doctors of the usefulness of the role and found that seeing a PA work
effectively at a high level was more persuasive to doctors than words alone. Champions also encouraged PAs to develop their knowledge and skills more and more in part, to be able to showcase the potential for further development of the PA role to others.

Doctors had their own role to develop and enact. While the doctors in this study were all very experienced doctors and were comfortable in that role, the arrival of the PA or PAs on their services meant they had to assume a new role: doctor who is responsible for a PA. In some cases, these doctors were the “true believers” – the person on the service who had proposed bringing a PA on board. In other cases, doctors with no previous knowledge of PAs found themselves assigned by someone else to work with a PA. Those assigned were not always convinced that bringing a PA onto the team was beneficial. Predictably, those who had advocated for bringing a PA onto the clinical service were more interested in developing their identity as a doctor who champions the PA role. They expressed interest in meeting other PA champions and were more likely to have been to a PA-related conference or meeting outside their hospital trust. Those who had simply been assigned to work with the PAs either did not accept their new role, or accepted it reluctantly. While all the doctors who considered themselves champions of the role had intervened on behalf of the PAs, those who were less enthusiastic about having a PA on their team were either unable or unwilling to advocate. Their PAs could easily tell the difference between a champion and a doctor who merely tolerated them. Interestingly, regardless of whether the doctors in this study considered themselves champions of the PA concept, all of the doctors in this study expressed respect for their PA/PAs on a personal level. A few of these doctors were not sure that the PA role had a future in the NHS and felt bad for their PAs. They were worried that the PAs had invested a lot of work and money in their education and that this work would ultimately be for nothing if the PA role failed. It is possible that this personal admiration of the PAs by the doctors represents selection bias in
the study. A doctor who found the role useless and did not personally like his or her PA would have been unlikely to volunteer to join the study.

For both PAs and the doctors who work with them, initiating the role of PA or of a doctor who works with PAs represents both a barrier and an opportunity. When there is no formalized role, the PA and the doctor have to work to develop the identity, sometimes while facing opposition from others. The role ambiguity means that the PA or doctor has the opportunity to develop that role in a way that makes the most sense to him or her. They are laying a path for other doctors and PAs who may follow, whether on the service, in the hospital trust, or throughout the NHS. PAs and doctors engage in discussions surrounding what their roles are and may become. They will extract cues from the environment about what others think about the way he or she is developing the role and will moderate their role development based on this feedback.

ii. Retrospection

All the participants in this study reported that they had expectations violated. They reflected on how the violated expectations caused them to think more deeply about what their expectations were and whether these expectations were reasonable. Doctors had to consider what tasks and skills are specific to doctors, and which might be shared with a different type of health professional. When PAs arrived at the hospital asserting that they could take on responsibilities that previously had been reserved only for doctors, the doctors in the study had to consider whether a person with the training of a PA could perform those tasks safely and competently. The arrival of the PAs caused doctors to reflect on their own training, how they came to possess their current knowledge and skills, and whether alternative paths to that
knowledge were possible and acceptable. Several doctors contemplated policy statements from the NHS that have advocated for different ways of working to achieve high quality care for patients and wondered if PAs were a viable means of achieving this goal. Doctors in this study arrived at different answers from each other, but the arrival of the PA provoked all of them to consider these questions. In many cases, the initiation of the PA role on their services forced the doctors to consider these questions more deeply than they had previously.

While PAs did not necessarily ask themselves “can someone other than a doctor assume medical responsibilities?”, they also engaged in retrospection caused by violation of expectations. PAs came to their new jobs expecting to practice medicine. Sometimes they were permitted to do so, and other times they were not. Those who were not permitted to practice medicine asked themselves what the barriers to practicing medicine were. Was there a misunderstanding of their training by others in the hospital trust? Were they being prohibited from engaging in full practice now, but would be allowed to engage in full practice at a later time once specific training had been completed? Were the people in their environment implacably opposed to PAs or were they potentially persuadable?

Even those PAs who were immediately allowed to practice medicine had some violation of expectations that provoked sensemaking. One group of PAs found that they were initially given too much clinical responsibility for their level of training and experience. This mismatch between the expectations of their team and their own expectations to receive more training before taking primary responsibility for critically ill patients made them consider what conditions would have to exist for them to be able to take care of these patients safely. Some PAs anticipated doing a specific type of work, only to find out that their team had different medical tasks in mind for them. In these cases, the PAs were frustrated because they did not feel that there was a good match between their role and the needs of the teams or patients.
Several PAs saw specific ways they thought their skills could be used to the benefit of the service, but their clinical team was not open to these approaches. All PAs in this study reported thinking deeply about the gaps in their own medical knowledge. As relatively inexperienced PAs, they were aware that they likely had knowledge deficits, but getting into clinical practice starkly revealed these gaps. PAs had to consider whether the expectations for their knowledge were reasonable and whether they could meet these expectations over time.

iii. Social activity

Participants in this study also reported engaging in social activity as part of their attempt to create narratives about the identity and role of the PA in the hospital. They had discussions with others to help them not only create their own identity as a PA on the service, but also to help develop a shared narrative within the team about the role of the PA. PAs in this study described their regular attempts to engage doctors on their service in a discussion about which tasks should ultimately be reserved for doctors and which tasks PAs could share with doctors. These dialogues allowed both the PAs and the doctors to think out loud together about the education, training and experience that a person would need to assume responsibilities previously held only by doctors. In some cases, the PAs had an agenda in these conversations: to get doctors to change their minds about the PA scope of practice. In other cases, however, these discussions were genuine dialogues with no particular goal other than to consider ideas and come to shared understanding.

PAs reported having to repeatedly explain their role and engage these dialogues about the PA role as doctors, nurses and other NHS staff came and went. Repeatedly engaging in these discussions, however, became surprisingly helpful to PAs. They felt that their ability to explain
the role to specific audiences improved with repetition. The questions they were asked in these discussions prompted them to think more deeply about their role and to refine their presentation of the role to others. PAs attempted both to communicate their own view of the role (sensegiving) and to change the view others held of the role (sensebreaking) in these conversations. PAs who had worked as PAs for four or five years noticed that the content of these discussions changed over the course of that time. Early conversations with new staff had focused almost entirely on explaining the PA concept and the education they had received to people who were entirely unaware of the concept. More recent conversations were more likely to need to include sensebreaking. People had read about PAs in the popular media or had heard about PAs via colleagues in healthcare. PAs found that more recent conversations involved having to dispel myths that had grown up around PAs. PAs were particularly frustrated with the “doctors on the cheap” narrative that had been created recently in the popular media. They also found it frustrating to deal with perceptions among junior doctors that PAs were competing for training opportunities and funding within the NHS.

Finally, PAs described the discussions they had with PAs at other hospitals as useful for helping them create their own narrative around the PA role. PAs regularly compared experiences with classmates working in other hospital trusts and with PAs they met at PA conferences. PAs found these conversations incredibly helpful. PAs at different hospitals were working in diverse ways. PAs took approaches from other teams and attempted to bring them back to their own services. They also shared approaches to the barriers they found in trying to enact the full PA role. PAs were delighted to share their own experiences with other PAs and were thrilled to hear solutions from other PAs who had success in overcoming common difficulties. Several PAs in this study also divulged that these discussions were helpful to them in maintaining their morale in sometimes difficult situations. Sharing their frustrations was
cathartic. Getting emotional support from other PAs who understood the difficulties they faced was invaluable. This type of support allowed them to sustain the narrative that they were important medical professionals who could bring benefit to patients and the NHS, even when others in their hospital trust did not always support that narrative.

Doctors also participated in discussions to help develop narratives around their engagement with PAs. Doctors who thought of themselves as champions of PAs detailed how they advocated for the PAs in both formal and informal settings with other doctors. They tried to engage in sensegiving discussions to persuade other doctors that PAs could be valuable members of the medical team. Champions discussed the PA role with doctors at their own hospitals and other doctors within their specialties who worked for different hospital trusts. A few of these doctors had even invited other doctors to come visit their hospitals to meet the PAs and to see how they had integrated them into the service. Doctors also had discussions with other permanent medical staff in their specialty regarding the current and prospective role of the PA within their services. In most cases, opinions about PAs within the specialist teams were heterogeneous. These teams needed to dialogue to develop an appropriate scope of practice for the PA that all the consultants on their team could accept.

Doctors, and consultants in particular, were key sensegivers. As members of the profession with the highest status in the medical hierarchy, they were uniquely positioned to influence the opinion of other doctors, medical trainees, and other professionals in the hospital. They formed either accurate or inaccurate narratives about PAs and then shared those narratives. In some cases, PAs felt that the inaccurate narratives formed by one doctor or a group of doctors were the biggest barrier to their ability to use their PA training to its fullest. In another case, an inaccurate narrative by the doctors meant that a PA was asked to practice beyond her scope of training in a way that she felt was potentially dangerous. Fortunately, these doctors were also
willing listen to this PA’s concerns and to develop a more safe and appropriate scope of practice for the PAs on this team. A few doctors in this study realized that spending time thinking with others about the potential role of the PA would be useful, but reported that the burden of their daily clinical and administrative work was so large that they had not been able to have these discussions. They craved the opportunity to think creatively about the possibilities of the PA role with other doctors and with PAs, but could not find the time they felt these conversations deserved. Finally, a few of the doctors in this study did not really support the idea of the PA role. They did not, in general, try to intentionally communicate to others that they did not support the role, but they did refrain from advocating for the role or engaging in sensegiving to others about the role.

iv. Extract Cues

As people work to establish their identity in a particular environment, they begin to extract cues from others about which explanations of their role are acceptable. For example, a PA volunteers to go assess a patient whom the nurses have identified as becoming increasingly ill. In the PA’s conception of her own identity, this duty is within her medical skill set. Does the nurse say, “No, we need a doctor to do that”? Does a doctor say, “You are unable to evaluate seriously ill patients,” or does the doctor say, “Our PA has good patient evaluation skills, she will be right over to help you”? While the cue that the PA would take from this example is straightforward, not all cues are so obvious. The PAs may also notice more subtle cues about how people view them and their role, such as how patients are assigned within the team or whether or not the consultants choose to teach PAs in the same way they teach doctors.
PAs in this study explained that they looked toward the senior doctors for cues about whether what they were trying to do on the team was acceptable. They deduced that if the senior doctors supported their attempts to enact a medical role, that the more junior doctors and the nursing staff would accept their actions as well. PAs struggled sometimes because the cues they discerned from different doctors were heterogenous and, at times, even directly contradictory. Some doctors wanted them to do a specific task and others thought PAs should not engage in that task. PAs had to develop a strategy for responding to these different expectations. Some PAs found that an effective champion could help them resolve some of these disparate expectations and arrive at a more unified approach to the PA and the role of the PA, at least among the consultants on their service.

Doctors reported looking for cues from their colleagues, from doctors-in-training and from the nursing staff. Doctors who had not been involved in the decision to recruit a PA were particularly sensitive to what others might think of the PA role. They watched closely to see how people responded to the PAs and to understand what questions people had about PAs and the PA role. These cues helped them develop their own beliefs about the PA role and its potential future in the NHS. Doctors also looked to professional organizations, such as the Royal College of Physicians (RCP) for cues. They felt the absorption of the UK PA professional organization by the RCP indicated endorsement of the role by the oldest medical professional body in the UK. Doctors of all specialties felt that the RCP would not have extended RCP membership to PAs if the organization felt the PAs were badly trained or a poor fit for the NHS. They were reassured by this endorsement of the PA profession.

v. Develop a plausible story
In the sensemaking literature, considerable attention is given to the idea that as people construct narratives about their experiences, they usually adopt the most plausible explanation for what they see, not the explanation that strictly accounts for all the facts. A plausible explanation may be the one that is most congruent with the individual’s past experience. It may be the explanation that makes the person feel best about themselves or the explanation that allows a group to move forward in a difficult situation.

In this study, both PAs and doctors constructed narratives that are plausible, if imperfect. One of the strongest narratives was that a PA was “just like a senior house officer”. This explanation for the PAs’ presence on the team accounted for both the ideas that PAs were medically trained personnel who could be useful to the team and that they were medical professionals who were not yet very experienced. One advantage of this explanation was patient safety. New PAs were allowed to care for patients while being closely supervised to ensure that proper care was rendered. Another advantage for the PAs was that this equivalency was an explicit acknowledgement that the role was a medical role. A final potential advantage was that the consultants and registrars who made this equivalency recognized the need of the PAs for educational opportunities to grow their knowledge and skills. From the PAs’ perspective, however, not all teams supported the PAs to receive further education.

Some of the PAs reported feeling frustrated by the “PAs are just like SHOs” narrative. They had hoped that some of the unique aspects of PA practice would be recognized. Being lumped with the SHOs eliminated the possibilities for capitalizing on the differences between SHOs and PAs. One team which did not adopt the “PAs are just like SHOs” narrative was able to develop a rapid access clinic for patients to be seen by the PA. Had the doctors on this team not recognized the possibilities inherent in having a medical staff member who would not rotate away, they would never have developed this clinic. PAs whose teams had adopted the “PAs are
just like SHOs” story were very concerned that they would never get out of this box. They recognized that the team desperately needed their manpower to keep the team running due to a shortage of SHOs, but did not feel hopeful that this narrative could ever change. They did not want to just be working the jobs list every day for the rest of their professional lives. PAs on these teams wanted to grow in their role, but because they could never become registrars or consultants, they felt that any advancement or change was unlikely to occur. They believed that the only way to get out of this box would be to find a different employer.

Another narrative developed by some teams was that PAs were able to do “jobs” (clinical tasks such as procedures or calling for consultations), but that they were not sufficiently trained or experienced to conduct patient assessments. This narrative was strongly held by one team and was partially held by another team in the study. These teams believed that PAs had adequate training to perform routine tasks, even if these tasks were invasive medical procedures. The repetitive nature of these procedures meant, in the doctors’ view, that once the PA had demonstrated that they could conduct these procedures using proper technique, that the PAs were safe to conduct them regularly. The doctors, however, were less comfortable allowing the PAs to exercise the judgment inherent in obtaining a medical history or performing a physical examination. PAs were surprised to encounter this limitation because they had been permitted to perform these assessments when they were PA students. This narrative, while satisfying to these doctors, was not acceptable to their PAs. The PAs who worked on teams that held this narrative were working to engage in sensebreaking to change this account and replace it with a new story that would allow for PAs to conduct patient assessments. One PA noted that it was likely that the doctor that held this narrative most strongly was taking a different job. The PA held out hope that the new leadership of the team would have a different view of the role of the PA.
A final narrative that was commonly held by doctors in this study was that the PA profession should be just like the medical profession. If doctors take five steps of training to become fully qualified, PAs should as well. Doctors frequently requested information from PAs about their path for advancement within the NHS. These doctors struggled to understand why PAs would choose the profession. They felt that the inability of the PA to rise to the level of a consultant meant that smart PAs had wasted their talents and should have gone to medical school instead. This narrative was likely furthered by the personnel structure of the NHS which does not recognize increasing clinical competence on its own as a reason to provide a promotion.

Promotion happens when a person either meets a specific training benchmark or when the person takes on additional responsibilities that are different from his or her initial responsibilities in the NHS. Nurses obtain promotions by becoming supervisors, administrators or trainers. Doctors obtain promotions by finishing particular training programs (e.g., foundation years or SHO training) or accepting other leadership roles after they become consultants. Simply becoming a more knowledgeable and experienced gastroenterology PA would not induce a promotion. In addition, doctors had difficulty understanding why PAs would want or need to work to maintain their generalist medical knowledge and skills. Doctors in secondary care, by definition, become increasingly specialized as they go from medical student to junior doctor to specialist, and in some cases, subspecialist. PAs struggled to explain the reason for the maintenance of their general knowledge base and the pleuripotent role that the PA can provide in the health system. Because the goal of the secondary care doctors had always been to become a genuine expert in a specific field of medicine, these doctors could not envision a way to develop a role that did not share that goal.

When doctors clung to this narrative, it impeded the ability of the PAs to develop their role with support from the doctors. PAs wanted to demonstrate the benefits of having a generalist
medical provider on specialty teams. Unfortunately, the ability of the PAs to make this argument was limited by the vast difference between the PA and the doctor in status. PAs did not feel that they could confront consultants about this narrative. Several PAs expressed hope that as many more PAs are being trained and placed in the NHS that doctors will begin to understand that PA training and career progression are different for PAs than they are for doctors.

vi.  **Sensemaking is ongoing / iterative**

The process of sensemaking is not something people do once and then stop. Sensemaking is an iterative process in which people continually notice new cues that help them understand how other people view the identities they have constructed and enacted. People act within their environments, evaluate the responses of others, discuss situations with other people, and form or revise narratives that seem to explain their world. People with insight engage in this process continually. They seek feedback on whether their understanding of their identity and their explanatory narrative is accurate in the eyes of others. Once they have evaluated the feedback they have received, they may modify their behavior to influence the view other people hold of them, their identity and their actions.

PAs and doctors in this study reported being stimulated to engage in sensemaking routinely. The high level of turnover within the medical teams meant that new people were frequently coming onto the teams and asking questions about the PAs, who were often considered a novelty. Once the PAs had formed their identity with one group of doctors and begun to enact it, a new group of doctors would appear. Attempts to enact the role in the same way they had been doing previously were sometimes successful. However, particularly if a new consultant
came onto the team, sometimes the PAs had their identity and role challenged substantially. Some consultants were uncomfortable with the freedom the PAs had on the team and others were uncomfortable with the restrictions on the PAs. The PA would have to adapt to the new consultant’s preferences, and in the midst of that, engage in sensemaking about the new way the PA was enacting the role with other members of the team.

Doctors also engage in ongoing sensemaking as they work with PAs. New situations arise clinically and administratively that call for these supervising doctors to make decisions about how they will interact with PAs, represent PAs to others and how they will help shape the identity of the PAs on their service. Some doctors in this study reported just this experience. When the PAs arrived, they had one idea about who the PA would be on the team. As they began to understand more about the training of the PA, the administrative and legal constraints of the PA, and as they saw the PA in action, their view of the PA changed. In many cases, these doctors expanded their view what a PA could and should be able to do for the team. They had entered the situation with low (or no) expectations about the training, knowledge and potential contribution of the PA and had their mind changed by working alongside the PA. In other cases, doctors had overestimated the knowledge and skills of the PA. This was particularly true when the PA was a newly-graduated PA. Seeing their knowledge level forced the doctors to change their view of what a PA could do at this point in time. Some doctors had high expectations for what a PA could do on their services, and the PAs justified this confidence with their skills and knowledge, but in the end, the PA was restricted from performing certain tasks by legal or administrative rules. In these cases, the doctors expressed indignation on behalf of the PA that the PA was not allowed to be of maximal use to the clinical service.

When PAs become regulated and are allowed to prescribe medications and order radiologic investigations, it will be very interesting to see how the sensemaking around the characteristics
of the role changes. As the PAs add new responsibilities which they are legally entitled to perform, new sensemaking about the role will occur. PAs, doctors, nurses, allied health professionals and patients will all consider anew how a PA is different from a doctor. Even PAs who are relatively settled in their role and who may not be engaging in sensemaking regularly anymore will be forced to consider re-developing and newly enacting their identities when their scope of practice is formally expanded.

vii. Future sensemaking for PAs, doctors and hospital trust administrators

When examining this data through the sensemaking lens, it becomes clear that PAs, doctors and hospital trusts could be encouraged in their sensemaking attempts. For each of these groups, having an opportunities to interact with others in their same role across the country would be beneficial. Some of the PAs in this study have already realized that speaking to other PAs who work in secondary care about how they approach PA role issues is helpful. They find practical solutions when they interact together, and also find some catharsis in discussing the issues with others who are in the same situation. PAs find these opportunities to interact at the annual PA conference at the Royal College of Physicians, reunions with classmates from PA school and in the halls of their own hospitals when they see PAs on other specialty teams. PAs also find support and meaningful discussion on social media and in returning to their PA programs to teach. Trusts and doctors should allow PAs time to be with other PAs in a professional setting. Allowing them study leave to attend the PA conference and time to contribute to the education of other PAs will stimulate the deep thinking about their professional role that is needed as the profession establishes itself in the UK.
PAs can find each other much more easily than doctors who work with PAs can find other doctors who work with PAs. These doctors are spread across the country and work in more than thirty medical specialties. In some cases, there is only one PA in a particular specialty in the entire country. Because most doctors spend their academic time at conferences within their specialty, unless they decide to attend a conference specifically about PAs, they are unlikely to ever meet each other. Doctors may have some opportunities to meet other doctors who supervise PAs if their trust employs PAs across multiple specialties. Having a chance to discuss the role of PA supervisor would likely be satisfying to these doctors. They could share ideas for their administrative and educational challenges with the PA role and find solutions to problems they encounter as they seek to develop PAs as members of the medical team. Right now, few formal venues exist for these doctors to engage in sensemaking together. A potential solution is for the Faculty of Physician Associates (FPA) to offer meetings for doctors who work with PAs either at the PA annual conference or at another time during the year. PA champions who have been particularly successful at integrating PAs onto their clinical services could lead sessions or discussions to encourage useful dialogue that promotes practical solutions to the difficulties these supervising doctors face.

For this study, we did not interview health service administrators. Doctors and PAs in this study shared stories of how interactions with administrators had either paved the way or blocked the way for success of the PA experiment in their hospital trust. Like doctors, hospital trust administrators could likely benefit from encounters with others in their positions in trusts that also employ PAs. Perhaps by meeting together, they could solve some of the persistent issues surrounding information technology and employee evaluations for PAs hired in their hospital trusts. As with doctors, the FPA should consider hosting events for these leaders. If
these leaders could solve some of the difficulties faced by doctors and PAs, PAs across the UK would benefit.

E. Study Limitations

The main limitations of the study are inherent to the study design. Some of these limits have been described above in the description of grounded theory methodology. The greatest limit to this methodology is the inductive approach. With deductive reasoning, there is less room for error. It is easy to “find what you are looking for” in a study based on a relatively small number of interviews, with an investigator who has her own potential biases. The investigators attempted to mitigate their biases with the tools described in the “Ensuring Trustworthiness” part of the Methods section of this paper. Another potential limitation is an overly homogenous set of informants which may limit the number of important themes raised. While qualitative research does not purport to recruit strictly representative samples of the population being studied, the PAs in this study were relatively representative of the PA population when it came to gender and specialty. Unfortunately, only three of the five universities which had eligible graduates at the time of recruitment for this study were able to provide graduates to participate. In addition, while a majority of UK PAs work in southeast England, this area of the UK is still over-represented in the study compared to other parts of the country.

Another limitation to this study is that six of the eight PA participants were graduates of the same physician associate training program. Extensive efforts were made to get graduates from all five training programs that would have had eligible graduates, but ultimately, only three universities were represented. It is possible that had more universities been represented that
the results, particularly regarding the PAs’ view of the PA role would have been more heterogeneous.

A final limitation is that the participants in this study were all volunteers. While qualitative research does not purport to be representative, it strengthens the study to have heterogeneity among the participants. In this case there was no heterogeneity when it came to volunteering for the study. All were volunteers. It is possible that those who volunteered for the study have different characteristics than non-participants, such as enthusiasm for the PA profession or being more highly motivated to share opinions. It is unknown what effect this bias had on the results of this study. Further research which is more representative will be helpful to either confirm or refute the findings of the present study.

F. Future Research

Nearly all questions about PAs in the UK are as yet unanswered, as is demonstrated by the small number of papers reviewed in Chapter 2. In addition, the papers that have been published in the UK up to this point have primarily included graduates from the few PA programs that started before 2015. We do not know if the training provided at the large number of new PA programs is comparable to that of the original programs, so much of the research already conducted may have to be repeated once the newer programs graduate enough new PAs to perform these assessments in a meaningful way. One of the limitations of this study was that graduates from only three programs were included (despite attempts to recruit participants from the other two programs that had eligible graduates). It is unknown whether graduates from other programs and their employers would have had a different perspective on the role and its implementation. Further research into this question would be useful.
As usual, each research study begets more questions. The findings from this study need to be tested in several ways to validate or disprove them. A quantitative study, most likely a cross-sectional survey with a nationally representative sample of doctors and PAs, could assess whether the barriers and facilitators found in this study are broadly shared. It would also be interesting to conduct a longitudinal study with a group of doctors and PAs about how their perceptions of the role change from the time the PAs start on the service to three years later, five years later, ten years later, etc. Further study on doctors who serve as PAs champions would be useful. Who becomes a PA champion? What are their motivations for becoming a PA champion? What factors enable champions to maintain that champion role, and are there factors that predict whether a doctor will persist in the PA champion role? What support from the hospital trust do PA champions need to be effective?

A question raised by both doctors and PAs interviewed in this study, and in the documents reviewed for the development of the semi-structured interview guide is “how can PAs advance in their roles over time?” In the UK, doctor progression through the ranks has a very specific path. Doctors particularly were mystified by the idea that there is no pre-specified career path for PAs. Understanding more about how PAs grow in their role over time and how hospital trusts and other administrative agencies allow the PA role to develop would be both interesting and informative to PAs, doctors, policymakers and PA educators. It is likely that this study would have to be conducted in 5-10 years from now because there are so few PAs that have been PAs for more than 2-3 years at this point.

While this dissertation was being composed, on October 12, 2018, the Conservative government of the United Kingdom announced its intention to regulate the profession. The government has not acted on this announcement at the time of this dissertation submission due to the work involved in removing the United Kingdom from the European Union. Once
regulation for PAs has been achieved, it would be very useful to study how regulation of the profession changes things for PAs and doctors. Does official recognition of the profession improve the willingness of doctors to work with PAs? Does regulation of the profession provide greater clarity for doctors and PAs alike about the scope of the role? Does the ability to prescribe and request radiologic investigations change the roles the PAs are allowed to hold on the team? Does regulation improve the reputation of the profession with junior doctors? Does regulation help PAs feel more confident in asserting their role within the team? Does regulation by the government mean that hospital trusts will set about to develop human resources and information technology policies that meet needs of PAs, the medical team and those who supervise PAs?
Implications of Findings and Recommendations

The current study was a small qualitative study designed to begin the process of understanding the barriers and facilitators to integrating the first UK-trained PA onto a secondary care service. Because of the choice of study design, the results are not generalizable. However, respondents consistently raised specific themes from their experiences that bear consideration for those thinking of bringing PAs onto a clinical service.

1. **Consider carefully how to leverage the unique aspects of the PA role instead of simply making the PA a ‘substitute’ for junior doctors.** Chief among these aspects is the continuity that the PA can provide both the medical team and the patients. Junior doctors rotate away within months of arrival on the service. Consultants sometimes share responsibility for covering the ward among several colleagues and therefore do not have much continuity with either patients or junior doctors. PAs who work on the same ward or set of wards for years at a time can provide institutional knowledge to the junior doctors. They can also provide continuity of care with the subset of patients that require frequent hospitalization for their illnesses.

   Another unique aspect of the PA role is that PAs are required to maintain their generalist medical knowledge. This stands in contrast to registrars and consultants who are constantly deepening their clinical expertise in one particular field of medicine. PAs may be able to help the team with a better understanding of medical management outside the specialty of the doctors on their team. This may be particularly true in surgery where surgical trainees are most focused on developing
detailed expertise in intraoperative care and may not be as interested in staying up
to date on the management of conditions such as diabetes or hypertension. When
a patient with such a condition is admitted to the floor after a surgical procedure,
the PA who has an incentive to keep up her generalist medical knowledge may be
better positioned to manage elevated blood sugars or pressures.

Finally, the PA can develop relationships of trust with consultants that SHOs will
never develop in their brief time on a clinical service. Working together over a
period of years allows the PA and the consultant to clearly understand the strengths
and weaknesses they each have. It allows them to develop trust based on caring for
patients together again and again. A longstanding working relationship is
particularly beneficial for allowing the consultant to assess whether the PA knows
his or her limitations and whether they consistently put patient safety first.
Working together over time also allows the PA to anticipate the evaluation and
management strategies the consultant typically uses to manage patients with
specific conditions. The PA then can expedite the patient’s care, confident that his
or her management decisions will meet with the approval of the consultant.

2. **Have a clear plan for introducing the role of the PA to the entire healthcare and
administrative team.** Services should consider using high-status doctors to
introduce the role through personal introductions, written communications,
announcements, etc. to impart their credibility to the new role. The introduction of
the PA role needs to be ongoing because of the high rates of turnover among junior
doctors, nurses and other staff. Information about the role should be included in
orientation materials given to new members of staff.
3. **Think carefully about how to train PAs over time to grow in the role.** While some of the post-qualification training that PAs receive can be the same that is currently provided to doctors-in-training, PAs also need opportunities to maintain their generalist knowledge and skills. They also may need training in administrative tasks in order to allow them to be of most use to the team. According the annual census of PAs conducted by the Faculty of Physician Associates, 28% of PAs report that they are allowed no paid time for continuing medical education activities, and 57% report that they would have to bear the full cost of any conferences or other continuing medical education activities. Hospital trusts should consider providing time for paid study leave and funds to allow the PA to attend educational events at minimal expense to the PA, the same way that doctors and nurses get leave time and funds. In addition, supervisors should ensure that opportunities for PAs to learn, both onsite and offsite, not be strangled by the clinical workload. Several participants believed that PAs were disadvantaged compared to junior doctors by the clinical workload. Often PAs were left behind to work on the ward while junior doctors went to learning sessions. While the hospital trust certainly has a responsibility to make sure that junior doctors are able to avail themselves of learning opportunities, the responsibility for ensuring that the doctors are free to go should not mean that PAs never have the chance to attend educational sessions.

4. **PAs need to take initiative for the role to be accepted and to grow.** At several points in this study, both PAs and doctors called attention to the importance of PAs taking initiative to ensure the success of the PA experiment. PAs took initiative to explain their role to others and to educate doctors about their training and how it might be deployed for the betterment of the team. They also took the initiative to
propose ideas about how they might develop the role and honed their knowledge and skills to the point that they were able to teach junior doctors. If PAs will not advocate for themselves and their profession, how can they expect others to advocate for them?

5. **PAs need to acknowledge the limits of their training, experience and knowledge to ensure that they do not put the lives of patients in danger.** Several PAs and doctors commented that while it seems counterintuitive, a PA who is able to say “I don’t know” develops more trust with his or her doctor than those who try to fake knowledge. Doctors want to know that the PA will always put the truth and the welfare of the patient ahead of their own ego. Doctors need to know that PAs are always telling them the truth, no matter how unpleasant, in order to give the PA more autonomy.

6. **PAs should consider how to maintain expertise in prescribing and choosing the best radiologic tests while waiting for the legal environment to change.** PAs are educated in pharmacology, microbiology and radiology, but some PAs in this study found it challenging to maintain those skills when they were not permitted to exercise them. The teams that were most successful in helping PAs retain their skills in these areas were those that allowed the PAs to be involved in decisions to determine the course of care for the patient, including decisions about prescribing and radiologic investigations. A medically-trained member of the team would then actually prescribe the medication or request the radiologic study.

7. **Hospital trusts should identify a “PA champion” prior to recruiting PAs.** The data suggest that champions are the most effective when they are high status people within the organization (consultants and high level administrators) whose opinion
matters to others. In addition, they should be people who are excited about the possibilities of the PA role, who have time and energy to devote to being a champion, and who have strong interpersonal skills. Doctor champions are particularly effective for setting expectations for the PA role with junior doctors and medical students. Consultants can also be helpful in advocating for the role with other consultants in a way that no one else can be.

8. **PAs and doctors should continue to advocate for PA regulation.** Every participant in this study discussed how the lack of PA regulation limits the profession and the ability of hospital trusts to maximize their use of PA services. PAs and doctors, therefore, need to continue to advocate for regulation with the government. On October 12, 2018, (after the interviews for this study had been completed) the government indicated for the first time that they will start a process to regulate PAs. Unfortunately, due to the current instability of the government, whether this initiative will move forward remains to be seen.102 Even now that the government has indicated a willingness to regulate PAs, the details of these regulations have not begun to be developed. No legislation has been introduced. PAs and the doctors who work with PAs need to be active voices in the process of developing the regulations, instead of leaving this job to those who do not always understand the training and the role of the PA.

9. **Administrative issues should be addressed before or at the time the PAs are hired.** The data from this study suggest significant frustration with the lack of administrative structures to help PAs fit into the NHS. Doctors and administrators did not have an obvious means to conduct performance evaluations because there were no criteria on which to judge the PAs. In addition, it was sometimes difficult to
get the proper access for PAs to the electronic medical record and other information technology resources. The most successful groups had overcome these barriers by devising their own structures to support PAs within the hospital trust. However, trusts should consider these issues before bringing a PA aboard and may also consider consulting hospital trusts that have larger numbers of PAs, such as Surrey and Sussex Healthcare NHS Trust, about solutions they have developed. It is possible that in the future, after PAs are formally recognized and regulated, that these administrative structures will be developed by the NHS for deployment nationwide, but for the foreseeable future, these processes will be left up to individual trusts.

10. **PA educators need to anticipate the needs of the profession and the NHS as they educate students.** There are three implications from the data of this study for PA educators. First, many PAs discussed how important it was that they had a strong sense of what the PA role should be when they started in their posts. Having this understanding allowed them to advocate for an appropriate scope of practice. As made clear in the data above, some PAs were given an exceedingly narrow scope of practice – much less than what they were trained for – and others were given too much responsibility for their level of training. Having a clear sense of what was appropriate for a PA was crucial in the attempts of these PAs to obtain an appropriate scope of practice. For most of these PAs, their understanding of the role was developed in PA school. All PAs in this study went to PA school at universities that had PAs on the faculty of the training program and where the particulars of the PA role were specifically taught. However, as PA programs have proliferated across the UK, many programs do not have PAs as members of the
faculty and may not be providing explicit training to students about the PA role.\textsuperscript{103} Data from this study are clear that it is exceedingly important not only to PAs themselves, but also to doctors and patients, that PAs are clear on their role. These concepts should be taught explicitly to students in each UK PA program.

As discussed above in \#5, the ability of PAs to know what they know and to know what they do not know is critical for both patient safety and to develop a trusting relationship with consultants. Both PAs and doctors commented that this ability to recognize the limits of their own knowledge was essential to build trust. PA programs should take opportunities to teach this skill, particularly during case-based teaching sessions and while the students are on clinical placements.

Finally, many of the doctors in this study commented favorably on the positive personal characteristics of their PAs. Even the doctor who felt that PA practice should be very restricted noted that his PA was intelligent, honest, friendly, hard-working and compassionate. Many of the doctors in the study recognized that strong interpersonal skills were among the biggest facilitators to the PAs being successfully integrated onto the team and being accepted by patients and staff. This finding has implications for selection of students into PA programs. It suggests that PA programs need to assess personal characteristics associated with success in the medical field when they are selecting students for entry to the program. While nearly anyone can be taught the basics of physical examination, it is very difficult to teach personal characteristics such as honesty, compassion, selflessness and amiability.
G. Grounded Theory Arising from the Current Study

Grounded theory is a study methodology used when little is known about a phenomenon. Investigators conduct interviews with knowledgeable participants to better understand their perspective on what they are experiencing with the goal of beginning to develop a theory that explains some of the experience of the participants. This theory can then be tested by further research using a variety of study methods.

The theory that arises from this study is that a clearly defined role is essential to effective integration of PAs within the NHS. The matching theoretical codes from both the “barriers” and “facilitators” arms of this study support that role clarity is the essential feature. Based on this theory, and the data collected in this study, I have made the following predictions. These predictions will need to be tested by further research.

1. When the PA role is clearly defined and communicated, it allows for:
   a. Health system employees and patients to understand what PAs can do for them
   b. The PAs to spend their time taking care of patients rather than explaining themselves
   c. The PAs to spend their time taking care of patients rather than fighting with others to establish their role
   d. Structures to be developed to support the use of PAs by the health system: evaluation forms, IT permissions, development and skills training plans, etc.
   e. The PAs to capitalize on the unique characteristics of their profession and to bring the benefits of these characteristics to patients and medical teams
   f. Avoidance of confusion about the role of the PA compared to other roles in the NHS
g. The PA role to be evaluated for effectiveness across settings. If the role is not clearly defined, program evaluations will be limited by the heterogeneity of the PA role in different hospital trusts.

h. The PA role to be developed over time. When everyone knows what the role is, people can think together about how the role might change and grow.

i. Students studying to be PAs to have a clear idea of the training they need to become successful PAs. Educators preparing student PAs can develop appropriate curricula. Well defined educational standards can also increase the clarity of the PA role, especially as it diffuses across the health system.

j. A clear PA role aids in development of regulations for the profession. It is easier to design appropriate regulatory structures when you can explain what the role is and envision what it may become.

2. When the PA role is **not** clearly defined and communicated:

   a. The PA role will end up being defined locally, and therefore, heterogeneously. This heterogeneity will cause confusion across the health service, especially as doctors and nurses rotate between hospitals.

   b. The PA will spend a lot of time explaining the role to others instead of caring for patients.

   c. The PA will need to spend time establishing the role with other health professionals instead of caring for patients.

   d. The PA will spend a lot of time dealing with administrative issues (evaluations, IT, development plans) instead of caring for patients.

   e. The PA will be viewed by some as a permanent medical trainee.
f. There will be frustration on the part of PAs and on the part of others due to mismatched expectations for what the role should entail.

g. The likelihood that PAs will have turnover due to mismatched expectations increases.

h. The development of the role over time will be difficult if the baseline expectations for the role have not been characterized. It is difficult to build a new role from an uncertain foundation.

i. PA students will have difficulty knowing how to train for the role. Education for the role will be heterogeneous, and in some cases potentially inadequate, because educators do not have a clear idea of the standard their students need to meet to be safe and effective PAs. When PA schools are not training their students in a standardized way, the heterogeneity of new PA graduates will only further complicate the process of developing a shared understanding of the role within the NHS.

j. It is difficult to develop regulatory structures when the PA role is poorly characterized.

H. Conclusion

This is the first study to document the barriers and facilitators to the integration of UK-trained PAs onto a secondary care service in the British NHS in the view of the PAs themselves and the doctors with whom they work. Nineteen primary barriers and facilitators were identified. Axial and theoretical coding of both the barriers and facilitators found that the primary unifying theme on both sides was clarity of role. When PAs and their doctors were clear
on the role of the PA within the medical team, the integration of PAs was much easier than when the role of the PA was not clearly established within the team. The findings of this grounded theory study, which does not purport to be representative, should provide guidance to those wishing to conduct more representative studies of this population. While the research on this topic is ongoing, the findings of this study do suggest some approaches that hospital trusts employing PAs may wish to consider as they structure PA job posts.
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Figure 1 - Review of the Literature on “Physician Assistant” or “Physician Associate”
Figure 2 - Data Collection and Analysis Model

**Type of Data**

**Phase 1**
- Documents: Websites, presentations, posters, news media (articles, videos, etc.) regarding PA Implementation

**Phase 2**
- Interviews with PAs
- Interviews with Doctors

**Analytic Steps and Relationships**

- Open coding of documents
- Triangulation across documents
- Update Interview Guide
- Open Codes
- Axial Coding
- Axial Codes
- Theoretical Coding
- Contribution to Theory
Figure 3 – Barriers and Facilitators to the Integration of the First UK-trained PA on a Secondary Care Service in the United Kingdom: Open, Axial and Theoretical Codes
Table 1 - Concepts discovered in review of documents, websites, videos, presentations, posters, news articles, and consultation papers outside the peer reviewed literature

<table>
<thead>
<tr>
<th>Lack of understanding of the PA role causes variable expectations for the role among those in the health service</th>
<th>Source</th>
</tr>
</thead>
</table>
| Lack of knowledge and understanding by those in other professions about the PA role | ▪ English Pilot Project
▪ Scottish Pilot Project
▪ “A day in the life of a physician associate” — Video from Health Education West Midlands
▪ “Clinical supervision (of PAs): the physician’s perspective” — conference presentation by Dr. Natalie King - Kent, Surrey and Sussex School of PAs
▪ “The physician associate will see you now” — case study from NHS England |
| A clear role for the PA provides the foundation for a successful integration of the PA onto the service | ▪ English Pilot Project
▪ Scottish Pilot Project
▪ “Physician Associates: an overview” — conference presentation by Jeannie Watkins, PA-R, president of the Faculty of Physician Associates
▪ “Developing the role of the physician associate: the SASH experience” — conference presentation by Dr. Natalie King |
| PAs do not fit into traditional medical hierarchies which causes confusion for others | ▪ “Physician associates in the UK” — education document from British Medical Association
▪ “NHS patients to be seen by ‘doctors on the cheap’” — News article in The Independent
▪ English Pilot Project
▪ Scottish Pilot Project |
| PAs may be perceived by doctors as a threat to their role | ▪ “Are Physician Associates doctors on the cheap?” — Letter to BMJ
▪ “Physician associates — a very mixed experience” — Junior doctors committee of the British Medical Association
▪ “Physician Associates — junior doctors’ perceptions ahead of deployment” — Abstract presented at British surgical conference
▪ “The race-to-the-bottom speeds up” — blogpost by professor of Neurology at Queen Mary University
▪ English Pilot Project
▪ Scottish Pilot Project |
<table>
<thead>
<tr>
<th>Topic</th>
<th>References</th>
</tr>
</thead>
</table>
| PAs may be perceived by nurses as a threat to their role or to an advance practice nurse role | ▪ English Pilot Project  
▪ Scottish Pilot Project  
▪ “Physician associates plough the same furrow as advanced nurse practitioners” - Opinion article in *Independent Nurse*\(^ {114} \)  
▪ “Response from the Royal College of Nursing Wales to the Health, Social Care and Sports Committee's Inquiry into Medical Recruitment – Royal College of Nursing Wales position paper\(^ {115} \) |
| PA may be hired by someone other than the people with whom they will actually work. The people with whom the PA actually work does not want the PA or does not know how to work with the PA | ▪ English Pilot Project  
▪ Scottish Pilot Project |
| The integration of a PA onto a service goes more smoothly if there is a formal process to introduce the role and the individual to the hospital staff | ▪ “Pioneering the role of physician associate” – Case studies by Royal College of Physicians\(^ {116} \)  
▪ “Models of staffing: physician associates” – Dr. Natalie King – Presentation at Society of Acute Medicine\(^ {117} \) |
| When a PA comes on board, there is substantial variability in the expectations for what they can do among doctors, nurses and other staff | ▪ English Pilot Project  
▪ Scottish Pilot Project  
▪ “Meet the new team players: physician associates” – *Emergency Nurse*\(^ {118} \) |
| Having PAs meets a need for more medically-trained staff on overburdened clinical services | ▪ “Investing in people for health and healthcare” – Health Education England\(^ {119} \)  
▪ “Physician associate as a health career” – National Health Service\(^ {120} \)  
▪ “Developing the PA role: the SASH experience” – conference presentation by Dr. Natalie King\(^ {108} \) |
<table>
<thead>
<tr>
<th>Concept</th>
<th>Source</th>
</tr>
</thead>
</table>
| The NHS needs new clinical roles to help meet all the patient needs | ▪ “Investing in People for Health and Healthcare: workforce planning for England” – Health Education England\(^{119}\)  
▪ “Physician associates: how should psychiatry respond to the challenge?” – News article from Royal College of Psychiatrists Newsletter\(^{121}\)  
▪ General Practice Forward View – white paper – NHS England\(^{122}\)  
▪ “Staffing crisis laid bare as new BMA analysis shows that three quarters of medical specialties face shortage of doctors” – BMA News\(^{123}\) |
| PAs may provide continuity of care in a way that junior doctors cannot | ▪ “Physician associates: the junior doctor perspective” – Video from Royal College of Physicians\(^{124}\)  
▪ “Pioneering the role of physician associate” – Case studies by Royal College of Physicians\(^{116}\)  
▪ “A day in the life of a physician associate” – Video from Health Education West Midlands \(^{104}\)  
▪ English Pilot Project  
▪ Scottish Pilot Project |
## Table 1 (Continued)

<table>
<thead>
<tr>
<th>Concept</th>
<th>Source</th>
</tr>
</thead>
</table>
| The ability of the PA to have good teamwork skills can make or break the integration of the first PA on a service | ▪ “Pioneering the role of physician associate” — Case studies by Royal College of Physicians 116  
▪ English Pilot Project  
▪ Scottish Pilot Project                                                                                   |
| Developing trust between the PAs and the doctors is essential to a good working team | ▪ “Employer’s guide to physician associates” — Faculty of Physician Associates / Royal College of Physicians 125  
▪ “Developing the role of the physician associate: the SASH experience” — conference presentation by Dr. Natalie King 108 |
| Doctors are reassured when they see that the PA recognizes the limits of their own knowledge and puts patient safety first | ▪ “A day in the life of a physician associate” — Video from Health Education West Midlands 104  
▪ “Code of conduct for physician associates” - Faculty of Physician Associates / Royal College of Physicians 126  
▪ English Pilot Project  
▪ Scottish Pilot Project                                                                                   |
| An effective champion (usually a doctor) is key to the successful integration of PAs | ▪ English Pilot Project  
▪ Scottish Pilot Project  
▪ “Developing the role of the physician associate: the SASH experience” — conference presentation by Dr. Natalie King 108 |
| Champions are often people who have had prior exposure to the PA role | ▪ English Pilot Project  
▪ Scottish Pilot Project  
▪ “Pioneering the role of physician associate” — Case studies by Royal College of Physicians 116 |
| The PA role can evolve over time if the team is willing to allow the PA to grow | ▪ “Employer’s guide to physician associates” — Faculty of Physician Associates / Royal College of Physicians 125  
▪ “First year post-qualification guidance for PAs” - Faculty of Physician Associates / Royal College of Physicians 127  
| When PAs are allowed to show what they can do they often win over the doubters. | ▪ “A day in the life of a physician associate” — Video from Health Education West Midlands 104  
▪ Models of staffing: physician associates” — Dr. Natalie King – Presentation at Society of Acute Medicine 117 |
- English Pilot Project
- Scottish Pilot Project

| There are always both unanticipated benefits and unanticipated problems with bringing the first PA on board | “Employer’s guide to physician associates” – Faculty of Physician Associates / Royal College of Physicians 125
|                                                                 | “Developing the role of the physician associate: the SASH experience” – conference presentation by Dr. Natalie King 108 |
Table 1 (Continued)

**PAs need supervision due to their expedited training**

<table>
<thead>
<tr>
<th>Concept</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will the education UK PAs receive be sufficient to provide safe patient</td>
<td>▪ “Competence and curriculum framework for the physician assistant” –</td>
</tr>
<tr>
<td>care?</td>
<td>Department of health guidance for development of PA education 62</td>
</tr>
<tr>
<td></td>
<td>▪ “Accreditation standards for physician associate education” – Royal</td>
</tr>
<tr>
<td></td>
<td>College of Physicians 63</td>
</tr>
<tr>
<td></td>
<td>▪ “Are Physician Associates doctors on the cheap?” – Letter to BMJ 110</td>
</tr>
<tr>
<td></td>
<td>▪ “Matrix specification of core clinical conditions for the physician</td>
</tr>
<tr>
<td></td>
<td>assistant by category of level of competence” – Department of Health 128</td>
</tr>
<tr>
<td>Initial level of supervision needed for newly graduated PAs is high</td>
<td>▪ “Employer’s guide to physician associates” – Faculty of Physician</td>
</tr>
<tr>
<td></td>
<td>Associates / Royal College of Physicians125</td>
</tr>
<tr>
<td></td>
<td>▪ “Competence and curriculum framework for the physician assistant” –</td>
</tr>
<tr>
<td></td>
<td>Department of health guidance for development of PA education 62</td>
</tr>
<tr>
<td></td>
<td>▪ “Clinical supervision (of PAs): the physician perspective” – Dr.</td>
</tr>
<tr>
<td></td>
<td>Natalie King - Kent, Surrey and Sussex School of PAs 105</td>
</tr>
<tr>
<td></td>
<td>▪ “First year post-qualification guidance for PAs” - Faculty of</td>
</tr>
<tr>
<td></td>
<td>Physician Associates / Royal College of Physicians127</td>
</tr>
<tr>
<td></td>
<td>▪ “Physician Associates: an overview” – Conference presentation by</td>
</tr>
<tr>
<td></td>
<td>Jeannie Watkins, PA-R, President of Faculty of Physician Associates 107</td>
</tr>
</tbody>
</table>
Table 1 (Continued)

<table>
<thead>
<tr>
<th>Concept</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of formal recognition of the role is a barrier to fully using PA skills</td>
<td></td>
</tr>
</tbody>
</table>
| Inability to prescribe medications and order tests with radiation limits the role | ▪ English Pilot Project  
▪ Scottish Pilot Project  
▪ “Physician associates may be given prescribing powers, says Department of Health” – news article in *Pulse*¹²⁹  
▪ “Physician associates in York and the Humber” – program evaluation by Vale of York Clinical Commissioning Group¹³⁰ |
| Lack of regulation inhibits full use of the role | ▪ “Faculty of Reproductive and Sexual Health consultation response” – consultation document - Faculty of Reproductive and Sexual Health¹³¹  
▪ English Pilot Project  
▪ Scottish Pilot Project |
Table 2 – Characteristics of Study Participants

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Location</th>
<th>PA Gender</th>
<th>Doctor Rank / Gender</th>
<th>Group vs Solo PA</th>
<th>PA Training Univ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical</td>
<td>SE England</td>
<td>Female</td>
<td>Consultant / Male</td>
<td>Solo</td>
<td>A</td>
</tr>
<tr>
<td>Medical</td>
<td>SE England</td>
<td>Female</td>
<td>Consultant / Male</td>
<td>Solo</td>
<td>A</td>
</tr>
<tr>
<td>Medical</td>
<td>NW England</td>
<td>Male</td>
<td>Consultant / Male</td>
<td>Solo</td>
<td>B</td>
</tr>
<tr>
<td>Medical</td>
<td>SE England</td>
<td>Female</td>
<td>Registrar / Male</td>
<td>Group</td>
<td>A</td>
</tr>
<tr>
<td>Medical</td>
<td>SE England</td>
<td>Female</td>
<td>Consultant / Male</td>
<td>Group</td>
<td>A</td>
</tr>
<tr>
<td>Surgical</td>
<td>SE England</td>
<td>Female</td>
<td>Registrar / Male</td>
<td>Solo</td>
<td>A</td>
</tr>
<tr>
<td>Surgical</td>
<td>SW England</td>
<td>Male</td>
<td>Registrar / Male</td>
<td>Solo</td>
<td>C</td>
</tr>
<tr>
<td>Surgical</td>
<td>SE England</td>
<td>Female</td>
<td>Registrar / Female</td>
<td>Group</td>
<td>A</td>
</tr>
</tbody>
</table>

**University of PA training** – the universities are not named, however, each letter (A, B, C) represents a separate university.
### Table 3 - Projected and Found Barriers to the Integration of the First UK-trained PA on a Secondary Care Service in the British National Health Service

<table>
<thead>
<tr>
<th><strong>Projected Barriers:</strong></th>
<th><strong>Found Barriers:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Prejudice against PAs</td>
<td>Found in 2 cases only</td>
</tr>
<tr>
<td>Inability to prescribe medications and request tests with ionizing radiation</td>
<td>Found</td>
</tr>
<tr>
<td>PAs do not fit into traditional medical hierarchies which is confusion and frustrating to doctors, PAs, administration and other staff</td>
<td>Found</td>
</tr>
<tr>
<td>Lack of knowledge and understanding of the PA role by other professions</td>
<td>Found</td>
</tr>
<tr>
<td>No PA champion</td>
<td>Found - No PA champion. Also found – PA may have a champion, but he or she is not available, too busy, does not know how to effectively champion, or is of low status.</td>
</tr>
<tr>
<td>PA brought on by someone other than the person for whom they actually work. The person for whom the PA actually works either does not want the PA or does not know how to use the PA.</td>
<td>Found</td>
</tr>
<tr>
<td>PAs are a perceived as a threat to junior doctors</td>
<td>Not found</td>
</tr>
<tr>
<td>PAs are perceived as a threat to nurses</td>
<td>Not found</td>
</tr>
<tr>
<td>Poor quality of education / skills</td>
<td>Not found</td>
</tr>
<tr>
<td>Fear of what patients might think / patients express unhappiness about being seen by the PA</td>
<td>Not found</td>
</tr>
<tr>
<td>Individual PA factors as a barrier</td>
<td>Not found</td>
</tr>
<tr>
<td>Issue</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>PA not effective at working in a team</td>
<td>Not found</td>
</tr>
<tr>
<td>Not projected</td>
<td>PAs used as junior doctor substitutes and not viewed as having their own role</td>
</tr>
<tr>
<td>Not projected</td>
<td>Heavy clinical workload inhibits opportunities to develop the PA and the PA role despite the desire of both the consultant and the PA</td>
</tr>
<tr>
<td>Not projected</td>
<td>PAs used to perform clinical tasks, clerical tasks and procedures only. Minimal opportunities afforded for assessing patients</td>
</tr>
<tr>
<td>Not projected</td>
<td>Uncertainty about the proper scope of practice due to concerns regarding PA regulation</td>
</tr>
<tr>
<td>Not projected</td>
<td>Lack of administrative structure to support and evaluate PAs.</td>
</tr>
</tbody>
</table>
Table 4 - Projected and Found Facilitators to the Integration of the First UK-trained PA on a Secondary Care Service in the British National Health Service

<table>
<thead>
<tr>
<th>Projected Facilitators:</th>
<th>Found Facilitators:</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA role helps meet the needs of the medical team</td>
<td>Found</td>
</tr>
<tr>
<td>PAs are good at team work</td>
<td>Found</td>
</tr>
<tr>
<td>Trusting relationship between PAs and doctors</td>
<td>Found</td>
</tr>
<tr>
<td>PA education is of sufficient quality that the subsequent training can build on it</td>
<td>Found</td>
</tr>
<tr>
<td>Medical team appreciates continuity of care PAs provide</td>
<td>Found</td>
</tr>
<tr>
<td>Effective PA champion</td>
<td>Found</td>
</tr>
<tr>
<td>Champion has prior exposure to PA role</td>
<td>Found</td>
</tr>
<tr>
<td>PA with positive personal characteristics (hard working, takes initiative, gets along well with others, does not let ego get in the way of what is best for the patient)</td>
<td>Found</td>
</tr>
<tr>
<td>PAs know limits and put patient safety first</td>
<td>Found</td>
</tr>
<tr>
<td>PAs free up junior doctors to be allowed to take advantage of learning opportunities</td>
<td>Found</td>
</tr>
<tr>
<td>Giving the PAs a chance to show what they can do</td>
<td>Found</td>
</tr>
<tr>
<td>Not projected</td>
<td>PA has a clear sense of what the PA role should be (typically from their PA education)</td>
</tr>
<tr>
<td>Not projected</td>
<td>PA has some say in how the role develops</td>
</tr>
<tr>
<td>Not projected</td>
<td>Task variety helps the PA grow and stay motivated</td>
</tr>
<tr>
<td>Not projected</td>
<td>PA sees opportunity for growth in the role</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>Not projected</td>
<td>PA becomes skilled enough to teach others</td>
</tr>
</tbody>
</table>
Appendix 1 – Definition of Terms

Consultant - a fully-qualified specialist doctor. This doctor is responsible for teaching all the doctors in training and all the students on the clinical service. Typically also has substantial administrative and research responsibilities. May not necessarily round on all the patients daily – may leave that to the registrar. Similar to an “attending physician” in the United States.

Deanery – The regional health education authority in charge of the training of doctors. Deanerries manage the medical education funds given by the government to support the training of doctors. They place junior doctors in their rotation sites.

Foundation doctors – Doctors in their first two years of training after graduation from medical school. Similar to medical interns in the United States.

Junior doctors - Technically means all doctors still in training, but is more colloquially used to describe foundation doctors and senior house officers. Not generally used to refer to registrars, although technically registrars are still in training.

National Health Service (NHS) - The health system which provides medical care to all people living legally in the United Kingdom. The care provided is free, with the exception that people with higher incomes do pay a small co-pay for medications. Visits with health professionals, hospitalizations, and surgeries are all free. Services are organized on a geographic basis, first by country within the UK (NHS England, NHS Scotland, etc) and then within smaller local regions as well.
**Physician Associate** (UK) - Physician Assistant in the US. A medical professional with 2 years of additional training in medicine after graduation from university with a bachelor’s degree. PAs practice medicine with general supervision from doctors. When PAs are referenced in this document, I am referring to UK-trained PAs unless I specify that the PAs are US-trained PAs.

**Primary Care and General Practice** - Family Medicine in the US. General practice doctors do serve a much stronger gatekeeper function in the UK than in the US. Patients cannot directly seek a specialist. However, they can present to Emergency Departments and potentially access secondary care / specialty services directly if they are sick enough to require admission to the hospital.

**Registrar** - The most senior level of doctor-in-training within the British system. These doctors are specialists in their field and do all their clinical work in that field (nephrology, endocrinology, orthopedics, etc). Typically, a registrar is the most senior person caring for patients and supervising junior doctors and PAs on the hospital wards. Consultants do not necessarily round with the team each day. Somewhat like a fellow in the US system, although registrars have more responsibility than a fellow in the US.

**Rotations / Placements** – Doctors-in-training, medical students and PA students all rotate through different hospitals and specialty services as part of their training. This system is designed to help give each trainee broad exposure to different types of patients and different specialty approaches to care. The trainee may stay with a service for as little as one month or as much as six months depending on their program and their level of training. While this system is
excellent for providing general medical or surgical training, it does mean that there are not a consistent group of medical providers working together over time and that patients may never see the same practitioner twice.

**Secondary Care** - all non-primary care services, excluding ultra-specialized tertiary care units. These services are often hospital-based, but also include outpatient specialty care (e.g. outpatient appointments with Neurology, Orthopedics, Psychiatry, etc.)

**SHO / Senior House Officer** - a doctor-in-training who is not in the first or second year of training, but is also not in the final years of specialization. Like a “senior resident” in the United States. These doctors rotate from specialty to specialty within the internal medicine or surgical realm.

**Statutory Regulation** - laws which determine the practice of various professions. These laws protect the title (someone who is not a nurse may not say she is a nurse, for example), set standards for entering and continuing in the profession and have the power to remove the right to practice from an individual. In the UK currently, there are no regulations about Physician Associates. The title is not protected and it is legally impossible to strip a PA of the right to practice. For the last seven years, Parliament, run by the Conservative Party has believed that the market will regulate PAs and that patients will simply stop going to see an individual PA if the patient is not satisfied with the care they received on a previous occasion. More recently, the Conservative Secretary of State for Health has indicated an interest in potentially granting statutory regulation to PAs. Only professions with statutory regulation may prescribe
medications and order tests that use ionizing radiation. Therefore, PAs currently cannot

prescribe or order radiologic tests

**Trust** - An organization responsible for all care other than primary care for a specific geographic region. Trusts are similar to US regional health systems. A trust hires healthcare workers, establishes clinical policies, is responsible for the health budget for their system, provides for all facilities, coordinates transfers of care if needed, etc.
Appendix 2 - Semi-structured interview questions

Based on the literature on implementation, the results of the program evaluation when US-trained PAs were brought over to the UK, the review of documents that was completed for this study and on my experience as a PA and PA educator, I develop a question list for doctors and PAs. The doctor and PA questions are parallel to each other to improve triangulation (ex: in both interviews, question 4 is about expectations).

Semi-structured interviews have a degree of flexibility on the part of the interviewer to follow interesting and insightful topics raised by the participants, so these question lists were used as a starting point for the discussion with the participants.

Questions for doctors: (not all questions asked of all participants)

1. Tell me about your training and clinical background.
2. How did you first come to work with a PA?
3. Thinking back to the time when your PA started to work with you, how did things go?
4. Thinking back to the time when your PA started to work with you, what did you expect the PA to do on the team? (be specific) How did your expectation compare to what the PA does on your team now?
5. How were your expectations and the PA’s expectations for the role of the PA on the team similar and different?
6. How did you introduce the idea of using PAs to nurses, junior doctors, patients, other staff?
7. How did other health professionals respond to bringing PA on board? What do you think caused their responses?
8. How has the role of the PA on your team evolved over time?
9. Who advocates for the PAs or having PAs on the team?
10. How did you train PAs to be of more use to your team?
11. How has the level of trust between you and the PAs changed over time? What contributed to that trust (or lack of trust)?
12. What unanticipated problems did you have with bringing a PA onto the team?
13. What unanticipated benefits did you have with bringing a PA onto the team?
14. If a doctor in your specialty were planning to bring a PA onto their team, what advice would you offer him or her?
15. Is there anything else you would like to tell me about bringing a PA onto your team?

Potential probes. Probes used to broaden or narrow the discussion as needed.

• What are the strengths and weaknesses of the PA role in your opinion?
• How did you find the knowledge base of the PA? In what ways was the knowledge base sufficient, and ways was the knowledge base insufficient? If you have PAs from multiple schools on your team, what differences did you note between the schools of origin?
• How much supervision did the PA(s) require at first? How much do they require now?
• How do you think that lack of a PA role model on your clinical service affected the process of bringing a PA on board?
Questions for PAs (not all questions asked of all participants)

1. Tell me about your training and clinical background.
2. How did you get your first job as a PA?
3. Thinking back to the time when you first started as a PA, how did things go?
4. Thinking back to the time when you first started as a PA, what did you expect to do on your team? (be specific) How did your expectation compare to what you do now?
5. How were your expectations and the doctors’ expectations for the role of the PA on the team similar and different?
6. How was your role as a PA introduced to nurses, junior doctors, patients, other staff?
7. How did other health professionals respond to bringing you on board? What do you think caused their responses?
8. How has the role of the PA on your team evolved over time?
9. Who advocates for you (the PAs)? You? Others? How does that work?
10. How were you trained to be of more use to your team?
11. How did you develop trust with your doctors over time / fail to develop trust with your doctors over time?
12. What unanticipated problems did you have with joining the team?
13. What unanticipated benefits do you think you have brought to the team?
14. If you had the chance to speak to a PA who was going to be the first PA on their service, what advice would you offer him or her?
15. Is there anything else you would like to tell me about being the first PA on your team?

Potential probes. Probes used to broaden or narrow the discussion as needed
- What are the strengths and weaknesses of the PA role in your opinion?
- How did you find your knowledge base at the start? Was your training sufficient for your role on the team? Were there other PAs at your site who graduated from different PA programs? If so, how did you find your training compared to theirs?
- Do you feel that you received sufficient supervision and support when you first started as a PA? How about now?
- Do you think that lack of a PA role model affected the process of bringing you on board? If so, how?