Advanced Roles: Lessons learnt from U.S Healthcare 'Middle' Grade System in Education and Clinical Practice

WINSTON CHURCHILL MEMORIAL TRUST

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Contents Page

Executive Summary

Conclusions about the U.S. Systems

The U. S. healthcare system would be unable to function without the 'middle grade' system comprising of Nurse Practitioners and Physicians Assistants. Advanced roles are extensively established in the United States and the roles are clearly defined, there are very good support networks in each hospital for advanced roles and a significant focus on education and training.

Both the Nurse Practitioner and the Physicians Assistant have protected titles within the United States this enables stricter governance over both training and scope of practice. Scope of practice for Nurse Practitioners and Physicians Assistants within acute settings was the same. The U.S. advanced practitioners are required to pass a national accreditation exam which sets a minimum standard within a specific role, ensuring practitioners fulfil an accredited course as this is a requirement. Each individual state has its own regulations and each institution has its own set of guidelines influencing scope of practice.

Most Physicians Assistants and Nurse Practitioners are either inpatient or outpatient. I prefer following the patient journey and I believe as a practitioner a better rapport is built up with the patient and their family which is to the benefit of the patient and practitioner.

The scope of practice is fairly similar between the Registered Nurse First Assistant role and the Surgical First Assistant role with the main difference being that the position statement for Registered Nurse First Assistant incorporates suturing as part of their basic scope of practice.

Educational facilities that run the programmes have to be in line with the educational restrictions outlined by the national organisations. It also minimises confusion for clinicians, managers and the public who come into contact with these advanced roles.

Applicability in the U.K.

With the current pressures and changes occurring across the NHS there is an increased need to think of different ways of working whilst still ensuring high standards of quality patient care. Advanced roles are a way of bridging the inevitable gap in care, however standardisation in both education and and clinical practice is imperative to achieve this in a safe and appropriate manner. Within the U.K. it should be easier to standardise due to not having the fluctuating of practice within each state as the U.S. practitioners have.

With regards to workforce planning it is important to have an understanding of the different available advanced roles and which would be the most appropriate to cover emerging deficits. A strength of the PA role is that it is generic, with practitioners being trained within a number of specialities who then specialise once qualified. Allowing flexibility for the individual practitioner and workforce planning. Something we need to be careful about in

the U.K. is not to overspecialise such as the U.S. Nurse Practitioners who train within specific pathways making it more difficult for individuals change roles. It is imperative in the U.K. to ensure Advanced roles are specialised appropriately to effectively fulfil the scope of practice to a high standard without inhibiting flexibility. In my opinion a mix of both nurse practitioners and physicians assistants is the optimum workforce as there are strengths in practitioners with different training and viewpoints which lead to enhanced patient care.

In order for the Physicians Assistant role to work as effectively as in the U.S. healthcare system it is necessary for the role to be registered and develop to have prescribing rights. Otherwise I think this invaluable role will be significantly hindered in its functionability.

Within the U.K. we do not have standardisation, protected titles and a specialist register for advanced roles, which would clarify and minimise the confusion of different roles. Ensuring practitioners with differing levels or training and scope of practice could not adopt a title which may not be in linking with what would be nationally identified as that role. For roles such as the Surgical Care Practitioner which is continuing to develop and a protected title will be imperative in the implementation and definition of the role clinically. A national certification exam integrated into U.K. advanced roles requirements would ensure standards across the board and could be intiated as access to a specialised register.

To minimise the competition between advanced roles and to ensure an appreciation of each others roles it would be a benefit within the U.K. to train advanced role students in common skills such as clinical examination and diagnostic skills.

Despite U.S advanced roles being estabished longer than the U.K. equivalents, in some aspects the Physicians Assistants and Nurse Practitioners were not as advanced as none of the practitioners carried out independent ward rounds or independent operating.

<u>Recommendations</u>

- Protected Titles (Scope of practice and Education)
- Nationally accredited and standardised courses
- No in house training (quality control)
- Incorporation of basic surgical skills into Surgical First Assistant role
- Physician's Assistant needs to be a regulated role in UK
- Physician's Assistant prescribing rights
- National certification
- Separate section on register to identify advanced practice
- Advanced Code of Conduct

Key Messages

- A key message within this report is the need for clinical change to ensure sustainable care.
- The importance of role clarification including protected titles, educational requirements and scope of practice.
- Standardisation of practitioners in the form of a national exam which then results on admission to a national register.

1.0 Introduction

1.1 My Background

I am a Surgical Care Practitioner (SCP) in colorectal surgery at Aintree University Hospital, the role of the SCP incorporates pre-, peri- and post- operative care for patients. Prior to this I was a Theatre Practitioner and a Team Leader and Surgical First Assistant (SFA) both of which are perioperative roles. In conjunction to this I am also an Associate Lecturer at Edge Hill University co-running the advanced perioperative modules and Surgical Care Practitioner MSc Programme. I was also part of the working party for the Curriculum Framework for the Surgical Care Practitioner at the Royal College of Surgeons.

1.2 Why I Applied for the Fellowship

There are a number of extended and advanced roles within the U. K. with fluctuant titles and differing levels of education and assessment (please refer to glossary). Also due to a number of national changes there will be less junior doctors within the National Health Service and a potential solution would be advanced roles. The reason why I applied to the United States is that the advanced roles have been established for approximately forty years, they are well established within the healthcare system which would not be able to function without the 'middle grade' system. I wanted an insight into this established system to learn lessons to subsequently implement regarding training, scope of practice and workforce planning within the U.K. healthcare system.

1.3 Background to Fellowship

Due to a number of changes within the National Health Service (NHS) such as the introduction of the European working Time Directives (National Health Service Management Executive, 1991) and changes to the U.K. Border Regulations there has been an impact on the recruitment and training of junior doctors. There is also a move towards Seven Day working (NHS, 2013) meaning that the NHS will struggle to continue to deliver services in their current manner. Hospital trusts are facing an unprecedented shortfall in the number of trainee doctors, coupled with an ageing population this is resulting in the need to treat more patients with complex long term conditions. Subsequently this has led to the widespread review of resources and the need for trusts to consider reorganising their teams and services to overcome the shortfalls. Both the Surgical Care Practitioner (SCP) role and the Physicians Assistant (PA) role will be essential to bridge the gap in the clinical shortfalls. Both roles provide consistency of care and rather than inhibiting junior doctor training enhance it by supporting the clinical environment and freeing doctors to care for more complex and critically ill patients. The United States healthcare system had had the equivalent roles in place for forty years and their overall healthcare system is functional due to the 'middle grade system' which comprises of Physicians Assistants and Nurse Practitioners.

There are a number of benefits to advanced roles;

The benefits for patients are enhanced patient safety, improving quality of care, continuity and consistency of care as they are a stable part of the team. Advanced roles have also been shown to reduce waiting times and increase patient satisfaction due to increased consultation times. The benefits for the individuals in the advanced roles are that it promotes self-development, creates new challenges, improves self-confidence and provides clinical career pathways. The organisation benefits of advanced roles are that they decrease doctors workloads which allows them to deal with more complex patients, reduction of operative time with an experienced assistant, familiarity with organisation and cost saving due to reducing the need for locum doctors (Christiansen et al., 2012; Lowe et al., 2011; Quick, 2013).

There are however a number of documented challenges for practitioners in advanced roles;

There is difficulty in gaining acceptance of the role by health care professionals and patients. Motivating doctors to change from a traditional model can be a challenge, as can the crossing of traditional professional boundaries. Practitioners often find their development inhibited due to embedded resistance to change within the clinical setting. Compromised by inadequate management support/ understanding. Due to a lack of role standardisation and confusion surrounding roles there is also often a lack of appropriate education. Excessive Protocols can be very restrictive for the practitioners development (Christiansen et al., 2012; Lowe et al., 2011; Quick, 2013).

1.4 U.S. Healthcare Context

An understanding of the U.S. healthcare system allowed me to conceptualise my experiences and advanced roles within the overall healthcare culture. There were differences in the hospitals; Riddle Hospital was a Private Community Hospital which was volume driven and needed to save money where possible. Jefferson Hospital which is a University Hospital is financially independent; it gets two incomes one from the University and one from Reimbursements' from insurance companies. It is overall a volume driven system where the more throughput of patients the more income generated with each hospital being independent with its own budget and expenses.

It is a consumerised system and patients have more control over whom they are treated by and when. Hospitals are required to meet the care needs of the patient outlined by the insurance companies, if they do not comply then the insurance companies refuse to reimburse. For example Medicare dictate anti- clot prophylaxis, removal of catheters within twenty four hours (if the catheter is not removed clinicians must document rationale for clinical decision making) and prophylactic antibiotics. If complications occur during patient care and the insurance companies feel the blame is due to the hospital then the hospital does not get paid for the patients costs therefore there is a pressure on high quality.

Reimbursement payments are also directly linked to patient satisfaction therefore an increased effort is made to achieve positive feedback.

Over the last fifty years a number of legislations led to changes to semi-federal government sponsorship, Obamacare aims to provide people over the age of sixty five they are entitled to a Medicare (Medicare insurance) however this only entitles them to eighty percent of their healthcare costs paid by federal government, they need to take additional insurance cover for the other twenty percent. Obamacare aims to change healthcare from volume driven to quality driven but this is in the early stages and there is a significant amount of resistance.

The Affordable Care Act (U.S. Department of Health and Human Services, 2012) has increased the number of physicians assistants. The reason is that there are more patients than healthcare providers (MD). Therefore, we need to increase the number of PAs to help with the deficit.

1.5 Outline of Itinerary

I was very fortunate at the beginning of last year to be successful in an application to the Winston Churchill Travelling Fellowship. In my application I had asked to be funded to travel to the United States (U.S.) to review their advanced surgical roles in both the clinical and educational environments as the roles have been established for forty years. I wanted to look at the equivalent roles to the Surgical Care Practitioner role which were the Nurse Practitioner (NP) role with the Registered Nurse First Assistant (RNFA) qualification and the Physicians Assistant Role. Both the Nurse Practitioner with additional RNFA qualification and the Physicians Assistants have the same scope of practice as Surgical Care Practitioners but the Nurse Practitioner is trained using the nursing model compared with the Physicians Assistant education which follows the medical model. I aimed to review how these roles were implemented, developed, evaluated and supported within clinical practice to ensure, competency, high quality care and patient safety.

Name of Organisation	**Dates**
Cornell University Physicians Assistants Programme, New York	Sept 29th-Oct 3rd
New York- Presbyterian Hospital, New York	Sept 29th-Oct 3rd
Thomas Jefferson University Hospital, Philadelphia	October 6th
Riddle Memorial Hospital, Philadelphia	October 7th
Delaware County Community College Registered Nurse First Assistant Programme and Nurse Practitioner Programme, Philadelphia	October 8th-11th
National Institute of First Assisting (NIFA) Registered Nurse First Assistant Course, Philadelphia	October 17th-19th
Virginia Hospital Centre, Washington	October 21st-22nd
Fairfax Hospital, Washington	October 23rd-24th

The Mayo Clinic, Rochester, Minnesota	Oct 27th- Nov 7th
M.D. Anderson, Houston, Texas	November 10th- 21st
Texas Children's Hospital, Houston, Texas	November 10th- 21st

1.6 Objectives of My Fellowship

The aims before I travelled to the U.S. were to;

- Improve the clinical development of Surgical Care Practitioner roles
- To review how the Physicians Assistant and Nurse Practitioner roles in the U.S. are implemented, developed, evaluated and supported within clinical practice to ensure competency, quality and patient safety.
- To learn how the Physicians Assistant, Nurse Practitioner and Registered Nurse First Assistant extend their knowledge and skills to an advanced level.
- To facilitate the development of future SCPs having reviewed the education and assessment of the Physicians Assistants, Nurse Practitioners and Registered Nurse First Assistants enabling them to make safe advanced clinical decision making and clinical reasoning.
- To learn from the clinical practice of the Physicians Assistant, Nurse Practitioner and Registered Nurse First Assistant to ensure that practitioners in this role are providing the same standard of care as a medical practitioner carrying out the interventions, treatment and care.
- To learn new innovative ways of working to build highly effective teams who deliver safe, high quality care.

2.0 The Fellowship

2.1 Cornell University Physicians Assistants Programme, New York

The American Academy of Physician Assistant (2015) define a Physician Assistant as a nationally certified and state-licensed medical professional. Physicians Assistants practice medicine as part healthcare teams with physicians and other providers. They practice and prescribe medication in all fifty states, the District of Columbia and all U.S. territories, with the exception of Puerto Rico. Scope of practice includes; Taking a medical history, carrying out physical examinations, diagnose and treat illnesses, order and interpret tests, develop treatment plans, health promotion, assisting in surgery, prescription medications and make rounds in hospitals and nursing homes. Physicians Assistants specific duties depend on: the setting in which they work, their level of experience, their specialty and State laws.

Most programs are approximately twenty six months (three academic years) and require the same prerequisite courses as medical schools. Most programs also require students to have about three years of healthcare training and experience. Students take courses in basic sciences, behavioural sciences and clinical medicine across subjects such as anatomy, pharmacology, microbiology, physiology and more. They then complete a total of more than 2,000 hours of clinical rotations in: Family medicine, Internal medicine, Obstetrics and gynaecology, Paediatrics, General surgery, Emergency medicine and Psychiatry. Before they can practice, PAs who graduate from an accredited program must pass the Physician Assistant National Certifying Exam (PANCE) administered by the National Commission on Certification of Physician Assistants and get licensed by the state they wish to practice in. To maintain certification, PAs must: Complete a recertification exam every ten years and Complete 100 hours of continuing medical education (CME) every two years. Physicians assistants are viewed and see themselves as an extension of the physician and are not in competition with the physician or trainee doctors (American Academy of Physician Assistant, 2015).

I met with Mayra Ramirez, Senior pre-clinical coordinator, Gerard Marciano, programme director and Harry Pomeranz, Pre-clinical coordinator. They provided me with a very positive insight into both the Physician Assistant profession and education.

There are a hundred and ninety physician assistant courses across the United States all of which are overlooked by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA, 2015) association. The ARC-PA is the accrediting agency that protects the interests of the public and physician assistant profession by defining the standards for Physician Assistant education and evaluating Physician Assistant educational programs within the territorial United States to ensure their compliance with those standards. Interestingly the Physician Assistant course at Cornell is one of two courses in the U.S. that offers a surgical focus that offers a twenty six month course aimed at the level of a third/fourth year medical student encompassing both surgery and medical components.

Cornell university have one thousand three hundred applicants a year for their physician assistant course for up to thirty five places. Two letters of recommendation are required for the application; an academic reference and a reference from a Physicians Assistant or a Physician. They are required to write an essay on either something that they have overcome or a recent development in healthcare. They are required to have basic computer skills.

As part of the interview process they are interviewed. They are also taken into a classroom with a number of other applicants and a current physician assistant student asks them to debate a current healthcare topic. It is felt that the applicants will relax and be more themselves around a student, the student PA then feedback the behaviours and responses of the applicants.

The physician's assistant programme at Cornell University is a twenty seven month course that is Masters level and is run and taught by Physicians Assistants. The student physician assistants are allocated placements for clinical rotations in their second year as their first year is purely didactic. They are signed off within clinical practice by a clinical physician assistant, no additional mentorship course is required.

I initially struggled to ascertain the differences between the Physician Assistant role and Nurse Practitioner role both of which have been established since the 1960s with the difference that if the Nurse Practitioners wish to work in the operating theatre they need additional training, in the form of the Register Nurse First assistant Course. There seems to be a degree of competition between the two roles which is something I would ideally like to try and avoid in the U.K. by potentially doing shared training sessions. In the East of the United States jobs are advertised specifically for one of the roles mainly depending on the Physicians experience and preference with some jobs asking either of the roles to apply for the position. Interestingly different areas of the United States having stronger Physician Assistant or Nurse Practitioner influences.

Similar to Surgical Care Practitioners are the Physicians Assistant is linked with a Consultant who has overall responsibility for patient care however they are still accountable for their actions as are to Surgical Care Practitioners. They can have distant supervision even working in adjacent state calling the Physician for advice.

Most Physicians Assistants do not come from a healthcare background, in order to apply they are expected to have completed a minimal amount of hours within a healthcare facility. He hours required depends on the programme, Cornell requires only 200 hours and you will find other programs requiring 2000 hours, the thought is that the more health care experience the applicants have the better. The first year of the Physician's Assistant programme is didactic meaning that they are taught in class with no official clinical placements. They do have some clinical time on a Friday where they take a history and clinical examination from a patient which they have to write up and present the following

Monday at university. I find this difficult to understand how you can teach someone with no healthcare background clinical aspects.

They do have some nurses who apply for the Physicians Assistant course as opposed to the Nurse Practitioner course which is beneficial as they are tend to be disciplined and know what to expect. However it is interesting to understand why a nurse would choose to do their Physician assistant training instead of their Nurse Practitioner qualification. One of the suggestions is that there is more flexibility with the Physician's assistant role due to the level of generic training including primary and secondary care.

They use mainly classroom teaching supported by online materials. They are changing their method of teaching to what they call 'flipping classroom' which is about placing the emphasis on students taking responsibility for their own education. The lecturer puts on line information for the students to read prior to the classroom and then during the teaching session they are expected to take a quiz and relate the theory to practice with case studies.

Their assessment techniques are predominantly exam based, students have an exam containing fifty questions after every four week rotation for the ten core specialities. They have five electives, for their electives they do not take an exam but need to write a paper. They have a list of objectives for their rotations and they are required to log patients whom they have assessed and managed. If a student fails they have an opportunity to repeat it at the end however if they fail the exam twice then they are asked to leave the course. Other assessments include writing up histories and examinations, disorder/ treatment forms, case presentations and documentation of patient encounters and procedures. The lecturers also have the opportunity to go into clinical practice to assess the students.

Something that I thought was excellent was one of their assessment processes; they use case scenarios with actors in which the students are videotaped history taking and clinically examining the actor. The students watch the video and self-assess and the lecturer critiques their performance they then discuss this between themselves so the student gets feedback. But what I really like about this is that the person acting as the patient gives feedback regarding how they felt and the patient experience, this is something I do not think we do at the moment and I would like to integrate this practice into current education programmes. We are incorporating this into our Objective Structured Clinical Examination (OSCE) examinations with the Surgical Care Practitioner students.

Following their training it is then necessary for Physician Assistants to take a national exam to achieve certification. Physicians assistants are then influenced by individual state control and then they are restricted by their individual institutions. To become a certified PA, they are required to pass the Physician Assistant National Certifying Exam (PANCE), a computer-based, multiple-choice test comprising questions that assess general medical and surgical knowledge.

For invasive procedures that are within the scope of their aligned physician they may not have been deemed competent at University they will need to prove competency by carrying out a minimum number in line with the required numbers residents are expected to do and level of supervision.

2.2 New York- Presbyterian Hospital

I was to spend time with a team of Physicians Assistants in haematology. I had the opportunity to go to the operating theatre to watch a procedure which would be carried out by the Consultant surgeon and the Physician's Assistant. I then went with the Chief PA Inpatient Oncology, Jeremy Heinerich; the department is medical the Physicians Assistants are based on the ward. The team is made up only of the Attending's (who are the equivalent to U.K. Consultant level doctors) and the Physicians Assistants , with potentially a fellow. Although there are no junior doctors within this department this staffing template is fluctuant depending on the department and the hospital.

The hierarchy of physician assistants starts with the clinical physicians assistants they are line managed by the senior physicians assistants who are then overseen by the chief physician assistant and then by the Director. The chief medical officer oversees all the physicians assistants.

Historically, New York Presbyterian Hospital were one of the first hospitals to expand PAs into the Operating Room, Emergency Department and subspecialties. I had the opportunity to meet with Colleen Kalmbach, Director of Physician Assistant Services and our leader for the past decade, was honored by the New York State Society of PAs for expanding the Physicians Assistant role at the hospital. We discussed the development of the Physicians Assistants and the hierarchy system.

Jeremy, chief PA, manages a team of approximately fifty Physicians Assistants within his service. The Physicians Assistants work three long days a week and they are assigned approximately eight to ten patients a shift. They round with the attending who then leaves the ward to fulfil other commitments. The Physicians Assistants work alongside the nurses then take care of the patient management; carrying out procedures, ordering and checking tests and managing sick patients. If the patients do deteriorate following the round the Physicians Assistants are capable of managing the situation with the junior Physician Assistants asking for support from their peers. The Attending will be called but may not return to the ward depending on the situation the Physicians Assistants will call for an Intensive Care Unit review, to move the patient to a higher level of care.

Physicians assistants are granted privileges they have core privileges and speciality privileges which are approved by the board of trustees within each organisation. The speciality specific privileges must link with the physician speciality with who the PA works. Physician Assistants

build their specialist skills once qualified. The physicians assistants gain malpractice cover from the individual hospital within which they work.

I observed a ward round , all the patients' information is totally computerised, this enabled them to print copies of extensive documentation on each patient including history, lab results, observations and plan. The Physician Assistants took the first hour reviewing each patients and writing the up to date blood results. The Physician Assistants worked very well together and were very supportive of each other with the junior Physician Assistants being linked with a more senior Physicians Assistant. They review the length of stay for patients as patients insurance covers a set time frame depending on the condition so the plans and management are important to ensure these time frames are met for the patients benefit.

The Attending arrived at eight in the morning and the round began. There is a new initiative in the hospital to encourage nurse engagement at ward rounds similar to practice in the U.K. The ward round also consisted of a number of Physician Assistants as the Attending's patients had been distributed between the Physician's Assistant team. The Physician's Assistant would present the patient to the Attending and then the attending would see the patient, with both the Physicians Assistant and the attending examining the patient together.

There were no junior doctors on the ward such as House Officers who would be expected in the U.K. healthcare system. I found the ward rounds in the United States completely different; in the U.K. the House Officer would document the consultation and plan in the patients notes and the observations at the end of the bed would be checked. As all the documentation is computerised no bed side documentation occurred and the observations were on the system and could be accessed at the nurses desk in the middle of the ward but were on the Physician Assistants printout. Following the round both the PA and the Attending type up the documentation. This system seems more labour intensive but has its benefits with regards to handover.

A newly appointed Physician Assistant will have a probationary period where they are expected to meet milestones of set objectives and a job description.

Physicians assistants have to apply for the certification exam they then have to retake this exam every six years however this has changed this year to every ten years. State licence is necessary for practice and is reviewed on a yearly basis. The Physicians Assistant state licence is linked with their supervising Physician although it is possible that if the physician was involved in negligence that their Physician license could be affected. If it was only the physician's assistant being negligent and the Physician has followed all of the requirements for delegating to a physicians assistant, then the physician would not be found negligent. It would only be the physicians assistant. The requirements to delegate to PA; have to be a licensed physician with no restrictions on their license. The Physicians Assistant is

responsible for their actions. The organisation has a review every two years by the credentialing board which provides the Physician Assistants with their privileges.

Physicians Assistants unlike Nurse Practitioners are unable to bill for their services.

2.3 Thomas Jefferson University Hospital, Philadelphia

I only had the opportunity to spend one day in my timetable at Jefferson Hospital, I was fortunate to be placed with Susan Garuto who is both a Nurse Practitioner and Registered Nurse First Assistant. It was my first clinical placement within a surgical speciality. I spent the day within the perioperative environment observing the stringent pre-operative safety checks and documentation, following the patients through to their surgery where I observed Susan surgically assist for the spinal and orthopaedic procedures. Following the operation Susan then safety escorted the patient to the recovery area and input the orders and medications for the patient's post-operative phase.

2.4 Riddle Memorial Hospital, Philadelphia

Again, I only had one day allocated within my time schedule to spend at Riddle Hospital. I spent time watching an Orthopaedic Surgeon Dr. Sharkey carrying out joint replacement surgery. His Nurse Practitioners; Maureen Lewis and Barbara Bowen are also trained as a Registered Nurse First Assistants. The Nurse Practitioners were based in a theatre each and they initiated the beginning of the surgical preparation whilst Mr. Sharkey was operating in the alternative theatre, then they would sew up and ensure the patient was transferred from the operating theatre safely. This was an exceedingly effective use of theatre utilisation and the surgical assistants. It was at Riddle when I did the post-operative round with Mr. Sharkey that I had my first insight into the division of care, as he had an additional Physician's Assistant who cared for his inpatients managing their post-operative care.

2.5 Delaware County Community College Registered Nurse First Assistant Programme and Nurse Practitioner Programme, Philadelphia

The American Academy of Nurse Practitioners (2015) highlight that Nurse practitioners have provided health-care services to patients for more that forty years. The Nurse Practitioner had its inception in the mid- 1960s in response to a nationwide shortage of Physicians. Nurse practitioners provide primary and some acute care and are qualified to meet the majority of patients' healthcare needs. The American Academy of Nurse Practitioners (2015) suggest that NPs promote a holistic approach to healthcare and emphasise the overall health and wellbeing of patients. Nurse practitioners are registered nurses who are

prepared through advanced education and clinical training to provide preventative and acute healthcare services to individuals of all ages.

Most Nurse Practitioners courses complete a master's level qualification but that is now moving to doctorate level. Nurse practitioners take histories and provide physical examinations, diagnose and treat many common acute and chronic problems, interpret laboratory results and x-rays, prescribe and manage medications and other therapies, provide health teaching and counselling to support health promotion and prevent, refer patients to other healthcare professionals when needed. A Nurse Practitioner provides high quality, cost-effective and individualised patient care for patients, families and communities. Nurse practitioners are authorised to practice across the U.S. and have privileges to prescribe medications in varying degrees across the fifty states (American Academy of Nurse Practitioners, 2015).

The Nurse Practitioner teaching models are based on nursing models didactic is delivered throughout the semester and students get to practice the information immediately. Students have the opportunities to practice the new skills through the semester. Programs are two or three years in length depending if you are doing the masters or the doctorate. The assessment of the students is done by testing them on the materials and clinically by working with clinicians who provide feedback and they are graded on both the clinical and didactic.

I travelled to Delaware Philadelphia to spend time with Jacqui Bak who runs both the Registered Nurse First Assistant and Nurse Practitioner programmes. I also met Christine Grakoff, Teaching Assistant whose help is integral to the simulated and technical training along with Jacqui. I also had the opportunity to meet with Jane Rothrock, who until recently was the Professor and Director, Perioperative Programs at Delaware College. She speaks both nationally and internationally on educational topics on perioperative nursing and surgical technology and is the author of three books which I have used as a student and recommend to my current students. Jane Rothrock is renowned as an expert and pioneer in the field of perioperative nursing education The lessons I observed were taught by a consultant surgeon, Dr. Vakil on anatomy, physiology and patient management.

Whereas Physicians Assistants have assisting skills incorporated into their programme, Nurse Practitioners do not, in order to surgically assist Nurse Practitioners need additional training in the form of the Registered Nurse First Assistant course.

The AORN provides the Standards for the RN First Assistant Education Programme, it provides an educational framework for the development and implementation of RNFA programmes (AORN, 2013). The Registered Nurse First Assistant Course is aimed at Registered Nurses with a minimum of two years perioperative experience (this requirement is waived for advanced practice nurses) who have completed NUS 207 (RN First Assistant Lecture Session). CNOR/APN Certification and ACLS are required. The following must be

submitted prior to registering for the internship: a) a letter from the department manager validating the nurse's experience (in years), proficiency in scrub and circulator roles (this requirement is waived for APNs), ability to perform in stressful and emergency situations, and ability to perform effectively and harmoniously as a team member; b) a copy of the display portion of the professional license to practice nursing in the state in which the internship is to be done (If state rules forbid copying a license, the original must be shown to a DCCC faculty member for validation); c) evidence of current professional malpractice insurance or letter from the sponsoring institution that you are covered for nursing liability during your internship; d) verification of health status by employee health department; e) evidence of current health insurance policy; f) evidence of current certification; g) copy of ACLS card.

Upon successful completion of the course, the student should be able to: Demonstrate application of principles of asepsis and infection control, focused physical assessment of the surgical patient and the nursing process, Recognise surgical anatomy and physiology and operative technique related to first assisting, Demonstrate skill in recognising surgical hazards and initiate appropriate corrective and preventive action, Carry out intraoperative nursing behaviours of handling tissue, providing exposure, using surgical instruments, suturing, and providing haemostasis. Assessment is determined by meeting course competencies and self-established learning objectives. A learning diary will be maintained and turned in for evaluation, along with course assignments, every two weeks.

A perioperative nurse taking the RNFA course must possess the CNOR qualification or pass the CNOR exam prior to completing the course (NUS 208- the internship). If they do not pass they will not pass or they will receive an extension of one more semester. They encourage everyone to take the exam prior to beginning their internship. When the Perioperative nurse inquires about the course, they must be CNOR eligible- meaning they must qualify for the exam- 2 years of experience in a perioperative setting. For the NP's the must have certification as a Nurse Practitioner (CRNP).

The RNFA course is only for nurses with perioperative background unless they are advanced practice RNs with the exception of some RN's who scrub and circulate in the Obstetrics area and Midwives also.

Advanced Practice Registered Nurses (APRN) are nurses who have completed an accredited graduate-level education program preparing him/her for one of the four recognized APRN roles; who has obtained a license to practice as an APRN in one of the four APRN roles: Certified Registered Nurse Anaesthetist (CRNA), Certified Nurse-Midwife (CNM), Clinical Nurse Specialist (CNS), or Certified Nurse Practitioner (CNP). These are the categories accepted or acknowledged by AORN. All Advanced Practice Registered Nurses have advanced degrees.

RNFAs may suture more than just skin. They are taught skin closure in the lab. Most learn more from their mentors. It can also depend on what they are trained to do. In some states they may be restricted or may be restricted according to hospital policy.

Privileges fluctuate depending on the state. Most RNFAS are trained to do fire staple guns by their surgeon or under the guidance of their surgeon. So most RNFA (perioperative or RNFA are able to do this once they are trained and show competency).

In Philadelphia, the restrictions are dissimilar to other states. APRNs are able to do what we are trained to do and can show competency. RNFA's (non-NP's) cannot write physician orders or the post-operative note or prescriptions.

Most NP's and RNFA's who join a physician practice specialise. Those who are hospital based, or hired by the hospital tend to be generalized. Such as Maureen, her primary function is to work with a specific physician as they see a need there. I would not say there is a rule on specialising. It is dependent on the RNFA or NP and the type of job they are seeking or the type of practice setting they either find themselves in or that the hospital in their area offers. Maureen's hospital offers both. There is a RNFA who works in a rotation with other Surgical Assistants who are PA's and Physicians.

There are a number of Nurse Practitioner courses available nationally; adult, family, paediatric, geriatric, women's health, neonatology, acute care, critical care or mental health? for which practitioners can apply for the American Nurses Credentialing Centre for the American Academy of Nurse Practitioners or the National Certification Corporation national certification examination.

For the clinical education aspect there was an 'operating theatre' for simulations and highly technical laparoscopic training equipment. We had a morning being taught basic surgical skills including superficial wound closure on 'fake skin'.

Nurse Practitioners are able to have independent caseload and work independently from a physician as registered practitioners in their own right; Physicians Assistants have to be linked with a doctor in order to practice.

The AORN position statement on Advanced Practice Registered Nurse (APRN) in the perioperative setting is used in the United States a standard. In Philadelphia, there are no restrictions like other states. Nurse Practitioners are able to do what they are trained to do and can show competency. Registered Nurse First Assistant's (non-NP's) cannot write physician orders or the post-operative note or prescriptions. The Association of Operating Room Nurses outlines the clinical practice for the RNFA.

2.6 National Institute of First Assisting (NIFA) Registered Nurse First Assistant Course, Philadelphia

The NIFA model of surgical education aims to teach students basic surgical skills which are learnt and practiced on models and simulators aiming to better prepare trainees for the operating room experience. This training technique is based on established ways theory of the ways of motor skills are acquired and expertise is developed. In the cognitive stage the learner intellectualises the task. With practice and feedback the learner achieves the integrative stage in which knowledge is translated into appropriate motor behaviour. The practice gradually results in smooth performance, the learner no longer needs to think about how to execute this particular task and can concentrate on other aspects of the procedure. The earlier stages of teaching technical skills should be carried outside of the operating room; practice is the rule until autonomacity in basic skills is achieved. This mastery of basic skills allows the trainee to focus on more complex tasks both technical and non-technical.

This course is predominantly on-line education, students are provided with workbooks on various surgical skills and surgical procedures, with three of days face to face sessions teaching basic surgical skills. These skills are then put in to practice to carry out different simulated surgical techniques. Foam and boxes were utilised to represent anatomy and the students them carried out surgical procedures such as a bowel resection.

The three day programme covered;

Day 1- Advanced suture and tying, total abdominal hysterectomy covering; review of suture and tying video workshop tying techniques, lecture on total abdominal hysterectomy and bilateral salphing-oopherectomy including anatomy, considerations and indications leading to a surgical lab practice, including pfannenstiel wound closure.

Day 2- A lecture on bowel anatomy, considerations and indications leading to a surgical lab practice and a hands on session.

Day 3- A lecture on an abdominal aortic aneurysm including anatomy, considerations and indications leading to a surgical lab practice and a hands on session.

The students whom I met on the course were from across the United States and this gave me the opportunity to discuss the different challenges that they faced within theatre departments.

2.7 Virginia Hospital Centre, Washington

I then travelled to Washington to spend two days at Virginia Hospital Centre with Leslie Wyatt, a Registered Nurse First Assistant in Cardiac Surgery. It is the first time I have seen cardiac surgery and it was fascinating. I also was able to see the role of the perfusionist for the first time.

2.8 Fairfax Hospital, Washington

My next stop was to spend two days with Patricia Seifert who is well known and experienced Registered Nurse First Assistant and has written a number of publications. I spend time in the cardiothoracic operating theatres watching the Registered Nurse First Assistant surgically assist. The system for RNFAs in this unit was a little different. There were two RNFAs at the operating table assisting for major cardiac procedures, one would harvest the vein whilst the other acted as first assistant whilst the Surgeon opened the chest, once the RNFA that had endoscopically harvested the vein they then took over as first assistant, leaving the other assistant to perform second assistant duties. It appeared like a two tier system depending on whether the Registered Nurse First Assistant was capable of 'taking the vein'.

I met a Nurse Practitioner Christy Schatz who was also a qualified Registered Nurse First Assistant, she worked with a Thoracic Surgeon, Dr. Sandeep Khandhar and I watched my first thoracotomy which was performed laparoscopically. We had the opportunity to chat after the case about her training and role. Despite working in an acute setting she had a Family Care Nurse Practitioner qualification, the reason she had been able to be employed in an acute setting was due to her previous career history. I asked her why she had not chosen an Acute Care Nurse Practitioner programme as it would be more applicable and she had chosen Family care due to financial implications as it was the closest course available to her. The benefit to the family care nurse practitioner qualification is that it also incorporates paediatric care.

A suggestion was made whilst I was here that the benefit of nurse practitioners over physicians assistants is that they have more of a holistic outlook to patient management and due to their nursing background are more adept at organising patient care.

There were a number of Nurse Anaesthetists within the department, they had a very advanced scope of practice and anaesthetised for all the major cardiac surgeries with the presence of an anaesthetist for intubation and extubation.

2.9 The Mayo Clinic, Rochester

The Mayo Clinic campus in Rochester, Minnesota comprises of an extensive outpatient complex, Saint Marys Hospital and Rochester Methodist Hospital and substantial research and educational facilities. The Mayo Clinic Health System is comprised of seventy communities in Southeastern Minnesota, South-West Wisconsin and Northern Iowa.

I had two weeks allocated at the Mayo Clinic, I was allocated to Dr. Dearani who is a cardiac surgeon operating on both adult and paediatric patients specialising in Ebstein's Anomaly which is a rare congenital defect involving an abnormal tricuspid valve and abnormal right atrium and right ventricle.

This was the longest placement I had had up to this point and the benefit of this was that I was able to gain a greater insight into the ward management of patients and outpatients as

well as visiting Practitioners in other specialist areas. Dr. Dearani had a Physician's Assistant, Lucinda Stroetz who helped to manage his in patients and also helped in outpatients. Lucinda saw all this patients with him in clinic and stayed for a little while after, providing them with additional information and explanation as necessary.

Dr. Dearani also had a surgical assistant, she was not a Registered Nurse First Assistant, the mayo clinic train practitioners to carry out that specific role. The mayo clinic call the role 'Surgical First Assistant', the Practitioner undertakes five months of classroom education and seven months of lab and clinical time. The potential applicant must have an admission essay and two letters of recommendation. Classroom time includes learning; operating room culture and techniques, intensive anatomy review with cadaver lab, suture and tying skills, laparoscopic techniques, robotic surgical procedures and expectations of the Surgical Assistant. The surgical first assistant works under the direct supervision of the Operating Surgeon, the scope of practice includes; ensuring visualisation of the operating field, provide haemostasis, harvest surgical grafts, perform closure of the incision and casting and application of wound dressing. The clinical rotations comprise of one hundred and thirty five cases, approximately one thousand one hundred and fifty hours and include a range of surgical specialities. They are assessed through written examination, demonstration of skills, self-assessment exercises and faculty reviews.

Whilst I was at the Mayo Clinic due to having allocated two weeks I was able to spend different days within other specialities and a number of other specialities both medical and surgical. I was very fortunate to have Teresa Hackler, Mr. Dearani's Administrative assistant to help me co-ordinate my two weeks.

I spent some time with Robert Adams who supervises the education of the physician assistant students. One thing we discussed was ensuring that the right people were allocated places on the Physician Assistant course. At the Mayo Clinic in conjunction with the University of Wisconsin-Lacrosse students are required to undertake a group interview. The interview rooms are divided into two; one room has three clinical faculty interviewers and the second room three didactic faculty. Three students at a time are brought into the room and asked the same question i.e. 'you all can have a place on the course but on can start this year, one can start next year and one in five years…. Decide between the three of you who will start when'. The interviewers are looking at their body language, response and how they interact and negotiate with each other. In the United States the students have already undertaken a four year degree in science (aged eighteen to twenty two) they then undertake the two year Physicians Assistant programme which is the same as Cornell university; one year didactic and the second year predominantly clinical with minimal classroom time. Their assessments are mainly exam based with no OSCES but simulations within the simulation centre on patient models. They have four week rotations followed by a multiple choice exam for which they need to meet set criteria. Within the clinical setting they have paperwork they need to complete and they can be mentored by supervising

Doctor, Physician Assistant or Nurse Practitioner. In order to be a preceptor the professional is required to have worked a year at the mayo clinic and had approval from their supervisor, educational chair and department chair.

The mayo Clinic had cadaveric workshops which was utilised in a professional and respectful manner to educated and assess students.

The Mayo Clinic had a multidisciplinary simulation centre to optimise education, Kathleen Keech the standardised Patient Co-ordinator showed me, it offered three types of "experimental learning"; standardised patients, task trainers and high-fidelity mannequins. They are aim to lead the application of new technologies designed to facilitate learning without associate patient risk and carry out research in simulation-based education. The users include; medical students, residents and fellows, nurses and students as well as clinical staff in a number of specialities. The students are given different scenarios with the same learning outcomes, they take it in turn to carry out the scenario whilst watched by the rest of the class and them given feedback by the instructor and peers. The Mayo Clinic has fifty to seventy actors available who will act as 'standardised patients' at a fee of fifteen dollars an hour (for a minimum of two hours with training), for additional fees some actors will allow students to perform invasive examinations i.e. breast and hernia for three hundred dollars for half a day as part of their education. The Mayo Clinic runs an instructor course at the simulation department enabling them to use hands on techniques, principles of simulation based education including training methods, course design and concepts and debriefing strategies.

I had the opportunity to spend a couple of day with an orthopaedic PA, Pete Bos, who worked for Dr. Trousdale, I observed him assess the patients in clinic day before surgery and problem solve any issues answering the patients questions and providing reassurance. I was then present in theatre the next day to watch Pete first assist for joint replacement surgeries and then following the patients through to x-ray and recovery.

I managed to arrange on my last day to spend the time with a colorectal nurse practitioner, the first time within my own speciality. She and her Physician Assistant colleagues provided inpatient care. I rounded with them and the Fellows or Consultants and watched them input orders for the management of care. During some of our conversations we discussed the differences between a Nurse Practitioner and Physician Assistant within the multidisciplinary team. Interestingly what we discussed was that the nurses were less challenging to the nurse practitioner than to the Physicians Assistant, the reasoning behind why this was due to the nurse practitioner coming 'through the ranks' of the nursing profession and having an understanding of the nursing duties.

I spent a day within the intensive care unit, this was staffed by an additional team of nurse practitioners and Physicians Assistants who were based solely within the unit. I was allocated to a Nurse Practitioner, I followed her as she rounded with the Consultant and

input orders for the patient postoperative management. We discussed her education, she had a family nurse practitioner qualification rather than an acute care or critical care qualification The rationale for her choosing to undertake the family care Nurse Practitioner course was that it was the availability due to it being her geographically closest course. She had been employed within an acute setting due to her background as a critical care nurse prior to becoming a Nurse Practitioner. However in this instance due to her caring for both adult and paediatric patients the family care nurse practitioner may have been optimum as this enables that. We discussed the differences of the nurse practitioner and physician's assistant and the strengths of each role. She felt that one significant difference between newly qualified physicians assistants and nurse practitioners is that the nurse practitioners adapted easier and 'hit the ground running' compared with the Physicians Assistant and this was put down to their previous experience as nurses.

The Mayo Clinic have their own nurse practitioner critical care and physician assistant programmes, it is a twelve month postgraduate nurse practitioner fellowship. The content allows the Nurse Practitioner/ Physician Assistant to develop a deep and broad knowledge base of the common disease processes for which patients are hospitalised, understanding pathophysiology, various clinical presentations and disease prognosis. The practitioners can develop a diverse diagnosis and retrospective diagnosis and treatment plan based on the patients presenting symptoms along with evidence-based, cost effective medical care. They will enhance their knowledge of critically ill or injured patients and develop and increase their critical thinking skills. To apply the potential applicant needs; official college or university transcripts, three letters of recommendation, a personal essay describing their work experience and why a critical care fellowship would be an asset and an interview.

I managed to have some allocated time with Claudia Swanton who is the Nurse Practitioner Clinical residency Program Director we discussed the academic and practical elements of the nurse practitioner programme. The NP teaching models are based on nursing models didactic is delivered throughout the semester and students get to practice the information immediately. Students have the opportunities to practice the new skills through the semester. Programs are two or three years in length depending if they are doing the masters or the doctorate. The assessment of the students is done by testing them on the materials and clinically by working with clinicians who provide feedback and they are graded on both the clinical and didactic.

The Mayo Clinic offers a Nurse Practitioner Residency Program offering diverse and challenging clinical experiences to students enrolled in a Mayo Clinic- affiliated masters or doctorate level nurse practitioner programme. Each year the Mayo Clinic admits twenty students to its Nurse Practitioner Residency Program, the student learning schedule includes eight-hour days, three to four days a week. The programme prepares students to provide professional nursing with an emphasis on health promotion and disease prevention through patient education and counselling. Students are prepared to perform in an

expanded role in the delivery of primary health care. Clinical experiences and learning include; comprehensive assessment of the health status of individuals and families, management of acute and chronic health problems, provision of counselling and teaching in areas of health promotion and disease prevention and collaboration with other health care professionals. Intensive clinical placements include clinical rotations in primary care clinics, as well as general internal medicine. Students may select; congestive heart clinic, women's heart clinic, vascular centre, lipid clinic and hypertension clinic. Students rotate regularly to one or more areas for approximately six weeks to become familiar with the care of complex cases. Concurrently they continue to care for primary care patients in family medicine, preventative/ occupational medicine or primary care internal medicine. During the clinical rotations the students are supervised by qualified nurse practitioners, physician assistants and physician preceptors. Students are evaluated by demonstration of skills, self-assessment exercises and faculty visits (one or two per semester).

In order to apply for the Nurse Practitioner Residency Program the potential students must be enrolled on an affiliated NP programme, have two years clinical nurse experience, be a practicing nurse at the Mayo clinic and have a good academic standing. Health education requires the accumulation of scientific knowledge accompanied by an acquisition of essential skills and professional attitudes and behaviour and in order to ensure patients are not placed in jeopardy by students with impaired intellectual, physical or emotional functions. Therefore applicants must show that they possess the following qualities; critical thinking, sound judgement, excellent communication skills, emotional stability and maturity, empathy, physical and mental stamina and an ability to learn and function in a wide variety of didactic and clinical settings. Applicants are judged on scholarly accomplishments, but also physical and emotional capabilities to meet the course requirements and graduate skilled and effective practitioners. To apply the potential students need to complete an online application, submit the official transcript of Masters or Bachelorate credits and three letters of professional and academic recommendation.

Claudia explained to me that due to widespread patient populations including patients in remote areas nurse practitioners were utilising innovative techniques such as video links to make 'virtual assessments' of patients.

The Mayo Clinic also offers an eighteen month postgraduate nurse practitioner fellowship in Emergency Medicine for both nurse practitioners and physicians assistants to become skilled, compassionate and efficient emergency medicine providers. The programme goals include; developing a diverse differential diagnosis and respective diagnostic and treatment plan based on the patients presenting symptoms taking into account evidence based and cost effective care. To develop confidence in common procedures required for emergency medicine patients, develop the ability to effectively lead a multidisciplinary team in critical cases and develop and increase critical thinking. During their training the students will experience the following; advanced life support training, co-preceptor and interdisciplinary

teaching opportunities, educational conferences, quality improvement training, simulation training and trauma training.

I spent a day with a Nurse Practitioner in respiratory, the Consultant Physician was present on the ward throughout the day. We did a ward round following which I attended a multidisciplinary discussion regarding how the patients were progressing. The professionals present during the discussion included the Consultant, Nurse Practitioner, Social Worker and Ward Nurses, everyone's input was encouraged, they discussed the progress of each patient, the plan from the ward round and discharge planning.

I noticed that when I moved away from the West Coast of the United States the competitiveness between the Nurse Practitioner and Physician Assistant role was less and at the Mayo Clinic it was virtually non-existent. At the mayo clinic jobs were advertised for either a nurse practitioner or a Physicians Assistant to apply. The interactions I witnessed between the two professions were very positive and supportive. As in all the institutions I visited both the Nurse Practitioners and the Physicians Assistants are managed under the medical structure rather than nursing as it was felt Nursing Management can be too restrictive and protocol based inhibiting practitioner practice and development.

I did meet one Physician Assistant who worked within cardiac surgery who was originally a nurse, she had chosen to undertake her Physician Assistant training instead of the nurse practitioner training due to the course being so generic allowing flexibility.

During my time at the Mayo clinic they had interviews for Advanced Practitioners, the practitioner was interviewed by some of the senior advanced practitioners (both Nurse Practitioners and Physicians Assistants) and then the applicant was invited to stay for lunch after being shown around the department to meet the rest of the team.

As patients came for hundreds of miles to have care at the Mayo Clinic on discharge patients were required to stay for an additional period within the local vicinity often at a hotel which was cheaper that a hospital stay. They could then access the hospitals outpatient facilities. Interestingly the hotel I stayed in had in-room home care services which included nursing services ranging from; assisting with daily activities of living, blood pressure readings to wound assessments and dressing changes and administration of medications.

2.10 M.D. Anderson, Houston

I then flew south to Houston, Texas for two weeks, the majority of time I spent at M. D. Anderson allocated to Dr. Vauthey who is a hepatobiliary surgeon and his team. I also had the opportunity to spend time with the colorectal team too.

Steve Wei who was Mr. Vauthey's Outpatient Physicians Assistant kindly scheduled time for me over the two weeks incorporating all areas of patient care; wards, clinics, operating theatre and multi-disciplinary meetings.

The division of care was a little different in M. D. Anderson, Mr. Vauthey had an allocated fellow who assisted him in theatre, an inpatient Physicians Assistant and an outpatient Physicians Assistant. They did not appear to have any Registered Nurse First Assistants.

I spent time in Dr. Rodriguez-Bigas clinic his Nurse Practitioner, Colleen Reeves and Dr. Nancy You clinic with her Outpatient Physician Assistant, Annie Troung. I was intrigued with how they ran the clinic; essentially they ran the clinic with one nurse, a technician who could manage the scopes, the Physician and two Advance Practitioners (Nurse Practitioners or Physicians Assistant) and/ or a fellow. The staff stayed within an MDT room and the patients were allocated into an examination room, the nurse would see them first them the Physician Assistant or Nurse Practitioner, they would then present to the Consultant (who saw all the patients). This process speeded up the outpatient services and increased patient satisfaction which is directly linked to reimbursement costs for the hospital. If the patient needed a flexible sigmoidoscope this could be facilitated within clinic too. During this time I also spent time with Dr. Vauthey and Steve Wei, Dr. Vauthey ran his clinic similarity but did a pre-clinic run-through of the patients including discussing where they are up to with their management, scans and histology. This ensured that all the team were clear of the individual patient management plans, it gave the juniors an opportunity for education and a smoother running of clinic.

I also watched Dr. Vauthey carry out a number of complex liver resections. I also watched Dr. You carry out a robotic bowel resection which I had never witnessed before.

I had the opportunity to go to the Liver Tumour Conference (their multi-disciplinary meeting) this had an educational element and they had invited speakers at each one some external some internal. The patients were discussed in the presence of a variety of specialists to ascertain the optimum patient management.

I also spent some time with Kristen Robinson who was Dr. Vauthey's Inpatient Physician Assistant. I spent the day rounding with her, observing her patient management and interactions with the patients and their relatives and the inputting of orders. In the United States the patient's relatives are encouraged to be present during their care, there are no visiting times, relatives are welcome throughout the patients stay and due to the layout of inpatient services with every patient having an individual room relatives are able to stay overnight. It is felt that having the relatives present not only supports the patient but reduces litigation as relatives have direct communication with teams and a clearer idea of management plans and that relatives influence their relatives when filling out patient satisfaction questionnaires.

Again there was not the competitiveness between Physicians Assistants and Nurse Practitioners and the teams were with an mixture of both who worked well together.

Todd Pickard the Director of Physician Assistant Practice arranged time to speak to me regarding the education of the physician's assistants. The Physicians assistants at M. D. Anderson have a role in cancer prevention, screening, diagnosis, management, patient education and co-ordination of care. Within primary care they would have a similar role to a general practitioner reviewing patients and managing their care. When a physician assistant starts at M. D. Anderson they are orientated to the cancer services and mentored in the job by a Physician and Physician Assistants on current articles, guidelines and standards of care. For example if they are a Urology Physician Assistant in the Operating Theatre they are assessed by direct observation and assessments, clinically they work collaboratively and their progress assessed and for procedures i.e. prostate ultrasound and biopsy they have to attend a course, be trained clinically and are both observed and have to undertake an exam. The procedures that Physicians Assistants can carry out (depending on their physicians speciality) include; lumbar punctures, removal of subcutaneous ports and bone marrow biopsies. Competencies for the procedures are outlined by the hospital as is the training protocol. As part of the standardised competencies physicians assistants are observed and graded. The job descriptions at M.D. Anderson are generic for nurse practitioner and Physicians Assistants. It includes a position description outlining the key functions of a Physicians Assistant or nurse practitioner in this role. It then mentions the allocated privileges including the scope of practice and privileges i.e. admitting patients and assisting in the operating room. They have an acute care services team, they rotate through an acute care services team. They do some rotations through the emergency centre, line clinic, clinical decision unit (observation unit) and mobile procedures.

2.11 Texas Children's Hospital, Houston

During my two weeks I spent a couple of days at Texas Children's Hospital with Kristen Daniels who is a Physicians Assistant in Plastic Surgery. Plastic Surgery is a speciality I had never seen before and the surgeries were fascinating. Kristen saw patients in clinic with the attending, assisted in theatre and managed the ward patients. The physician's assistant took turns having a theatre week and having a 'ward week', this model of working was the most similar to the SCP role.

There was a lot of emphasis placed on PA teaching and education, each Physician Assistant was allocated money yearly for money to attend conferences for their continuing professional development. The hospital also organised formalised education for the hospital physician assistants to keep them up to date for their clinical practice and education.

3.0 Learning Outcomes and Emerging Themes

At first I struggled to adjust to both the healthcare system, the terminology and the range of roles. Reassuringly I always felt comfortable in the clinical environment and there were a lot of similarities across the board. At times being a Surgical Care Practitioner can be quite isolating particularly if you are the only one in your trust as I am, one of the things I enjoyed most was coming to the realisation that even in different countries and different healthcare systems many of the issues facing professionals in advanced roles are the same. Having said that the 'middle grade' system was extensively established in the United States and the roles are clearly defined, there are very good support networks in each hospital for advanced roles and a significant focus on education and training. A lot of emphasis is placed on staff engagement and staff morale.

3.1 Generic vs Specalist Training

One of the strengths of the Physicians Assistant role is that it is generic, with practitioners being trained for both primary and secondary care within a number of specialities. This allows flexibility for the individual practitioner and workforce planning. Physicians Assistants then specialise once qualified and have additional training and assessments to allow them privileges in linking with the physician they are working with and the specialism. Nurse Practitioners on the other hand train within specific pathways such as Acute care or Family Nurse Practitioner. This makes it more difficult for Nurse Practitioners to change direction in their career. Also due to the availability and cost of Nurse Practitioner programmes I spent time with a number of Nurse Practitioners who were working in surgery or intensive care environments without an Acute Nurse Practitioner qualification but whom were allowed to perform these jobs due to previous clinical work. However individual organisations are now requiring more specific training either grandfathering existing Nurse Practitioners or expecting them to carry out additional training such as the critical care Nurse Practitioner course. To an extent I feel that nurse practitioners have almost made themselves too specialised to their detriment.

3.2 Medical Model vs Nursing Model

One of the things that I found perplexing about the Nurse Practitioner and Physicians Assistant role is whether practitioners who have the same scope of practice for a medicalised role should be trained using the nursing model as Nurse Practitioners or utilising the medical model as the Physicians Assistants. I am of the opinion that if you are going to work in a medicalised role then you should be trained by Medics, assessed by medics and have assessments which are the same or comparable to a Medical Practitioner which is what currently happens for Surgical Care Practitioners. It can only be a benefit for a practitioner to be trained within the same model as others undertaking the role. However the benefits to training a practitioner within a different model such as the Nurse Practitioner is that they think differently and have a different view point to a medic and this has its

benefits. If you think differently you consider alternative methods and aspects of care which can be discussed with medics to ensure a holistic approach resulting in optimised patient care.

3.3 Level of Training

The current level of Nurse Practitioner training is Masters but it is transitioning into Doctorate level, when I asked some of the Nurse Practitioners the rationale for this some felt it would enable them as professionals to be in educational alignment to medical staff and other healthcare professionals. The Doctorate has a clinical focus rather than research and the Nurse Practitioners are not allowed to refer to themselves with the title of doctorate within the clinical environment to minimise confusion. The course for the doctorate includes more leadership and implementing change content including an increase in clinical hour requirements. The reason for this change to doctorate level seems to be partially political and for the nursing profession to 'keep up' with some of the other health care professions. The Physicians Assistant courses may follow suit to be able to compete with the educational standards set by some other healthcare professionals in particular the Nurse Practitioners specifically in areas where competition with Nurse Practitioners is rife. The sceptic in me believes that higher education does not necessarily reflect in better patient care and clinical practice, some of the best practitioners I have worked with have been educated to certificate and diploma levels. Although I acknowledge that for advanced practice Masters levels study should be required due to the level of critical thinking and autonomy but I do not feel a doctorate level of education is necessary for a Surgical Care Practitioner. Also to reduce the competition which is generated within some areas of the United States it may be best to train both Surgical Care Practitioners and Physicians Assistants together to increase an understanding and appreciation of each other's roles and encourage collaboration and support within advanced roles.

Physicians Assistant education, first year didactic with no clinical placements but history taking on a Friday morning to be written up and presented on Monday. I find it hard to teach practical, clinical principles when Physicians Assistant students may have no healthcare background. The education is more exam based rather than assignment focused as in the U.K. with an exam following each clinical rotation in addition to the clinical assessments.

3.4 Physicians Assistant vs Nurse Practitioner

Prior to observing the roles in the United States I was unsure what the scope of practice was for each role and how they compared with each other. Having spent time in clinical practice following both Physicians Assistants and Nurse Practitioners in a number of institutions and specialities it was apparent to me that the scope of practice was the same. So why would you employ a Physicians Assistant or a Nurse Practitioner? When I asked clinicians this question they told me that in some institutions a job advert is put out for both roles to apply

and the successful candidate is then selected on their clinical experience. However some clinicians said that doctors tended to prefer the type of practitioner they had worked with during their training. So if a doctor had worked mainly with PAs they would then prefer to work with them once they were in a Consultant position. Alternatively other consultants would have a couple of advanced practitioners preferring to have Nurse Practitioners in an outpatient setting or intraoperatively and a Physicians Assistant for inpatient work.

Practitioner's perspectives for the differences between the Nurse Practitioner and Physicians Assistant were;

One of the main differences between the roles is the level of autonomy. The general consensus is that nurse practitioners are more independent as they have their own licence. Compared with Physicians Assistants who do not have an independent licence but are linked to the doctors licence. However within the acute setting the nurse practitioners are restricted institutionally. Within the primary care setting they can run independent practices.

The other difference is that nurse practitioners consider that they are trained holistically to have an overview of all the patient's needs. Compared with the Physicians Assistants who are trained with the medical model. The benefit of this training could be that the Physicians Assistants think similarly to the doctors and are an extension of their care.

Strengths of the Nurse Practitioner is that they are considered better in clinic than Physicians Assistants who excel technically and who do not need additional training to first assist. For this reason Physicians Assistants tend to be utilised more in theatre as first assistants, although during my observation it has been the opposite with Nurse Practitioner assisting and Physicians Assistants covering the ward patients.

I have been advised that I would have seen somewhat different roles on the West Coast where there is more focus on ambulatory care-including ambulatory surgical centres. Also some of the highest per capita numbers of Physicians Assistants are on the West Coast, specifically in Alaska where Pas are widely used in small towns and remote village s which emphasises how flexible the career is and responsive to a wide range of needs.

In some hospitals I have visited the surgeon had a mixture of both practitioners with the care of patients divided. In some of the institutions a job is advertised that both practitioners can apply for. However this is in the acute setting. Due to the increase in autonomy nurse practitioners may be more popular within the primary care setting. In my opinion a mix of both nurse practitioners and physicians assistants is the optimum

workforce as there are strengths in practitioners with different training and viewpoints which lead to enhanced patient care.

It is an obvious statement but Nurse Practitioners have to be a qualified nurse prior to studying to become an Nurse Practitioner. The same is not true for the Physicians Assistant who only have to of had a specific number of clinical hours prior to applying to study as a Physicians Assistant. This previous clinical experience is deemed beneficial in both the organisational skills of the Nurse Practitioner and their ability to handle clinical situations due to enhanced clinical judgement.

Of course the above opinion is a somewhat personal opinion of the practitioners I have met. In truth having observed both roles in the acute setting it is difficult to truly see a difference other than individual characteristics of the practitioner and I have been equally impressed with both roles. Overall the main influence seems to be the doctors preference influenced by their experiences.

The Nurse Practitioner role is considered more of an advanced role due to the level of study (masters) and level of autonomy compared with the Registered Nurse First Assistant role which is considered more of an enhanced role. However to first assist the Nurse Practitioner must have additional training on an Registered Nurse First Assistant course.

3.5 Protected Titles

Both the Nurse Practitioner and the Physicians Assistant have protected titles within the United States this enables stricter governance over both training and scope of practice. Educational facilities that run the programmes have to be in line with the educational restrictions outlined by the national organisations. It also minimises confusion for clinicians, managers and the public who come into contact with these advanced roles. Within the U.K. we do not have protected titles for the Surgical Care Practitioner or Physicians Assistant role, this adds to the confusion of different roles as practitioners with differing levels or training and scope of practice will adopt a title which may not be in linking with what would be nationally identified as that role. For roles such as the Surgical Care Practitioner which is continuing to develop and a protected title will be imperative in the implementation and definition of the role clinically.

3.6 National Certification

The United States practitioners including both the Nurse Practitioner, RNFA and Physician's Assistant all need to pass a national accreditation exam. The requirements for practitioners vary in clinical hours but they all require a recognised accredited course. Currently Nurse Practitioners do not have to re-examine but keep up their certification with continuing professional development. However Physicians Assistants currently have to retake the exam every six years and this is moving to every ten years, however they also have to prove they are continuing their professional development. I really like the concept of a national certification as this sets a minimum for everyone within a specific role. It also ensures that all practitioner fulfil an accredited course as this is a requirement to be suitable to take the exam. Also due to the titles of each role are protected and national standard due to accreditation there is less confusion surrounding the advanced roles and their scope of practice.

3.7 Scope of Practice

The scope of practice of both the Nurse Practitioners and Physicians Assistants fluctuates depending on a number of factors. Firstly as mentioned practitioners need to achieve national certification, I really liked the idea of this as a I standardised test helps to ensure quality and consistency. Following certification at a national level each state then has its own individual restrictions and regulations for the advanced roles scope of practice. This fluctuation impacts on the scope of practice allowing practitioners in some states a wider scope. As mentioned previously the Physicians Assistants had discussed with me the internal competition with RNFAs and certain areas nationally where either role was stronger. I believe this is potentially a result of the fluctuating scope of practice impacting on both roles depending on the state in which they are practicing. Once the practitioner is employed each individual institution has its own restrictions and privileges and guidelines for the practitioners. For 'privileges' the practitioner has to apply to the directorates for approval and then fulfil the required competencies and assessments. Which are usually some extended practices linked with their specific speciality. As mentioned in the acute setting this is commonly the same in the acute settings for Nurse Practitioners and Physicians Assistants.

One of the main differences between the Nurse Practitioner and the Physicians Assistant role within the United States is that although both roles are certified Physicians Assistants are not registered. Due to this the Physicians Assistants practice is linked directly with a Physician including their privileges. They are not allowed to set up independent practice as NPs are and are more limited in their level of autonomy particularly in the primary care setting, however within the hospital setting this does not really affect the roles. I envisage that due to Physicians Assistants not being registered within the U.K. their role will be

inhibited compared to the United States counterparts particularly due to not having prescribing rights.

3.8 Comparisons to of PA and NP to the Surgical Care Practitioner

Whereas the Surgical Care Practitioner practitioners are trained for a surgical speciality the same is not the case for the Physicians Assistant or the Nurse Practitioner. I have met a number of Nurse Practitioners who have their qualification in primary care rather than acute care. The reasons for this vary on availability and accessibility to the NP courses in their area. However currently they are able to work in an acute setting mainly due to their previous nursing experience. They have had additional 'on the job' training to bridge their knowledge gap. However there is a potential that this will be stopped in the future and an Nurse Practitioner in a role equivalent to the Surgical Care Practitioner will need an acute Nurse Practitioner qualification. This is more complex when an Nurse Practitioner is in a role which incorporates both adults and children as they may require additional study on an Nurse Practitioner child course. Again this has yet to be enforced. This is something to think about if the potential Surgical Care Practitioner trainee has a child nurse qualification but may wish to apply for an adult Surgical Care Practitioner role.

PAs are also not specifically surgically trained but genetically trained with fifteen four week clinical rotations in their training. They too need additional training should they wish to work within a surgical speciality. One of the main differences compared to a Surgical Care Practitioner are that rather than following the whole patient journey as most Surgical Care Practitioners do incorporating pre-, peri- and post-operative care most Physicians Assistants and Nurse Practitioners are either inpatient or outpatient. Most consultants had two advanced practitioners one which was ward based and the other who predominantly worked in outpatients. They also had a registered nurse first assistant to provide assistance intra-operatively. I personally prefer this aspect of the Surgical Care Practitioner role, I enjoy following the patient journey and I believe as a practitioner a better rapport is built up with the patient and their family which is to the benefit of the patient and practitioner.

The closest comparable roles in the United States to that of the surgical care practitioner (SCP) are the Physicians Assistant and the Nurse Practitioner with additional RNFA training. The scope of practice for both of the United States Roles are very similar clinically. Both are advanced roles the scope of which includes first assistant, ward rounds, ordering bloods and tests and prescribing. Both practitioners currently study at master's level with the NP following a nursing model of training and the Physician's Assistant following a medicalised model.

Despite being established longer than the U.K. equivalents I was surprised to find that in some aspects the Physicians Assistants and Nurse Practitioners were not as advanced. None of the practitioners I shadowed carried out independent ward rounds or independent

operating. I also strongly believe that overall within surgery the Surgical Care Practitioner is the most appropriate role choice.

3.9 Registered Nurse First Assistant compared to Surgical First Assistant

I have found that there are a number of similarities between the Registered Nurse First Assistant role and the Surgical First Assistant role. Both roles require the practitioner to work within the perioperative environment under the supervision of a surgeon and working as an additional member of the team, not in a dual role capacity. Both roles are considered expanded perioperative roles with delegated medical functions. The scope of practice is fairly similar between the two roles with the main difference being that the position statement for Registered Nurse First Assistant incorporates suturing as part of their basic scope of practice. From the two courses I have observed the students are taught and observed suturing and knot tying in an educational setting and then also assessed in the clinical environment.

Basic surgical skills training is viewed as a necessary and integral part of the Registered Nurse First Assistant which is equivalent to the U.K. Surgical First Assistant Role and Physicians Assistant programmes. Basic surgical skills are not outlined in the SFA position statement (PCC, 2012) document as part of the scope of the basic SFA training but are incorporated into the scope of practice of the Surgical Care Practitioner (RCS, 2014). There has recently been some discussions within the U.K. regarding basic surgical skills and whether they are considered part of an Surgical First Assistant or Surgical Care Practitioner role. Although I agree that basic surgical skills courses would not be considered part of a basic SFA course, I agree with the U.S. practitioners who feel superficial wound closure is a basic aspect of being a Surgical Assistant. If there is a clinical need for the additional basic surgical skills I feel that rather than in-house training a practitioner should complete a Royal College of Surgeons Basic Surgical skills course (in line with the junior doctor training), undertake a university accredited module encompassing the necessary underpinning knowledge and have the necessary risk assessments and advanced skills reflected in their job descriptions and policies and protocols which would be on par with the training of Surgical Care Practitioners for the same skills.

Incorporated within the Physicians Assistant education is surgical assisting skills and basic surgical skills however this is not part of the Nurse Practitioner education. Therefore Nurse Practitioners who wish to work within a surgical speciality and assist need to undertake additional training in the form of the Registered Nurse First Assistant (RNFA) Course.

Another important difference is that the Registered Nurse First Assistant course is only for registered nurses, the Surgical First Assistant course due to the UK healthcare system also allows other practitioners such as Operating Department Practitioners (ODPs) to access the course. The U.S. system does not have these practitioners but does have surgical technicians

who scrub for the cases similar to the U.K. Assistant Practitioner level. However the surgical technicians have a two year course focusing solely on perioperative practice.

The Registered Nurse First Assistant can either work for the institution and be salaried or they can bill the patient's insurance company independently. All Registered Nurse First Assistant s including students are required to have their own malpractice insurance.

The Position statement for the Registered Nurse First Assistant role acknowledges that the RNFA scope of practice is variable depending on a number of factors; patient population, practice environment, service provider, accessibility of human and fiscal resources , institutional policies and state nursing requirements. For example Pennsylvania where I have just spent time with the Registered Nurse First Assistants their scope of practice in their state allows them to perform any intervention that they have been trained to do by a physician. Similarity to the Physicians Assistants the guide they use to determine how many times a practitioner needs to carry out a specific skill under supervision before being signed as competent is linked with that of a trainee doctor.

4.0 Conclusions and Recommendations from Fellowship

4.1 Protected Titles (Scope of practice and Education)

In the United States the Physicians Assistant title and the Nurse Practitioner title are protected. This eliminates any confusion regarding the scope of practice and education undertaken by the practitioner. Within the U.K. due to a lack of protected titles there is added confusion surrounding advanced roles including the Surgical Care Practitioner role as both the scope of role and educational requirements fluctuate from trust to trust. By following the U.S. model and moving to protecting titles would help minimise confusion and reassure both patients and professionals due to standardisation.

4.2 Nationally accredited and standardised courses

All educational facilities that run the Physician's Assistant Course within the U. S. are required to meet a national standard. The Accreditation Review Commission on Education for the Physician Assistant defines the standards for physician assistant education and evaluates PA programmes to ensure their compliance with set standards. The Physician Assistant Education Association (PAEA) is a national organisation representing physician assistant educational programs in the United States, currently, all of the accredited programs in the country are members of the Association. The Association is the organization primarily responsible for collecting, publishing, and disseminating information on the PA programs. PAEA provides effective representation to affiliated organizations involved in health education, health care policy, and the national certification of PA graduates. PAEA works to ensure quality PA education through the development and distribution of educational services and products specifically geared toward meeting the emerging needs of PA programs, the PA profession, and the health care industry.

The AORN provides the Standards for the RN First Assistant Education Programme, it provides an educational framework for the development and implementation of RNFA programmes (AORN, 2013).

Within the U. S. , the National Organisation of Nurse Practitioners Faculties (NONPF) creates guidelines for Nurse Practitioner Courses. The universities are then accredited by specific nursing boards.

4.3 No in house training (quality control)

The Physician's Assistant title is protected within the U.S. and all of the programs are accredited by the ARC-PA resulting in no in-house training courses. The Nurse Practitioner courses are also accredited by the Nursing Boards in line with the national guidelines for the NP course written by NONPF.

4.4 Incorporation of basic surgical skills into SFA role

As previously discussed basic surgical skills are incorporated into the registered nurse first assistant course and the Physician's Assistant courses as integral aspect of first assisting. I feel that it would be appropriate to incorporate basis surgical skills into the surgical first assistant U.K. role.

4.5 PA needs to be a regulated role in U.K.

Currently within the U.K. the physician's assistant role is not regulated this would negatively inhibit the scope of practice and development of the role. By regulating the PA role it ensures professional accountability and will help with the inclusion of prescribing into their scope of practice in the future. Within the U. S. the role is certified but not regulated with the accountability of the practitioner linked directly with the Physician that they work with.

4.6 Physician's Assistant prescribing rights

A large proportion of the inpatient Physician's assistant role in the U.S. incorporates prescribing of medications. Physicians Assistants are not professionally regulated currently within the U.K. nor do they have the legal right to prescribe. As prescribing is an action covered by the Medicines Act they are unable to have local arrangements for this or to use Patient Group Directives. They are also unable to order certain scans; they cannot order x-rays or CTs but can order ultrasounds and MRIs. Physicians Assistants once they are a registered profession should be allowed prescribing rights to enable them to perform to the role potential.

4.7 National Standardised Exam

The US practitioners including the Nurse Practitioner, RNFA and Physician's Assistant all need to pass a national accreditation exam. The requirements for practitioners vary in clinical hours but they all require a recognised accredited course.

PAs are were recently required to take the exam every six years but this was changed this year to every ten years, therefore anyone who had their exam this year or had their exam this year will begin the ten year cycle. For other practitioners this is a 'one off' requirement which is maintained through clinical practice hours and continuing professional developmental hours.

I really like the concept of a national exam as this sets a minimum for everyone within a specific role. It also ensures that all practitioner fulfil an accredited course as this is a requirement to be suitable to take the exam. Also due to the titles of each role are protected and national standard due to accreditation there is less confusion surrounding the advanced roles and their scope of practice.

However there are two other influences on a practitioners scope of practice.

Firstly, as mentioned previously each individual state has its own regulations. This fluctuation impacts on the scope of practice allowing practitioners in some states a wider scope.

Secondly, the institution within which the practitioner work has its own set of guidelines. For 'privileges' the practitioner has to apply to the directorates for approval and then fulfil the required competencies and assessments. Which are usually some extended practices linked with their specific speciality. As mentioned in the acute setting this is commonly the same in the acute settings for Nurse Practitioners and PAs.

Following qualification from nationally accredited course both the nurse practitioner and physician's assistant have to undertake the exam to gain national certification. The nurse practitioner maintains this certification through continuing professional development however the physician's assistant in addition have to retake the certification exam currently every six years however that is moving to every ten years.

In addition to RN registration nurse practitioners are required to take a certification exam within their state. They maintain this by continuing education specific to their speciality area and pharmacology which is a separate registration, CRNP.

National certification ensures that every advanced practitioner is at a minimum standard, a required educational standard is necessary for the practitioner to successfully achieve national certification. The practitioner maintains certification either though re-examination or continuing professional development. This would give reassurance to public and professionals regarding the required standard of knowledge of practitioners.

The Royal College of Surgeons have attempted to set an educational standard for the Surgical Care Practitioners with the National Curriculum and the accreditation of a number of courses across the U.K. However for pre-existing surgical care practitioners this would enable them to take the exam as proof that they have an equal knowledge base to achieve the national certification and be allowed onto a Voluntary register.

In the U.K. Physicians Assistants are required to take a national exam which may be incorporated into their completion of their course as part of their overall assessment. The National Assessment is a multiple choice exam and OSCE.

4.8 Separate section on register to identify Advanced Practice

Currently on the Nursing and Healthcare professional register there is nothing to identify that the practitioner is undertaking advanced practice with the exception of the non-medical prescribing course.

By identifying those practitioners undertaking advanced practice it would enable both the Nursing and Midwifery Council and the Health and Care Professionals Council to have a better understanding of the scope of practice of the individuals and also the number that are working within the U.K. which is currently unknown.

As mentioned certification nurse practitioners are registered separately as Certified Registered Nurse Practitioners by the American Nurses Credential centre (ANCC) and they hold a license within the state within which they work.

4.9 Advanced code of conduct

In linking with the 'advanced' section on the register an additional code of conduct which reflected the advanced roles would be beneficial to support and clarify the identity of advanced roles.

I was so fortunate to have this opportunity to look at different advanced roles within a different healthcare system. I have met people whom I would consider both colleagues and friends and for that I will be forever thankful. I would like to take this opportunity to thank the Winston Churchill Memorial Trust for believing in my vision and supporting me to further my learning.

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7. Glossary of U.K. and U.S. Roles Definition

Advanced Nurse Practitioner; The DH (2010) benchmark for advanced level nursing provided by this position statement is generic in that it applies to all clinical nurses working at an advanced level regardless of area of practice, setting or client group. It describes a level of practice, not specialty or role that should be evident as being beyond that of first level registration.

Nurse Practitioner; A U. S. Nurse Practitioner (NP) is defined as, 'NPs are …. clinicians that blend clinical expertise in diagnosing and treating health conditions with an added emphasis on disease prevention and health management, NPs bring a comprehensive perspective to health care' (http://www.aanp.org/all-about-nps/what-is-an-np).

Physician's Assistant; A U. K. Physician Assistant (PA) is defined as, 'someone who is: a new healthcare professional who, while not a doctor, works to the medical model, with the attitudes, skills and knowledge base to deliver holistic care and treatment within the general medical and/or general practice team under defined levels of supervision. The role is therefore designed to supplement the medical workforce, thereby improving patient Access' (DH, 2012; p.2).

Physician Assistant; A U. S. Physician Assistant (PA) is defined as, 'A physician assistant (or PA) is a nationally certified and state-licensed medical professional. PAs practice medicine on healthcare teams with physicians and other providers' (https://www.aapa.org/what-is-a-pa/).

Registered Nurse First Assistant; The Association of periOperative Registered Nurses defines the registered nurse first assistant (RNFA) as, 'a perioperative registered nurse who functions in an expanded role, working in collaboration with the surgeon and health care team members to achieve optimal patient outcomes. Intraoperatively, the RNFA practices at the direction of the surgeon and does not concurrently function as a scrub nurse' (http://www.aorn.org/RNFA/)

Surgical Care Practitioner; A Surgical Care Practitioner is defined as: 'A registered non-medical practitioner who has completed a Royal College of Surgeons accredited programme (or other previously recognised course) , working in clinical practice as a member of the extended surgical team, who performs surgical intervention, pre-operative care and post-operative care under the direction and supervision of a Consultant surgeon ' (DH, 2014 p.13).

Surgical First Assistant; Defined as, 'Role undertaken by a registered practitioner who provides continuous competent and dedicated assistance under the direct supervision of the operating surgeon throughout the procedure, whilst not performing any form of surgical intervention' (PCC, 2012 p.1).

7. Professional Organisations

- American Academy of Nurse Practitioners (www.aanp.org)
- American Academy of Physician Assistant (www.aapa.org)
- American Nurses Association (http://www.nursingworld.org/
- American College of Nurse Practitioners (www.nurse.org)
- American Nurses Credentialing Centre (www.nursingworld.org/ancc)
- Association of Perioperative Practice (http://www.afpp.org.uk/)
- Association of periOperative Registered Nurses (www.aorn.org)
- National Commission on Certification of Physicians Assistants (www.nccpa.net)
- Nurse Practitioner Central (www.npcentral.net)
- Physician Assistant Education Association (www.paeaonline.org)
- Royal College of Nursing (www.rcn.org.uk)
- Royal College of Physicians (www.rcplondon.ac.uk)
- Royal College of Surgeons (https://www.rcseng.ac.uk)
- The Accreditation Review Commission on Education for the Physician Assistant (www.arc-pa.org)