Preparation for Practice: An Exploration of Medical Students' Preparedness for Professional Practice

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Abstract

How well new medical school graduates are prepared to begin their first post as a doctor has received much focus in medical education. Research has indicated that new graduates can often feel unprepared for professional practice. This has subsequently informed the structure of policy documents on undergraduate course structure from the General Medical Council, with emphasis of structuring placements – student assistantships – where final year students take on some responsibilities of first year post-graduation doctors.

A multiple methods study was performed at a medical school in the United Kingdom. Its aim was to explore preparedness of final year medical students with particular focus looking at experience gained during these student assistantship placements. Quantitative methodology was used with a survey undertaken looking at clinical skills gained by final year medical students. A qualitative study was performed with focus groups with students and newly graduated doctors; and face to face individual interviews with representatives from groups of senior professional doctors: placement supervisors, representatives of stakeholders of undergraduate and postgraduate education; and representatives with senior positions in NHS Trusts. Involving these multiple participants allowed exploration of preparation both as a quantifiable phenomenon of measurable skills and outcomes and also in gaining insight and understanding into preparedness by considering the social structure around the student and the new doctor. Bourdieu's concepts of field, habitus and capital - from his theory of practice - were used to contextualise the findings and help present the complex concept of preparedness incorporating both the individual learner factors and the environment around them. This approach identified how preparation was not only influenced by what knowledge and clinical skills students and new doctors had achieved but also how it was influenced by changes to workplace like team structure, reconfiguration of training, and differing expectations of new doctors.

Contents

List of tables

List of figures

Preface

I undertook this study as a sole researcher, with its field work, analysis and write up occurring from September 2010 to Dec 2016.

The project was commenced whilst I was working as a trainee doctor in the United Kingdom (UK) having moved from full time to part time clinical training in order to gain gaining out of training programme experience as a clinical fellow in medical education.

The original objective was to generate a largely descriptive and evaluative account of what medical students did during their student assistantships at a medical school in the UK and whether this prepared them for professional practice.

The quantitative study – a survey of clinical skills and acute experience gained– was based on this remit and was performed throughout the academic year for the cohort graduating in 2011 (September 2010 to July 2011).

Parallel to this questionnaire, focus groups were performed with first year postgraduate (Foundation Year 1) doctors and with final year medical students. Interviews with placement educational supervisors took place during this time as well.

As analysis began it became apparent that the project would need to be expanded to also understand the social structure around the student and its impact on preparation. The expanded project resulted in further interviews with 'stakeholders' – National Health Service (NHS), university and postgraduate education representatives. These were performed throughout 2012.

I had returned to full time clinical training in October 2011 and continued the remaining fieldwork for this project around full time work with ongoing analysis and write up progressing into my time as a full time NHS consultant in the United Kingdom.

During the time course of this project there have been ongoing changes in the medical education field with further General Medical Council commissioned research into preparation and updated policy. I have included this information in an up to date literature review but as progress was well underway did not change my approach to the enquiry.

Thesis Overview

This thesis is divided into five chapters.

- *Chapter 1* presents the background to the study. This includes a description of the changes to undergraduate and postgraduate education in the UK. It also presents how preparedness remains an important area of focus in medical education and practice. This allows an understanding of the current medical education environment where this research took place.

- *Chapter 2* presents a literature review on the area of preparedness with the particular focus being preparedness of new medical graduates for professional practice.

- *Chapter 3* outlines the research objectives of this project.

- *Chapter 4* outlines the methodology of the study including a discussion of the choice of quantitative and qualitative methods to address the research objectives as well as the theoretical perspectives behind this approach.

- *Chapter 5* presents the results, analysis and discussion of the quantitative questionnaire study that explored clinical skills and acute experience gained during student assistantships.

- *Chapter 6* presents the results and analysis of the qualitative study. Despite the analysis of four groups involved (medical students, Foundation Year 1 doctors, placement educational supervisors, stakeholder representative) being done separately the analysis is presented together, to avoid repetition of themes.

- *Chapter 7* discusses the findings of the work and contextualises and integrates the themes identified in Bourdieu's theory of practice to present a greater understanding of preparation. It then provides recommendations for practice. This is followed by a reflection on the study considering its strengths and weakness and implications.

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I wish to thank all the participants who volunteered their own time to help with this project.

Finally, I wish to thank my family for their tolerance and support during the long gestation of this work.

Declaration

I confirm that this work is original and that if any passage(s) or diagram(s) have been copied from academic papers, books, the internet or any other sources these are clearly identified by the use of quotation marks and the reference(s) is fully cited. I certify that, other than where indicated, this is my own work and does not breach the regulations of HYMS, the University of Hull or the University of York regarding plagiarism or academic conduct in examinations. I have read the HYMS Code of Practice on Academic Misconduct, and state that this piece of work is my own and does not contain any unacknowledged work from any other sources.

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Dec 2016

Chapter 1
Introduction

This introductory chapter outlines the background to the considerable medical education reform in the United Kingdom (UK) in the last three decades. It allows this project - that focuses on preparedness of new medical school graduates - to be viewed in the context of recent national policy and practice, and regulatory changes.

1.1 Postgraduate Training Reform

In postgraduate medical education, reform in training has included the introduction of the specialist registrar grade in 1995. This was in response to the Calman report (Calman, 1993). In 1992, a working group chaired by Dr Kenneth Calman, then chief medical officer, was tasked by the Secretary of State for Health, with bringing UK specialist training in line with training in Europe in response to infraction proceedings, against the UK, that had been commenced by the European Commission. This report recommended the restructuring of postgraduate specialist training, with individual specialties having a set structured, curriculum-based, training programme, with satisfactory progression based on annual formal assessments of competence. This resulted in shorter and more focused specialist training resulting in the certificate of completion of specialist training. The previous system had resulted in long periods as a registrar and senior registrar.

The postgraduate training structure was changed again a decade later through Modernising Medical Careers (MMC) (Donaldson, 2002) (Department of Health, 2003) (Department of Health, 2004). Whereas the Calman report had focused on higher specialist training, the MMC reform affected the whole of postgraduate training from the first postgraduate year after qualification to the completion of training.

Under the initial MMC proposals the new graduate would enter a two year foundation programme (FP) before progressing onto specialty training. The initial plan had been for a single point of entry into specialty training, following the FP, and this would "run-through" to completion of training. Whereas implementing the two year FP in 2005 occurred with no major issues, significant problems were

encountered in 2007 at the subsequent implementation of MMC at the specialty training stage and in particular the medical training application system (MTAS) - the application system for entering this stage. A House of Commons Health Committee Inquiry (2008) as well as Professor Tooke's Inquiry (Tooke, 2008) investigated the cause of the issues and problems regarding MMC. They identified problems with the design, introduction and application of MTAS but Tooke also pointed out that the final MMC structure was contrary to the initial aims. Donaldson's original report (Donaldson, 2002) commented on the lack of a structure for Senior House Officer (SHO) training resulting in many at this grade being in short term and stand-alone posts that were not part of a larger training programme. He also pointed out that there was no set end-point to SHO training and some doctors at this grade could remain at this level for several years before progressing to higher specialist training – the term "lost tribe" was applied to these doctors.

The main focus of Donaldson's original report was on restructuring the SHO grade as the specialist registrar grade had been changed through the Calman changes a few years earlier; but at the same time have a continuum from entering professional practice to completing training. Further deficiencies at the SHO level of training included limited supervision, no clear competencies to achieve and increasing workload. Donaldson's original five principles of reforming the SHO grade were that it should be "programme-based, time-limited, broad based to begin with, flexible and tailored to individual needs" and that this flexibility in the programmes should extend to them allowing the trainees to leave and re-enter training. The FP was designed to be broad with new graduates spending time rotating through six four month posts including community placements. This was scheduled to be followed by broad "basic specialist training" in about eight different specialties before narrowing down to subspecialties after two years.

The detailed plan for MMC with the "run-through" training aimed to make medical training more "structured and streamlined" (Department of Health, 2004). In addition to this it aimed to be "trainee-centred; competency-assessed; service-based; quality-assured; flexible; and coached." However by attempting this, through a more rigid single point of entry, Tooke (2008) found that the flexibility that Donaldson had originally envisioned had been lost. Tooke also advised on major changes in the governance of medical education and training, ultimately resulting in the creation of

Health Education England that now leads on training, education and workforce development and the post graduate medical education training board merging with the General Medical Council (GMC) resulting in the GMC becoming the regulator of both undergraduate and postgraduate training.

With regards to MTAS, criticisms from the two inquiries were concentrated on its poor design resulting in its inability to discriminate differing levels of experience between applicants and therefore considered unfair by many; a higher number of applicants than anticipated - especially from overseas - which resulted in more competition; interface, security and operational difficulties with the system that was also felt to have been rushed and too ambitious.

Not all of the Tooke recommendations were eventually adopted; particularly related to the structure of training. The FP, which Tooke had suggested should be discontinued, was retained; but beyond this level flexibility was allowed so that individual specialities decided on their length and structure of training with some retaining run-through training (e.g. General Practice, Obstetrics and Gynaecology and Paediatrics) and others (e.g. Medicine, Surgery, Anaesthetics) "un-coupling" this with "core" training for two to three years after FP before application to "higher" training. The adoption of this was an attempt to answer the criticism that run-through training was too rigid and competencies and capabilities were difficult to take from one run-through system to another hence the requirement for a "core" training scheme. Those specialties that retained run-through training did so as they felt their training programmes had in-built flexibility from the outset.

1.2 Undergraduate Training Reform

There has also been significant change in undergraduate medical education over the last three decades as well. With *Tomorrow's Doctors* 1993 (General Medical Council, 1993) guidance and recommendations were provided by the GMC for undergraduate medical training. This was then extensively revised and expanded in *Tomorrow's Doctors* 2003 (General Medical Council, 2003) and *Tomorrow's Doctors* 2009 (General Medical Council, 2009).

With the 2009 document there were a large number of changes from the previous documents. The earlier publications had largely been focused on guiding on undergraduate medical school course structure and delivery. The 2009 document was informed by GMC commissioned research (Illing *et al*, 2008). Specific training outcomes were stated and the document was more prescriptive. The outcomes were presented under three headings: "professional"; "practitioner" and "scholar and scientist". The first of these – "professional" – was concerned with outcomes related to understanding the NHS, team-working and leadership, awareness legal and ethical issues. "Practitioner" detailed skills like prescribing, and practical procedures and also communication skills. The category of "scholar and scientist" was concerned with outcomes related to the scientific basis that is needed.

Tomorrow's Doctors 2009 had a particular focus on "preparedness" for the FP and working in the NHS as well as the broader preparedness required for a career in medicine and lifelong learning. There was the requirement to develop a student assistantship where final year students would take on some of the duties of first year postgraduate doctors.

1.3 Regulatory Change and Increased Media Profile of Accountability

As well as this restructuring of undergraduate and postgraduate medical training over the last three decades, there has also been increased profile in the media, and the public, regarding performance and regulation of doctors, and accountability in the NHS and its governance structures. The changes in training above are themselves partly in response to this. The Bristol Heart Inquiry (Kennedy, 2001) and the Shipman Inquiry (Smith, 2004) both made training recommendations regarding appraisal, continuing professional development, and revalidation. They focused on openness and transparency regarding performance as well as accountability within the NHS and prioritising patient safety. The more recent Francis Report (Francis, 2013), Berwick Review (Berwick, 2013) and Keogh Review into mortality rates (Keogh, 2013) have maintained this focus on patient safety, standards of performance and competence, and having a culture of learning and improvement.

With regards to newly qualified doctors there has been a particular focus on preparation for starting work and the apparent increase in mortality during this "August changeover". There has been debate about whether this is a true effect and actually due to a new cohort of doctors starting (Jen *et al,* 2009) (Sharma *et al*, 2012) (Edwards *et al*, 2013). However this perception has entered the consciousness beyond the medical community as well with the lay press focusing on the issue (Rogers, 2012) (BBC News, 2011). Therefore in delivering safe care, how prepared new doctors are and their readiness to start work remains a key area of focus in policy.

1.4 The Shape of Training Review

The most recent national policy document on training was Greenaway's *Shape of Training Review* (2013). Stakeholders in medical education made recommendations on the future of training in the UK. The recommendations built on some of the initial aims of MMC discussed in detail above and addresses some of the criticisms of MMC as well such as lack of flexibility. This includes gaining broad experience during the FP and even as a specialty trainee with training programme being grouped into broader themes to allow flexibility to change from one specialty to another. This furthers the broad based training aims that were discussed in MMC but not achieved, and moves away from the "mixed economy" criticism (House of Commons Health Committee Inquiry, 2008) whereby some specialties had adopted run-through training and others not after FP. Under this most recent review dub-specialisation would occur at a later stage. It also discussed the importance of working in multidisciplinary teams, and longer placements.

Although the focus in *The Shape of Training Review* was primarily postgraduate training; undergraduate training did have some consideration in the document as well. The document discussed longer medical student attachments to learn about team working and following the care pathways of patients. Perhaps the most significant recommendation for undergraduate education was that new graduates should have full registration. Although debate surrounds whether it could be introduced; implementation of this recommendation, would require robust assessment of competence to demonstrate that new graduates were prepared for this.

Therefore the preparedness of new graduates remains a high profile area of interest in medical education.

This introduction has described medical education reform over the last thirty years and the increasing emphasis of performance and demonstration of competence and preparedness for delivering care. The focus of this project is on preparedness of new graduates from a medical school in the UK.

The next chapter is a literature review of preparedness of new graduates.

Chapter 2
Literature Review

2.1 Introduction

This chapter presents a review of the medical education literature and research that has focused on the preparation of new medical graduates for professional practice. As well as including research it also includes description of pertinent policy documents in the field as these have informed much of the research in this subject.

This project was carried out over several years from 2010 to the final submission in 2016. The initial literature review was performed in September 2010 to March 2011 during the first stages of the field work. This work informed the direction of the research and its objectives.

Subsequently, during the process of the research and analysis, further work has been published including further national policy documents from the General Medical Council (GMC) regarding preparedness for practice. This project was underway at that time so I did not change the methodology in response to these developments.

I therefore present the literature review in two stages. I present the initial literature review from 2011 culminating in a description of the student assistantship (SA) and then I present a review of the literature from 2011 to 2015. This work was reviewed in 2015 during the write up of this thesis.

By presenting the literature this way my intention is that my research and its approach can be situated in relation to the field at that time. In other words how my work fits into what has gone on before and after. This may be considered an unconventional approach, but Silverman (2011) argues that in qualitative research the literature review should be done after data analysis as only then can the researcher identify the relevant work. In the process of my research the initial literature review was a starting point in my project, so I believe should still be presented first; but this thesis also needs to present and take account of further developments in this area, hence a 'post 2011' literature review is presented.

2.1.1. Literature Search

Tomorrow's doctors 2009 had a specific focus of preparedness of new medical graduates for professional work. A literature review looking at work on preparedness was performed. The focus of the project was discussed at the UKMS medical education unit meeting. It was discussed that the entire medical course could be considered as preparation for professional practice so the boundaries of the literature search should be focused specifically on the area of interest regarding preparedness of new graduates with particular focus of the experience in the final year when students take on some responsibilities of doctors. The PubMed, CINAHL, Education Resources Information Centre (ERIC) databases were searched. The British Medical Association and GMC electronic databases were also screened for relevant work in the area of preparedness. Additionally the contents of five specific medical education journals were searched: *Medical Education, Medical Teacher, Academic Medicine, Advances in Health Sciences Education, Teaching and Learning in Medicine*. The time period focused on was from 2000 onwards and for literature published in the English language. The aim was to select material that was relevant to the experience of final year medical students and new graduates and also concerned with placements for students that had been designed for students to 'act-up' and take on additional responsibilities they would be expected to do soon after graduation.

Because differing terms were used for the individuals involved, placements that students were on, and there being no strict definition of preparedness, a wide number of search terms for subject headings, and text-words were used.

With regards to the population studied the terms searched were:

> *PRHO, pre-registration house officer, intern, junior doctor, new doctor, foundation doctor (or F1 FY1), houseman, medical student, student doctor, new graduate.*

With regards to the placements the terms searched were:

student assistantship, clerkship, shadowing, internship, locum house officer, assistantship, preceptorship, trainee intern,subinternship.

With regards to preparedness the following terms were searched:

preparedness, preparation, readiness, competent, transition.

2.2 Literature Review 2011

Since the GMC document *Tomorrow's Doctors* was first published in 1993 there have been widespread changes to UK medical school curricula in response to its recommendations. A particular focus of this document was preparation for practice and it stated that medical schools should ensure the 'newly qualified doctor is well prepared for the responsibilities of the pre-registration house officer year.'

It also focused on the importance of educational theory and attaining knowledge, skills and attitudes of a core curriculum and integrating the basic sciences with the clinical and communication skills aspects of the course. Since then there has been much work focusing on preparation of medical students for professional practice and their transition into their first jobs; and some suggesting that graduates are not adequately prepared for their first post, but also some suggesting that changes to the curricula have resulted in improving preparation.

Research on preparation has varied in its methodological approach, some studies have used a quantitative approach with questionnaires and some qualitative with interviews and focus groups. Cross sectional or cohort studies have been performed; some studies have focused on preparation in a select number of skills and some have looked at the concept of preparation generally. Additionally some have looked at the effect of interventions – like shadowing and induction courses; and some have compared effect of differing course structure. After a description of the current structure of the first postgraduate year, this work is reviewed in detail. This will be followed by a discussion on further recommended GMC changes to the curriculum.

2.2.1 Foundation Programme

As discussed in chapter 1 there have been changes in postgraduate training since 2005. The first postgraduate year was previously called the pre-registration house officer (PRHO) year. Now, in the UK, graduates enter the foundation programme (FP) on qualifying. This FP consists of the first two years of training for newly qualified doctors. It is described as a "stepping stone for junior doctors from medical school to GP/Specialty training" (UKFPO, 2010). It moves beyond undergraduate training in that foundation doctors gain experience working as a doctor and have to demonstrate competencies (including clinical and professional skills) and performance, in the workplace setting, through completion of workplace based assessments and completion of an e-portfolio. As an undergraduate, competency was largely demonstrated through formal assessments and examinations. If progress is satisfactory, foundation year 1 (FY1) doctors are able to fully enter the professional register with the GMC and progress to foundation year 2 (FY2). Successful completion of the second year allows entry to core and specialist training programmes.

In the review of literature the terms FY1 and PRHO, (or intern that tends to be used internationally) are used depending on which appears in the original studies being discussed.

2.2.2. National Surveys

A number of surveys have been performed on how doctors perceived preparation for their job. The UK Medical Careers Research Group at Oxford University has carried out much of this work. Goldacre *et al* (2003) sent questionnaires to 5330 UK PRHO doctors, from multiple medical schools, who qualified in 1999 and 2000. They asked for a Likert score response (from a five point scale) to the statement: "my experience at medical school prepared me well for the jobs I have undertaken so far." 3446 (67%) of the PRHOs replied with 4.3% strongly agreeing; 32.0% agreeing; 22.5% neither agreeing or disagreeing; 29.7% disagreeing; and 11.6% strongly disagreeing. Therefore 36.3% agreed or strongly agreed that their medical school had prepared them; but this figure varied when looked at for each individual medical school; the

range being from 19.8% to 73.0%. The individual medical schools were not identified.

Further surveys were sent to the 2003 and 2005 cohorts by the same group (Cave *et al*, 2007). 65% of the 4257 doctors from the 2003 cohort responded; and 43% of the 4784 doctors from the 2005 responded. All questionnaires were sent out about 9 months into the respective first postgraduate year. 50.3% of the 2003 cohort agreed or strongly agreed that their medical school had adequately prepared them; the figure was 58.5% for the 2005 cohort. The first study's figure had been 36.3%. Amongst the individual 23 medical schools, 19 showed improved percentages between the first and last cohort; 3 had worse percentages and 1 stayed the same. Again there was much variation amongst the medical schools ranging from 33% to 85% depending on school. The authors also stated that "new courses" had greater improvement in scores. These are courses in medical schools that followed the GMC *Tomorrow's Doctors* (1993 & 2003) recommendations. However the "old courses" tended to show increased scores too but not to such an extent. The authors concluded that preparation was improving and this may be related to changes in undergraduate medical education delivery. These studies are useful in that they involve large numbers of doctors, but a drawback is that they discuss preparation generally. There is no focus on specific areas where there has been most improvement: which skills and attributes. Additionally, as the authors mention, preparation is subjective – if a graduate feels prepared, that does not necessarily mean they were competent. The use of Likert scores may also result in respondents tending to go for the mid-point on the scale.

The British Medical Association Cohort Study 2006, (Health Policy and Economic Research Unit, 2008) asked doctors of the medical graduate cohort of 2006 to judge whether their undergraduate course had prepared them for life as a foundation doctor. This 10 year longitudinal study is following 435 doctors. This was part of the third annual report; hence, two years after graduation. Graduates were asked to rate whether preparation was "good", "adequate" or "poor" for a range of skills (Fig 2.1).
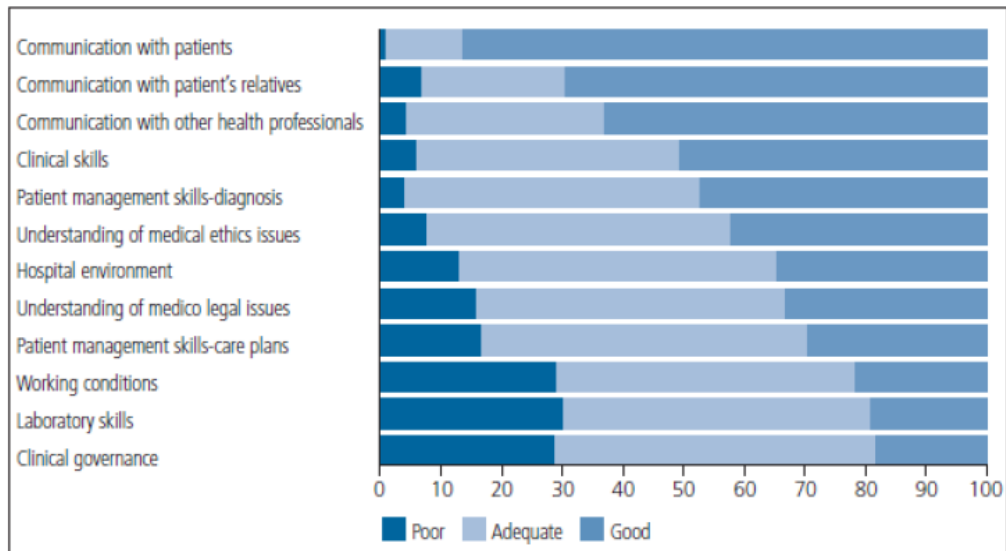
Figure 2.1 Degree to which cohort doctors judge their undergraduate course to have prepared them for life as a foundation doctor – ranked according to preparation (%) (Health Policy and Economic Research Unit, 2008).

These questionnaire results show that most graduates felt communication skills preparation was good; more so with patients and relatives, than with other health professionals. About 30% felt underprepared for working conditions as an FY1 doctor, and in laboratory skills and clinical governance.

The 2010 GMC National Training Survey (General Medical Council, 2010) found that the "majority of trainee foundation doctors had felt prepared for their first job although a minority did not." The online survey was launched on 1st April 2010 to 30 June 2010, when the majority of foundation doctors were well established in their posts. The response rate was 87.5%. 6392 FY1 doctors responded with 6300 FY2 doctors responding. They were asked whether they were prepared for their first FY1 post: 59% of FY1 doctors answered "yes" and 26.7% "no". For FY2 doctors the corresponding figures were similar at 56.1% and 28.5% respectively. The remaining doctors answered "unsure". Even though the survey was asking this question at one point in time the answers from both FY1 doctors and FY2 doctors that are one year apart were similar, suggesting that these figure may not change. This study would have included overseas graduates as well; these proportions were not stated. These figures although seemingly similar to the 58.5% for the 2005 cohort above (Cave *et*

al, 2007) may not really be directly comparable as they are using different scales – three point versus five point scales.

2.2.3 Medical School Local Studies in UK

The University of Liverpool Medical School reformed its curriculum from a traditional curriculum to a problem-based learning curriculum (PBL) in 1996. Since 2001 onwards graduates have been educated through the new curriculum. The newer curriculum followed *Tomorrow's Doctors* recommendations. The ongoing longitudinal Liverpool Curriculum Evaluation Project has looked at this curriculum change by comparing the traditional 2000 cohort with the PBL cohort from 2001 (Watmough *et al*, 2006) (Watmough *et al*, 2006a) (Watmough *et al*, 2006b) (Watmough *et al*, 2009) (Watmough *et al*, 2010). This has involved qualitative methodology with interviews with graduates of both types of course and with supervisors. Focus groups with graduates have also been performed. Quantitative methodology through surveys with graduates and supervisors has also been used.

The main findings are that the PBL course seems to have better perceived preparation in communication skills and in better confidence in adapting to the professional practice role of a doctor but less so in factual knowledge and feeling able to pass postgraduate exams. Supervisors felt PRHOs were better prepared for their specific job. Graduates of the new curriculum felt they had received good preparation for working as junior doctors, with an 8 week "shadowing" block highlighted as being an important factor in this.

Similar to the University of Liverpool, The University of Manchester Medical School attempted to compare their traditional course with a newer PBL course on how well each prepared graduates for the PRHO role (Jones *et al*, 2002). A postal questionnaire was sent to graduates of the 1998 and 1999 cohorts with the former having being through the traditional older curriculum and the latter through the newer PBL curriculum. This was sent 3 months after commencing their PRHO jobs. A questionnaire asking similar questions was sent to consultant supervisors as well. The questionnaire focused on asking about perceptions of preparation in 19 broad areas such as communication, coping with uncertainty, being aware of legal and ethical issues; and also about self perception of competence in 13 specific procedural skills like venepuncture, writing prescriptions and catheterisation. 171/256 (67%) of

the 1998 graduates responded; 163/267 (61%) of the 1999 graduates responded; and 151/189 (80%) of supervisors supervising 1999 graduates, and 169/206 (82%) of supervisors supervising 1999 graduates responded. The questions asked for a response on a 5 point Likert scale for preparation and competency. The mid-point of this scale was "quite well prepared" or "quite competent". The authors took a score above this as indicating competency or preparedness. Comparing the results of the two cohorts was through non-parametric (Mann-Whitney) significance tests. Graduates of the newer course rated themselves significantly higher in 12 of the 19 broad areas and 8 of the 13 procedural skills; but rated themselves lower in understanding disease processes.

The same group have also adopted a qualitative approach by interviewing 24 graduates from the 1998 cohort and 23 from the 1999 cohort, again three months after commencing their first post. The graduates from the newer curriculum were said to be better able to deal with uncertainty, define their personal limits, and look for support and felt better able to deal working in a team (O'Neill *et al*, 2003) (Willis *et al*, 2003).

Manchester Medical School had also specifically focused on looking at their final 7-week "consolidation period" (Whitehouse *et al*, 2002) (Jones *et al*, 2006).

This was a period of final examinations and a four week block of shadowing the PRHO who the new graduate would take over from. Semi-structured interviews with - presumably the same - 23 PRHOs as above at 3 months into their post found that one theme that emerged was the value of this shadowing. It was said to provide familiarity with the work environment, allow orientation to the PRHO role, able the graduate to learn their job and specifically focus on the job will be doing.

A qualitative study from Peninsula Medical School looked at experiences of FY1 doctors during their first post-qualification year focusing on the doctors' transition to the FY1 year and how their medical school experience prepared them for it (Brennan *et al,* 2010). It involved interviews with 31 FY1 doctors, and audio diaries of 10 of these FY1 doctors "daily practice". It found that most doctors found the student-doctor transition stressful and highlighted specific areas including: dealing with real responsibility for the first time, managing uncertainty, working in teams, experiencing sudden death of patients. It found that students who had acted up to the

role of an F1 and taken responsibility through shadowing and during rotations as an undergraduate found preparedness and transition were improved by this prior experiential learning. They concluded that students should have the opportunities to act up as an FY1 in the final year of medical school through structured placements.

At Bart's and the London, Queen Mary's School of Medicine and Dentistry, University of London, Evans *et al* (2004) specifically focused on the impact of a five day structured induction/shadowing period - prior to work commencement - of newly qualified doctors. This induction incorporated lectures and shadowing the house officer of the team with which the new PRHO would work. An Objective Structured Clinical examination (OSCE) was performed at the beginning and end of this induction and again one month after the PRHO had commenced work. It assessed the skills of blood pressure measurement, venepuncture, catheterisation and intravenous cannulation. One of 24 PRHOs passed all four stations at the start of induction, 16/23 at one week and all passed at one month (the number taking the third OSCE were not provided). It is difficult to extrapolate these findings into any firm conclusions on preparation and whether the shadowing helped as the same exam repeated at intervals may be expected to have improving results anyway. A questionnaire was completed by the new PRHOs at the start and end of this induction and again one month into their post as well (Evans & Roberts, 2006). It asked about confidence in clinical skills, anxiety and feelings on preparedness. This questionnaire was repeated on two subsequent cohorts as well. The three groups were the graduating cohort of 2000 who had been through a systems-based curriculum; a graduating cohort of 2004 who had taken an intercalated degree and were still following the old systems-based curriculum; a second graduating cohort of 2004 who had not taken an intercalated degree and were following a new PBL course. The questionnaire used 17 five-point Likert style questions exploring the three areas of confidence in clinical skills, anxiety and preparedness; but do not elaborate on the specific questions. A free-text question: "please give your three main concerns about starting your work as a PRHO" was also asked and analysed to draw out themes. The authors state that there was improved preparedness by comparing the Likert scores. Specific themes were identified from the free text entries but no firm conclusions are stated. Taking one example, just over 2% mentioned emergencies and managing sick patients as a concern in 2000, whereas

this figure was about 10% for both 2004 cohorts. Quantifying such data makes it difficult to interpret. Are more recent graduates less able to manage sick patients so identify it as a concern; or are they just more aware of their role now in managing sick patients so entered this as a concern?

Berridge *et al* (2007) also analysed their two week Preparation for Practice Course for two teaching hospitals in the North East Thames region for PRHOs prior to commencing work. The course involved formal teaching in advance life support, recognising and managing acutely ill patients, clinical skills assessment and training, infection control and death certification training and shadowing the outgoing PRHO that was to be replaced. Similar to Evans *et al* (2006) they used the same 17 item questionnaire at the beginning and end of induction and one month into the PRHO post. They also performed focus groups at these three time points with the PRHOs. Themes identified from the focus groups included that PRHOs felt anxiety taking on real responsibility, and anxiety with prescribing, decision making and workload management. The quantitative results from the measured Likert scale responses showed improvements across the domains measured at the three time points. They concluded that the short transitional program was worthwhile.

Wall *et al* (2006) sent a questionnaire to UK based PRHOs in the West Midlands deanery; about half of these were graduates from the University of Birmingham. A similar questionnaire was sent to consultants of these PRHOs. The questionnaire asked about perceptions on how well the PRHOs were prepared in a range of competencies: consultation, history-taking, clinical examination, diagnostic skills, decision-making, treatment, prescribing, record keeping, practical skills, patient respect, team working, awareness of limitations, responding effectively in emergency situations, following of safe procedures, understanding information technology, time management, responsibility for personal education. 212 consultants (60%) and 193 PRHOs (55%) responded. The Likert score for all items was above midpoint, with communication skills scoring best and treatment and decision making skills coming last.

A similar study was performed in Nottingham (Matheson & Matheson, 2009), again using a questionnaire, but surveying specialist registrars and consultants in two hospitals. Again a Likert scale was used rate perceived preparation in various areas and findings were that PRHOs were better prepared in awareness of limitations, team

working and simple procedures but not in some areas and skills like decision making and skills like suturing. The conclusion was that further experiential learning was required as a student. The same group (Matheson *et al*, 2010) also reported on their 4 week pre-work preparation course from 2007. 76/90 graduates completed an online survey that included qualitative questions as well. In this retrospective evaluation only 31% of respondents found the didactic lecture part of this preparatory course valuable but 94% found the shadowing of a junior doctor valuable for preparation.

Tomorrow's Doctors 2003 (General Medical Council, 2003) had specifically furthered advice on preparation focusing on these pre-work shadowing/induction placements: "Students must be properly prepared for their first day as a PRHO. As well as the induction provided for PRHOs, students should have opportunities to shadow the PRHO in the post that they will take up when they graduate. Such attachments allow students to become familiar with the facilities available, the working environment and to get to know their colleagues.

They also provide an opportunity to develop working relationships with the clinical and educational supervisors they will work with in the future."

2.2.4. GMC Commissioned Preparation for Practice Project

The most significant work into preparedness was Illing *et al's* GMC commissioned research project: *How Prepared are Medical Graduates to begin Practice?* (2008). This addressed the issue of preparedness through a mixed-methods longitudinal approach over three UK medical schools. It had interviews exploring preparedness of graduates of three different medical schools. It had the advantage, over previous work, in that it involved multiple sites and was longitudinal in design. It found that medical graduates felt prepared for basic clinical skills like history taking and communication but under prepared for prescribing; some complex communication tasks; clinical skill practice in the clinical environment; managing workload; managing acutely ill patients; and that knowledge of non-clinical areas like legal and ethical issues, operation of the NHS lacking at the start of the Foundation Programme. It also identified other areas such as confusion about the boundaries of the FY1 doctors. The report concluded that "medical students' preparedness is improved by more experiential learning in the workplace" and it called on the GMC

to: (i) ensure that placements had more structure and consistency, (ii) ensure that students were given a greater role in medical teams, (iii) establish fuller and more prescriptive guidelines on shadowing, (iv) specify the limits of the role of doctors in their first year after graduation (v) address particular weaknesses in prescribing.

2.2.5. Student Assistantships

Influenced by Illing *et al's* (2008) recommendations, the subsequently published *Tomorrow's Doctors* 2009 recommended that all final year medical students should have at least one Student Assistantship (SA) placement in the final year of medical school, one aim of which is to ease transition into the FY1 doctor role (General Medical Council, 2009). A separate pre-job induction/shadowing period was also recommended to aid student-doctor transition at site of work to familiarise the student with work site.

The GMC outlined the SA as a "period during which a student acts as assistant to a junior doctor, with defined duties under appropriate supervision" and "when acting as a Student Assistant, a student must not carry out any procedure or take responsibility for anything which requires provisional registration and, from the introduction of the licence to practice, a licence." Following publication of *Tomorrow's Doctors 2009* the GMC furthered that SA are "new placements undertaken shortly before a student enters *foundation 1* as a trainee doctor. They will help students become familiar with work in a hospital or community setting and to understand practical tasks such as filling in a prescription form or ordering a blood sample, students will assist a junior doctor, become familiar with the workplace and undertake supervised procedures."

The GMC stated that "we expect that medical schools are actively developing proposals and arrangements, drawing on good practice and pilots for Student Assistantships." (General Medical Council, 2010a) (General Medical Council, 2011).

2.2.6 International Research

Hitherto this review of literature, on preparation of newly qualified doctors for practice, has focused on research performed in the UK. There will follow a discussion on work done internationally on this topic.

A scheme similar to the SA – called the Trainee Intern year - has existed in New Zealand since 1972 (Nanson, 1975 cited in Allen and Colls, 1994). Similar to the SA, the trainee intern year "is to allow the transitioning student to function as a valued member of a health care team, applying their learning in everyday clinical practice" providing "hands-on" preparation for the following PGY1 [postgraduate year 1]" (Tweed *et al*, 2010). Dare *et al* (2009) evaluated this year by distributing a questionnaire to final year trainee interns and penultimate year students at Otago and Auckland Medical Schools in New Zealand. The programme involved rotations through placements in general medicine, general surgery, obstetrics and gynaecology, paediatrics, psychiatry and general practice, and students were said to be responsible for the supervised care of a third of the patients of the firm that they are attached to. Finals written examinations were taken at the end of the fifth year (the penultimate year) with assessment during the trainee intern being work based assessments and supervisor reports. Another aspect of the New Zealand programme that differs from the UK is that trainee interns were "provided with a tax-free educational grant/payment". It is difficult to say whether direct comparisons can be made in a system where an individual is paid, so could be considered a 'worker' and in the UK where the individual is a student. The questionnaire asked the two separate years to self-rate their competence on a range of skills by a 4-point scale from novice to proficient. The questionnaire was distributed prior to entering professional practice. The percentage rating themselves as competent was compared between the two year groups and was greater in the trainee intern year. The conclusion was that the trainee intern year was valuable in preparing students for practice, with 92% stating that they felt prepared to begin work as a doctor. A criticism of this questionnaire could be that different cohorts were being studied; with a year more of medical student experience, students may feel more prepared irrespective of the structure of the final year. Nevertheless, this was one of the few studies that had looked at evaluating a SA like programme. What was not made clear was what exactly "management of patients" meant; and to what extent these trainee interns were making decisions. A separate study of Auckland graduates, although focusing on the effect of the length of the final year but, also asked about anxiety and preparedness for work as a newly qualified doctor. It used a visual analogue scale, scored of 0-100. A positive result was taken as scoring ≥ 50 on the scale. 73% of students were said to feel prepared and 76% were anxious. Obviously

a significant number would have felt both prepared and anxious (Dare et al, 2009a). It is difficult to compare these figures as they present a different quantitative measure of preparation to the differing Likert scales above.

Gome *et al* (2008) looked at the experiences of interns (postgraduate year 1) and their transition from undergraduate to doctor in a teaching hospital in Melbourne, Australia. The study reported that these interns had final year attachments that were "designed as an introduction to the role of the intern, to familiarize the medical student with the tasks and skill mix required to take on the intern role." A detailed description of these placements was not provided. Similar to studies above, they surveyed interns (25 in total); but focused on how well the interns felt prepared to work in general medicine. Interns were asked to self-assess their preparedness on 16 parameters (including general preparedness, diagnostic skills, procedural skills, knowledge, time management, teamwork, communication skills) on a 5 point Likert scale; with surveys at the beginning and end of the 10 week intern post in general medicine. Paired *t*-tests compared the mean scores for each parameter. The authors took a Likert score of 3 as indicating being prepared. Resuscitation skills and medico-legal appreciation alone had mean score less than 3 during the first survey. All measured parameters had mean scores above 3 on the second survey. A *p*-value for the *t*-tests was provided but the authors did not elaborate on their interpretation of this; 9 of the 16 parameters had a *p*-value of <0.05. The authors stated that means had increased across all parameters indicating that interns were probably better prepared than they had initially considered. This is an interesting aspect of this study, in that the interns were asked to re-evaluate their preparedness with hindsight of their real professional experience. Interviews were also performed with interns and the major theme emerging was that interns felt adequately prepared for the intern post but may have only realised this when they were working in the post.

A survey study from University of Newcastle, New South Wales compared responses from graduates of a PBL course with a traditional course in how well it prepared students for practice in various domains (Hill *et al,* 1998). This used a six point Likert scale and concluded that graduates of the PBL course rated themselves better prepared in interpersonal skills, confidence, collaboration with other health workers, preventative care, holistic care and self-directed learning. This is not directly comparable to the above surveys as the areas asked about are different; but

this is one the aspects of a quantitative approach; if not standardised the responses are specific to the questions asked.

Prince *et al* (2004) looked at new doctors' experience in Holland. They explored the transition of students from Maastricht Medical School into their first jobs as doctors. They carried out four focus groups with a total of 17 newly qualified doctors. The themes that were identified regarding transition included dealing with the change of accepting real responsibility; determining the boundaries of their position; and the uncertainty in decision making in managing patients. Other themes were related to the demand of the job including becoming familiar with the workload and long hours of working. Working with other staff and developing working relationships that took time was another theme. They felt well prepared in history taking and communication skills and felt that their knowledge was more adequate than they had expected. This is similar to Gome *et al's* (2008) finding above, in that in some aspects preparation was better than initially perceived. Where difficulties were reported were in some practical procedures but these were overcome quickly with on the job experience. A lot of similar themes were identified in Illing *et al's* GMC commissioned study (2008) as well as Brennan *et al's* study at Peninsula Medical School (2010).

In the USA subinternships exist in many medical schools in the final year of medical school (Sidlow, 2001) (Sidlow *et al*, 2002) (Green *et al*, 2004) (Aiyer *et al*, 2008) (Aiyer *et al*, 2008a) (Lyss-Lerman *et al*, 2009). They are described as placements to allow students to have increased responsibilities with a great focus on experiential learning. There has however been little research looking at preparation for practice as interns and its relation to the subinternships. These placements seem longstanding, going back to the middle of the last century when there was a shortage of interns, but have no national structure guidelines. Of late more focus has been on determining learning outcomes for these and trying to provide more structure. A great focus on students choosing specific subinternships seems to relate to which residency programme and specialty they wish to pursue in postgraduate training.

2.2.7 Conclusion of Literature Review 2011

In 2011 the overall tone of the research into preparedness of newly qualified doctors was that there were some areas where perceptions were that they are well prepared

like communication skills, and awareness of limitations but other areas where they are not as prepared like decision making and managing patients. The bulk of the work done was on self-rating of preparedness with little correlation with outcomes such as satisfactory performance in the job. The literature was difficult to compare as the methods used had often been different with differing Likert scales. Furthermore the main concentration seemed to be on quantifiable skills without little work into the actual notion of preparedness. Kilminster *et al* (2010) discussed the conceptual problems with trying to research preparedness as they argued that the FY1/PRHO can never be fully prepared and much of that preparation and learning will only come when they are in post – and the issues of who they work with, where they work, what they themselves bring to the job will all affect preparation. In other words the approach to investigation had to consider these factors as well.

Another major theme throughout research on medical student preparation and changes to undergraduate curricula had been the focus on work-place learning and experiential learning. The overall impression was that, although self reported, learners found this direct experience of the workplace and taking on responsibilities helpful.

Following the recommendation of the SA each UK medical school was required to implement this, along with other recommendations in *Tomorrow's Doctors 2009*, by 2011-12 with local evaluation of their impact.

2.3 Literature Review 2011-2015

When approaching the end of my research analysis I performed a further literature review in June to December 2015 looking into the work that had been done since as this would also be an important aspect in discussion of my findings. Subsequent to 2011 there have been three main areas on work looking at preparedness for practice. Firstly there have been ongoing national surveys. Secondly individual medical schools have published evaluations of their SA programmes. Thirdly, and most significantly, the GMC commissioned a large multicentre project - *UK Medical Graduates Preparedness for Practice* - looking at preparedness for practice (Monrouxe *et al*, 2014). This latter, in depth study - that included a review and critique of previous work in the field, as well as new

qualitative research with multiple participant groups - is the work alongside the National Training Surveys organised by the GMC that has impacted the current and future direction of policy. Each of these three will be discussed in turn.

2.3.1 National Surveys Since 2011

Section 2.2.2 above described the national surveys sent out to graduates of all medical schools in the UK by Goldacre and colleagues (Goldacre *et al*, 2003) (Cave *et al*, 2007). The initial two surveys were re-presented together but the 2003 cohort was subsequently called the '2002' cohort (Goldacre *et al*, 2010). Following on from their initial questionnaires with the 1999, 2000, 2002 and 2005 cohorts this group sent out a similar questionnaire to the 2008 and 2009 cohorts (Goldacre *et al*, 2014).

They again asked for the new doctors to retrospectively give their perception on preparedness. The questionnaire was also broadened and included questions on transition and also career aims. The same 5 point Likert scale was used but questions were asked regarding areas where deficiencies may be: knowledge, administrative tasks, emotional demands. For the 2008 cohort 3302 of 6705 (49%) responded and for the 2009 cohort the respective figure was 2918/6252 (46.7%). The table from the paper comparing the response against previous cohorts is reproduced and presented below (Table 2.1.). The numbers of respondents differ from the figures above as not all respondents answered this specific question.

My experience at medical school prepared me well for the jobs I have undertaken so far	Percentages of respondents				
	Previously published data			Recent graduates	
	1999/2000 (n=3062)	2002 (n=2750)	2005 (n=3113)	2008 (n=2837)	2009 (n=2532)
Agree and strongly agree	36.3	50.3	58.2	53.0	49.4
Strongly agree	4.3	6.0	6.4	8.0	10.6
Agree	31.9	44.3	51.8	45.0	38.8
Neither agree nor disagree	22.5	18.9	21.2	26.2	34.5
Disagree	29.7	23.5	17.8	17.2	14.5
Strongly disagree	11.6	7.2	2.8	3.5	1.6
Disagree and strongly disagree	41.3	30.8	20.6	20.7	16.1

Table 2.1 Perceived preparedness for work as a house officer reported 1 year after graduation (Goldacre et al, 2014)

As with previous surveys the authors combined 'strongly agree' and 'agree' to indicate prepared and 'disagree' and 'strongly disagree' as feeling not prepared. The percentage that felt not prepared had fallen from 41.3% to 16.1%, and the number that felt prepared had increased from 36.3% to 49.4%. Interestingly the percentage that selected 'neither agree or disagree' increased. It is difficult to interpret this as it would be expected that by one year after graduation, with hindsight, new doctors should be able to decide whether they were prepared or not. This contrasts with Gome *et al* (2008) and Prince et al (2004) where the qualitative work in these Australian and Dutch studies identified the theme that some doctors only realised they were prepared after they had actually done the job. It could be that the methodology choice specifically teased this out or this is a phenomenon particular to the UK. As with quantitative methodology it is difficult to find out the reasons in

depth. It could be speculated that this relates to the uncertainty around the concept of 'preparedness'.

An interesting question asked by Goldacre *et al* (2014) was whether lack of preparedness was actually a problem, for those that felt unprepared in the 2008 and 2009 cohorts. 2.7% reported this was a 'serious' problem, and 22.6% a 'medium' problem with the rest who felt unprepared saying it was not a problem. Combining these two where it was felt to be a serious or medium problem was 25.3%. Although the calculations were not provided in the paper, combining the 2008 and 2009 figures 18.5% of these combined cohorts felt unprepared but of these only 25.3% felt that was a problem. This would imply that only 4.7% of the total cohort felt both being not prepared and that this was a problem. This could be interpreted as meaning that lack of preparedness is not considered a significant issue by some, or even an expectation; or even a positive as awareness of one's deficiencies is a better position to be in than not being aware as was argued by Kilminster *et al* in their critique of studies on 'preparedness' (2010). However, this goes back to the actual concept of what preparation and preparedness are and it is difficult to define. These respondents are reporting a self-perception which may or may not be represent the actuality when using other objective measures like assessments and summative measures of satisfactory progress. With regards to the query about areas where doctors felt less well prepared for, the highest percentage was 32% for administrative tasks with physical/emotional/mental demands 26.4%, procedures 21.3%, knowledge 17.5% and the lowest interpersonal skills 2.7%. As with previous studies by this group there were wide differences in response by medical school where the doctors had completed their degree.

In the initial literature review in 2011, in this chapter, and this up to date review I have commented on the difficulties with the quantitative approach which may not be able to address the complex concept of preparedness. Of course, the advantages of these studies are that these surveys can generate responses from a large number of participants from multiple sites.

Monrouxe *et al* (2014) also commented on problems with the quantitative approach in their GMC commissioned project. They stated "caution is needed" in interpretation as the concept of preparedness was not well defined and there was a reliance on self-reporting and the use of Likert scales was "broad-brush".

In recent years national surveys are being performed by the GMC (General Medical Council, 2010-2015). Completion of these are mandatory for all doctors on a recognised training programme in the UK, so these now represent the largest and most complete quantitative dataset on training of doctors in the UK. The GMC summarised the survey responses on preparedness of new graduates in their document *Be Prepared: Are New Doctors Safe to Practise?* (General Medical Council, 2014).

This publication summarised the current position with regards to preparedness following the several years since the implementation of *Tomorrow's Doctors* 2009. It mentioned that doctors currently training and responding to questionnaires had been educated under the 2003 and 2009 versions of *Tomorrow's Doctors* so firm conclusions of the impact of the 2009 version could not be arrived at. The report did however conclude that the general impression was that increasing proportions of new UK graduates were feeling prepared for their first post. The report also stated that fewer Foundation level doctors were being classified as "in difficulty" in this training period implying that this may mean they are better prepared.

As discussed above in section 2.2.2. the figure from the 2010 GMC National Training Survey of doctors that felt prepared for their first post was 59%. The *Be Prepared: Are New Doctors Safe to Practise?* document summarised that the number of graduates feeling prepared for their first post is increasing apart from a reduction in 2012. The figures in parentheses follow the respective year: 2009 (54.3%), 2010 (58.8%), 2011 (61.8%), 2012 (50.5%), 2013 (70.2%), 2014 (69.9%). It is uncertain where the figure for 2009 was obtained as it is not in the available 2008-2009 survey on the GMC website. The wording of the question changed over this time as well: 2009 to 2011 the question was "do you feel that you were adequately prepared for your first F1 post?" and this was changed in 2012 to 2before commencing my first foundation post I felt prepared for the role" and in 2013 and 2014 this was changed again to 'I was adequately prepared for my first foundation post'. The document suggests that the lower percentage for 2012 may have been because the word "adequately" was not used and asking how they felt "before" the post. This again shows that preparedness is not an easily definable concept and a nuance in the query could result in differing interpretation by the respondent. Therefore work looking into the preparedness of new graduates can be difficult to compare because of this inconsistency in approach. However, the document

suggested that overall the trend was that more new graduates were feeling prepared for their first post. The 2011 survey however did comment that "it is impossible to be fully prepared."

2.3.2. Student Assistantship since 2011

The second area where there have been increasing publications since 2011 have been evaluations of the SA placements from individual medical schools. The many medical schools that have published their evaluations are: Edinburgh (Fullbrook et al, 2015), Newcastle (Burford et al, 2015); Belfast (Braniff et al, 2016) (McKavanagh et al, 2012); Bristol (Hawkins *et al*, 2015); Cardiff (Meikle & Jenkins, 2015) and Sheffield (Lightman *et al*, 2015).

Various methods have been used included in these evaluations including before and after questionnaires asking about confidence or self-perception of preparedness. Some have specified areas such as clinical skills, administrative tasks, team work and taking responsibility. Other methods include focus groups with self-selected new graduates after the SA placement. They have highlighted similar areas to Illing *et al*, (2008) regarding feeling underprepared in managing emergencies and prescribing.

Further work has looked at how best to construct a SA and what elements are felt to be important. Vivekananda-Schmidt *et al* (2011) performed a study which involved sending questionnaires to deans or final year leads of all medical schools in the UK. The purpose was to determine what activities the the questionnaire recipients felt students should engage in in the SA. As the SA's purpose was to allow the medical student to take on some responsiblities of the FY1 doctor, they asked specifically which of the 34 FY1 competencies from the foundation programme curriculum they think students should do during the SA (UKFPO, 2010a). They also queried about what the level of supervision should be. Out of the 34 medical schools approached a response was received from 22.medical school representatives. The main themes that emerged were that the competencies were felt suitable but there were 'barriers' that existed to allowing increased responsibility for students. Concerns were expressed that the hospital trusts would not allow students to take on duties that were expected of FY1 doctors because of patient safety concerns. These included activities where there could be clinical risk like prescribing, clinical corresponence, writing in patients notes. They felt that it may be suitable to manage acutely unwell

patients but only with adequate supervsison. The barrier here is that there is difficulty in defining what suitable supervision is and by whom. Another theme was that trying to concentrate all these experiences in such a short placement may be unrealisitic as the learning opportunities for these competencies may not arise in this short period. The authors conclusion was that "conservatism and risk aversion are preventing doctors from being given responsibility before graduation."

Tallentire et al (2012) sent a questionnaire to graduates and supervisors asking about what learning opportunities are most important to make available to students during the SA. They asked for prioritisation of the most important tasks as these were identifed similar to previous work as prescribing, emergency care, administation and prioritisation of tasks. They also concluded that it was a challenge for students to get authentic experience.

The GMC carries out inspections of medical schools periodically and each medical school is also required to provide *a Medical School Annual Return* report (General Medical Council, 2014a). The reports of medical schools that have been performed after *Tomorrow's Doctors 2009* have included evaluation of the SA placements at those universities. Some medical schools have included details about their SA placement in their annual return reports as well.

This information from the GMC as well as the published evaluations in the literature suggest significant flexibility and variability in the implementation of the SA. Although its role is to "prepare" students and link the undergraduate programme to clinical work it exists with pre-work place shadowing (organised by the NHS work place rather than the university) and its structure and effect is still to be clearly determined. Different medical schools offer SAs of differing lengths and in different specialties, with some also offering them in General Practice. Some schools have interpreted the entire final year as a SA and some a defined period. Duties and supervision required also vary between medical schools. Despite the inconsistency in implementation the general impression from the GMC is that SAs improve preparedness for clinical practice.

2.3.3. GMC Commissioned Project 2014: How Prepared are UK Medical Graduates for Practice?

This project by Monrouxe *et al* (2014) was commissioned by the GMC. It was the second GMC commissioned project looking at preparedness of new graduates following Illing *el al's* (2008). The project was commenced in July 2013 and published in 2014.

It is the most in depth recent study looking at preparedness and it is a multicentre project. The first part is a review of previous literature looking at preparedness of new graduates. The conclusions and critique from this have then fed into the design of the qualitative aspect of the project.

The qualitative research has involved narrative interviews with 185 participants from 8 stakeholder groups: FY1 doctors; newly registered trainee doctors; clinical educators; undergraduate and postgraduate deans and foundation programme directors; other healthcare professionals; employers; policy and government and patient and public representatives. The data collection involved longitudinal audio-diaries of 26 FY1 trainees over a period of four months. The researchers have then analysed the data thematically and mapped it against *Tomorrow's Doctors 2009*.

The conclusions from the review were that previous studies and research in this field were often focused competencies and knowledge as a measure of preparedness and had not looked into "personal, interpersonal and contextual"' aspects of preparation. The dataset was criticised as usually only being from one data source (learners or educators) and not multiple groups. The review also pointed out that the most common method used was a questionnaire and then qualitative interview. This paper also discussed the work of Kilminster *et al* (2011) and their discussion of difficulties with the concept of preparedness and how the experience of the learner is influenced by "organisational practices", and "cultures".

The researchers then moved onto their qualitative project with the design seemingly tackling the weaknesses of the previous research approach.

Data was obtained from four medical school sites and these were cross-sectional narrative interviews. The participants were from eight stakeholder groups mentioned above. Further data was obtained from longitudinal audio diaries from a subgroup of FY1 participants from the FY1 stakeholder group. The general impression from the data was that the SA helped in preparation and was important in the transition from

medical student to FY1 doctor. However, a number of the FY1 participants felt the SA had not been helpful in preparing for FY1. The reason for this was that opportunities to take responsibility for patient care were not there in their SAs and some students commented on "being sheltered". The interviews indicated that the student's experience was influenced by how an individual doctor on the team was important in giving this responsibility to the student and making them a member of the team.

This highlights the variability in the design of the SA mentioned above and also uncertainty on the responsibility that the students can be given. The authors suggest that the data and analysis indicate that personal factors are also important in how the student engages with the SA placement; including how proactive the student is and their own confidence.

The authors state that preparedness is "both a long- and short-term venture that included personal readiness as well as knowledge, skills and attitudes." This goes beyond the previous focus that has mainly been on the more measurable aspects like skill and knowledge alone. This project found the SA effective in preparation, but also found pre-work shadowing to be effective and it was not made clear what the individual contribution of each of these interventions was.

With regards to specific competencies the study found that the results were not consistent. Communication skills like taking a history were where students did feel prepared but not difficult communication like breaking bad news, or who to ask for help. Another area whether many felt unprepared was multi-tasking. They felt prepared in some practical procedures. They felt unprepared in treatment planning with patients, prescribing, managing complex patients and medical emergencies and understanding the clinical environment. They also felt there was a significant step up in responsibility.

An interesting comment was that consultants and senior General Practitioners felt that graduates, at times, were less prepared than they themselves recognised. So this further illustrates that preparedness is a concept that includes subjectivity and defining it is not straightforward.

This report suggested that research in preparedness for practice said studies should be multi-site and longitudinal to understand preparedness as a process. It advised that multiple stakeholder perspectives should be included.

Following on from Monrouxe et al's (2004) work the GMC released their document

Be Prepared? Are New Doctors Safe to Practise? (General Medical Council, 2014). This document was discussed above (section 2.3.1) but also commented that the view on preparedness must be a 'wide view' that includes 'professionalism, employability, competence, readiness, fitness for purpose, fitness to practice' and the 'boundary between being prepared and not' is difficult to define. Therefore the latest tone from the GMC also seems to be including this difficulty with the concept of preparedness. The most recent National Training Surveys from the GMC have also moved away from using the word 'preparedness' to 'adequate experience' when asking about this area.

2.3.4. Conclusion of Literature Review 2011-2015

Since 2011, when I commenced my project there has been considerable change in this area in medical education. There is a general opinion from the GMC that medical students are feeling more prepared. The SA seems to be viewed positively although no definitive model has been arrived at. A theoretical discourse on the concept of preparedness has also developed questioning how to approach research in this area as well.

This background chapter has reviewed the work that occurred prior to my commencement of my research as well further research since.

2.3.5 Discussion of Literature

I have presented a pre- and post- 2011 review of the literature. My purpose for doing this was because my fieldwork fell between these time periods. Full implementation of *Tomorrow's Doctors* 2009 was for the 2011-2012 university year so the pre- and post- 2011 time periods are also pre- and post- implementation. However to understand the literature and highlight the main themes and concepts I bring together these two separate reviews.

Research into preparedness of new doctors for practice falls into three main groups. There have been national surveys looking into self-perception of preparedness which are continuing and seemingly showing an improvement in preparedness. However this is based on a self-rating by individuals. The limitation of this approach has been

that preparedness has not well defined in these and changes in wording of the question as well as the response scale may have affected the answer chosen.

Secondly there have been local evaluations of programmes and attachments at a medical school level that have used a mixture of qualitative and quantitative methods. Many of the earlier evaluations looked at attachments where students took on increased responsibility and more recently focus has been on the implemented SAs. This has provided more depth in looking at preparedness as a concept and identifying areas where preparedness was greater but are limited in their applicability outside of their course.

Thirdly there have been two multicentre GMC commissioned projects that have used large research teams to explore the concept of preparedness in depth with mixed methods. These have provided a richer insight into preparedness and been responsible more moving the discussion of this area forward. Other than these commissioned projects data has usually only been obtained from one group of participants – the students or newly graduated doctors without exploration outside this group.

The general theme has been that experiential learning and taking on responsibilities of FY1 doctors was valuable. An area not considered in great detail in the early research that preceded this project and also highlighted in Monrouxe *et al's* GMC project (2014) was the actual 'conceptualisation and measurement of preparedness.' The earlier research, whilst providing valuable information on skills to obtain, viewed preparedness more as a set of quantifiable skills or a non-defined self-perception. There has been little attention given to the larger social structure around the student and new doctor and the influence of that on preparedness until considered by Monrouxe *et al* (2014).

The remainder of this chapter will cover the SA at UKMS the research site.

2.4. Student Assistantship at UKMS

The medical school that was the site of the study has been anonymised to UKMS. At the time of the project UKMS already had implemented a SA placement programme in the final year. In this year medical students had three eight week SA placements in General Medicine, Surgery and General Practice. In the hospital setting each student

was allocated 5 patients from the team with which they are working – "acting as the junior member of the medical team" - with the aim of managing these patients and delivering care under supervision. In General Practice students had four sessions per week of direct clinical contact, seeing 4-5 patients in each, formulating and discussing with the GP preliminary care/investigation plans.

An additional component of the final year were weekly group sessions on prescribing and managing emergencies. These occurred back at the university site. A three week pre-job shadowing period with the FY1 the student was to replace was organised by local Foundation School if the student remained in the region for their first post after graduation.

My initial remit was to evaluate these SAs in light of the, at then, recent recommendations of the GMC from Tomorrow's Doctor's 2009 and see if they prepared the students for preparation. The next chapter presents the research objectives before going into detail regarding my theoretical perspectives and methodology in Chapter 4.

Chapter 3

Research Objectives

As I commenced the project the objective evolved and moved beyond being a purely evaluative study of a placement that had the purpose of preparing students for professional practice. My theoretical perspectives changed as the project began and I reviewed the previous research in the area and started the initial fieldwork. I became aware that preparedness was not solely a measurable phenomenon but was also reliant on the social structure surrounding the student.

I, therefore, moved towards using this project as a case study to explore preparation and preparedness from a sociological perspective as well and explore the concept of preparation and the factors that affect it.

Therefore the aim of this project was to:

   (i)   Explore how the concept of preparation is understood and perceived by medical students, supervisors and stakeholders in medical education.

   (ii)   Identify specific social influences and factors that influence preparedness of new graduates to begin practice

   (iii)   Contextualize preparedness in social theory by integrating social structure factors and individual learner factors identified

The next chapter covers the methodology but importantly also my theoretical perspective as this informed my approach to the methods used.

Chapter 4
Methodology and Methods

4.1 Introduction

This chapter gives an outline of the research design of the study. It explains the reasons for the methods chosen. It also describes how this design was iterative; in that the early process of research including understanding the literature informed a change to the study design. This was mainly through a change in my theoretical perspective. This change was a movement from a realist approach to a more constructivist-interpretivist approach. Cresswell debates that "philosophical ideas influence the practice of research and need to identified" (Cresswell, 2009). Epistemology and ontology concern the theory of knowledge and view of reality. These then inform the selection of research design. Realists are described as believing "that in some sense there is a world with a character and structure that exists apart from us and our lives" whereas constructivists believe that "everything we say or experience is through the medium of out constructs and ideas" (Gibbs, 2007). As discussed in the literature review (Chapter 2) much of research into preparation of medical students has taken a realist stance; with the view that what makes a doctor is independent and measurable, resulting in focus on clinical skills and knowledge, and looked at whether these had been attained. Initially this was the approach in this project with a questionnaire asking about skills attained and skills being topics introduced to discussion at focus groups. However it became apparent, as the project progressed, 'preparation' or 'preparedness' went beyond being a set of assessable skills and was also influenced by the surrounding social structure, for example the team a medical student or doctor would work with. Therefore being prepared was a socially constructed phenomenon as well and this research into preparation moved from a realist to constructivist enquiry and methodologically from a quantitative to a predominantly qualitative enquiry. I found using Bourdieu's concepts of *field, capital* and *habitus* (Bourdieu, 1994) (described below) valuable not only in interpreting the qualitative elements of this study but also these concepts were valuable in the analytic process moving beyond merely a descriptive process and were eventually used to frame the findings in the discussion.

4.2. Theoretical Perspective

Much of the research looking at preparedness has not looked at the organisational structure around the student. This has been discussed by Monrouxe *et al* (2014) and Kilminster *et al* (2010) (2011).

In the medical education literature, despite, recent focus looking at preparedness with a realist stance there has been work looking at the socialisation of medical students in the past. Merton et al's *The Student-Physician* (1957) discussed how students became socialised and integrated into profession. Further work has been done by Becker *et al* (1961) which looked at the process of taking on the role of the medical student. More recently Sinclair (1997) framed his findings in Bourdieu's concept of habitus and discussed how this develops by the students taking on the dispositions of a doctor. This work tends to focus on professionalisation. Brosnan (2013) has discussed how "social science theory is underused" in medical education research and how it too can provide insights into understanding medical education.

As mentioned above as I started this project my theoretical perspective was that preparedness was a phenomenon that was both dependent on the social structure around the student, i.e. who they knew, where they worked, in addition to the skills they had. Therefore preparedness and the notion of being prepared were partially a social construct as well.

From this realist, positivist view I moved towards a constructivist interpretivist theoretical stance as I pursued this project. I adopted this theoretical perspective as I began to view preparedness not only to be a set of skills and competences acquired but also to be a socially constructed phenomenon. Therefore, if an individual was prepared then this was not only concerned with the individual measurable and assessable skills they had obtained (which would be a more realist, positivist view) but also from their workplace experience and interactions and the meanings to the individuals of that experience.

So preparedness is not fixed and what it means is not fixed and preparedness arises from the process of social interaction as well.

From an interpretivist theoretical perspective, through interpretive studies, individuals' experiences and their subjective views and the meanings to them of

those experiences can be explored; hence my adoption of it. And by adopting this perspective my project also therefore required investigation not only of the individual student and doctor's experience but also those around them and how they engaged in the workplace. This multi-participant group involvement was supported by Monrouxe *et al* (2004) in their GMC commissioned project.

4.3. Communities of Practice Model

Lave and Wenger's (1991, cited in Kaufman and Mann, 2010) *Communities of Practice* model belongs to the group of situated learning theories that suggest learning has a socio-cultural' basis and this occurs through participation in a community. It stresses a critical factor for learning to occur is by integrating individuals within the community and the community "legitimising individual practices." The learner therefore moves from "legitimate peripheral participation" to "full participation" in the community of practice. This allows learning to be viewed as a social process with key factors being relationships in the community and the development of an identity within the group.

Subsequent to the first description of Communities of Practice, Wenger (1998, cited in Kaufman and Mann, 2010) further described Communities of Practice of having three parts: mutual engagement, joint enterprise and a shared repertoire.

Mutual engagement concerns interaction in the work-related and social activities in the community by peripheral participation. Joint enterprise concerns the need for the community to understand their reason for being defined as such and their purpose. The shared repertoire concerns "routines, words, tools, ways of doing things, stories, gestures, actions or concepts that the community has adopted in the course of its existence" and these are used to achieve their joint enterprise.

This theory has been referred to in literature looking at the "apprenticeship model". Dornan *et al* (2007) investigated learning in clinical placements at Manchester Medical School, UK. They found that students developed both "practical competence" and "a state of mind that includes confidence, motivation and a sense of professional identity" but a key to achieving this was participation with a "partnership" between the students and supervisors that was called "supported participation."

4.4 Bourdieu's Theory of Practice

Even though the Communities of Practice model broadens learning and considers it as situated, it is still primarily a learning theory. Preparedness, extends beyond learning alone. I adopted Bourdieu's theory of practice framework as a 'lens' to examine preparedness and contextualise my findings (Bourdieu 1994, 1995). In the description of its component concepts below it can be seen that these do appear similar to the parts of communities of practice: 'field' is like 'community'; 'capital' is like the 'shared repertoire'.

I found using Bourdieu's theory allowed consideration of both the learner who is in the process of preparedness and the social structure.

Bourdieu's three related concepts of *field, habitus* and *capital* are being applied in this research.

Bourdieu states that the interaction of these three generate his equation of the *theory of practice* (Fig 4.1):

(Habitus x Capital) + Field = Practice

Fig 4.1 Bourdieu's Theory of Practice (Bourdieu, 1994, 1995)

Habitus is described by Bourdieu as a system of "dispositions" – perceptions, skills and actions that are developed in response to determining social influences like class and education and when considering medical students the social structure and practice of medicine. Habitus is restructured by these dispositions being "internalised" and becoming "second nature". Therefore a component of preparedness involves the student/new doctor adopting the "doctor habitus". Bourdieu describes this negotiation of the "habitus" as getting a "sense of the game" (1994). In medical education literature Sinclair (1997) focused on adopting the "habitus" of a doctor in his study *Making Doctors.* Although they predate Bourdieu's work – so the concept are not used - Merton *et al*'s (1957) and Becker *et al's* (1961) work could also be looked upon as exploring how the doctor habitus is developed.

Field is described as the setting in which "agents" (medical students, doctors, nurses etc) and their social positions are located. The NHS, individual hospitals, UKMS, the postgraduate deanery are all different fields that are overlapping. Bourdieu describes the field as the arena where "agents" struggle for *capital* (resources) and their position in the field is determined by how much capital they can possess. Bourdieu describes three types of *capital:* economic, cultural and social. Economic is more straightforward to comprehend, being financial capital. This may be important at a higher organizational level, for example, in funding of student placements, and less important at an individual level to students. Cultural capital and social capital may be of greater importance to students. Cultural capital includes forms of knowledge, taste and education. Social capital is concerned with the benefits that come from social networks, in other words, "who you know." Even though I did not use these concepts as a method or an analysis tool, they did inform my theoretical perspective and viewpoint on how preparedness should be explored and in the qualitative fieldwork –interviews and focus groups – my line of questioning or expansion of topics came from this theoretical perspective. This could be considered a form of researcher bias; but in my position of a researcher who was an "insider" I felt it allowed retain a more objective view.

4.5 Study Setting

This research was performed at a medical school in the United Kingdom (UKMS) and its affiliated hospitals and general practice locations. The sites and subjects have been anonymised.

This study explored the experience and preparation for practice of students of UKMS and UKMS FY1 doctors that remained within the region only, with the regional foundation school overseeing their training in their first two postgraduate years of the FP.

4.6. Questionnaire of Activities during Student Assistantship

It could be argued that participant observation of medical students in SA placements would have allowed me to investigate preparation for practice in the naturalistic setting. However, the range and number of sites, and only me carrying out the field work, and the previous my experience of being a medical student in a similar setting (in other words an "insider") may not have allowed the capture of all phenomena of interest.

Exploring activities that students engaged in was approached through quantitative methodology. This part of the project was started before the literature review and my change in theoretical perspective. It was a result of when this study was mainly an evaluative project. Despite a change in theoretical perspective I decided to complete it.

All final year students were asked to complete the same voluntary questionnaire four times throughout the final year. The first was at the start the first SA and then again after completion of each of the three SAs (Fig 4.2).
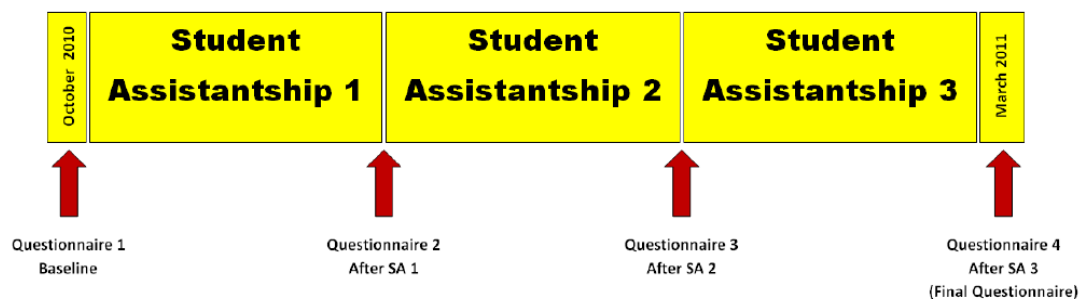
Fig 4.2 Timeline of Questionnaire distribution

The questionnaire asked about their experience of clinical skills and managing emergencies. This questionnaire (Appendix) was handed out at their whole year group teaching sessions and was available online through MonkeySurvey. It focused on skills, tasks and activities gained and experienced and was based on the expected competencies from *Tomorrow's Doctors* 2009 and the UKMS handbook. The timescale of this research activity was throughout the final year – Oct 2010 to April 2011. With questionnaires being sent at the end of every 8 week SA rotation,

including a baseline experience questionnaire, four questionnaires were completed in total over the year. As well as einquiring about the nature of activity the questionnaire also asked about self perception of competence in performing each of the skills or self perception of competence in assessing or managing each of the acute clinical scenarios. By repeating the questionnaire throughout the year the range of experience, and the time and setting of these experiences could be determined. An important aspect of the questions was the students' self rating of competence. Actual competence would be formally assessed in clinical examinations. However this would be done in formal examinations at set times whereas the questionnaire attempted to link attainment of skills with the SA attachments students had done. It also attempted to correlate self perception of competence with final marks by asking students to add their pseudomised exam code.

Students were asked about frequency of having performed a skill or managed a scenario previously and in the SA they had just completed and whether they felt competent in performing the skill or managing the scenario. The scale of self-assessment of competence was an ordinal scale (Table 2.1):

Self Rating of Competence	Descriptor
1	Not feel competent to perform or manage
2	Feel competent to perform or manage under supervision
3	Feel competent to perform or manage without supervision
4	Fell competent to perform without supervision and teach others to do it

Table 4.1: Self Assessment of Students' Competence

This ordinal scale was chosen over a Likert scale so that the self assessment would have an interpretable and clinically relevant score. A Likert score of 3 (5 point scale: 1 = not competent, 5 = competent) would be difficult to interpret clinically. The questionnaire was designed to be easy to complete, with clear instructions and no ambiguity in the questions. It was reviewed at the Medical Education Research

Group meeting at UKMS, and piloted amongst 10 junior doctors at UKMS affiliated hospitals. During the pilot the subjects were asked to complete feedback on (i) time to complete the questionnaire (ii) whether instructions were clear (iii) whether there were any ambiguous questions (iv) any important topics omitted (v) any objections to any questions (vi) whether the layout was clear (vii) any other comments (Bell, 1993).

Students were asked to complete the questionnaire and return it at the time of distribution during their weekly teaching sessions. As their teaching sessions were voluntary, students were given 4 weeks to complete the online questionnaire as well as they may not have attended the teaching. A reminder was emailed at two weeks. The analysis and discussion of the questionnaire is discussed in more detail in chapter 5.

4.7. Qualitative Research

Qualitative research has been described as research that tries to "understand, describe and explain social phenomena 'from the inside' in a number of different ways [and] it seeks to get an insight into how people " (Flick, 2007). It seeks to get an insight into how people interpret the world around them. Therefore qualitative research was the main methodology used in this project. The methods chosen were also dependent on feasibility, practicality and timescale. An ethnographic study where participants could be observed was not selected because of there being only one researcher (so not feasible with multiple participants over multiple sites over a limited period), the likely ethical barriers to observing in a clinical setting and the question of whether I as a doctor could be an objective observer in this setting.

4.7.1. Focus Groups with UKMS Final Year Students

Final year UKMS students were invited, via e-mail to participate in focus groups exploring their experience during SA placements and how they felt these were preparing them for professional practice. An information sheet (appendices) was attached to the e-mail.

Focus groups were scheduled to take place at 4 weekly intervals between December 2010 and April 2011 at UKMS campus buildings and education centre sites at UKMS

affiliated hospitals. The latter setting was considered more practical as students were often resident at their SA placement there.

It was decided that a minimum of 4 and a maximum of 10 participants were to be recruited for each focus group. A topic guide (appendices) was constructed based on issues raised in previous research. New topics raised in focus groups were added to subsequent focus groups. Longitudinal focus groups with the same students were difficult to arrange as they rotated to different sites throughout their final year so the focus groups were open to all students with voluntary attendance and no specific minimum number of focus group attendance requirement. There was no specification by age or sex of student. The focus groups took place between December 2010 and April 2011, with students leaving for formal examinations after this period.

4.7.2. Focus Groups with UKMS Graduate FY1 doctors

FY1 doctors that were UKMS graduates and had remained in the region for their Foundation Programme Training under the regional foundation school were invited to participate in focus groups. They were e-mailed via their NHS e-mail addresses. An information sheet (appendix) was attached to the e-mail. Focus groups took place at UKMS affiliated hospitals. It was decided to have at least one focus group per site if a sufficient (minimum 4) number of UKMS graduates were working at that affiliated hospital. Only 52 UKMS graduates had remained within the regional foundation school training area so not all hospitals had sufficient numbers of FY1 doctors to arrange focus groups. The topic guide for UKMS students was used. The focus groups took place between February 2011 and June 2011.

4.7.3. Interviews with SA Supervisors

Face-to-face interviews were arranged with consultant physicians, consultant surgeons and general practitioners who supervised students during their SA placements. They were all working at UKMS affiliated hospitals or affiliated general practice surgeries. All supervisors of SA placements were identified through the UKMS list of supervisors and e-mailed an invitation with an attached information sheet (appendix). They were sent one reminder email 4 weeks after the initial invitation. The aim was to interview one physician and one surgeon from each affiliated hospital, and one general practitioner from each primary care trust (maximum 15 in total). A topic guide based on issues from previous research and the focus groups was used for the face to face interview. The supervisors were interviewed at their work site. It was decided that trying to arrange a focus group with this number of professionals from a wide geographical area would have been difficult; hence the choice for face-to-face interviews. The interviews were performed between November 2010 and August 2011.

4.7.4. Interviews with Stakeholders

As the project progressed it was realised that to understand the organisation and relationship between different settings (fields in Bourdieu's concepts) the project would have to be expanded upon and a further dataset obtained. Often the data from supervisors and students were descriptive about how SA placements were organised; but an important aspect that emerged was that the changing social structure around the FY1 and medical student was also important to understanding preparation for practice. The focus on the learner alone in the above work and previous research (literature review) had resulted in less emphasis on exploration of this area. This is the impact of the social structure surrounding the students including the hospitals, the deanery responsible for education, the foundation school, and UKMS. It was therefore decided to interview "stakeholders". These were representatives at a board/management level of NHS institutions involved in education as well as patient care, foundation school representatives, postgraduate deanery representatives, UKMS and other medical school representatives. A list of 17 stakeholders was compiled in liaison with the UKMS medical education unit. These stakeholders

were invited to participate in a face-to-face interview via email with an attached information sheet (appendix). A reminder email was sent after 4 weeks. The interviews were performed between September 2011 and November 2012. Both face-to-face and telephone interviews were offered although all participants volunteered for face-to-face interviews.

4.7.5. Participant Selection and Method of Data Collection

Exploring preparation for practice required an understanding of and comparison with all parts of the UKMS programme that also impact preparation such as the pre-job shadowing. The FY1s alone had direct experience and insight of all these, whereas medical students were still going through the process, so it was decided that both should be approached as participants for this project. The medical students provided the insight into their experiences while they were going through the SA and FY1 doctors after this was complete and they could reflect back on their undergraduate experience. Ideally the same cohort would have been followed over two years, but the timescale available did not allow this and this fieldwork with students and graduates had to be complete in 2010 to 2011. Supervisors were chosen as they could provide an insight into the process of organising how they aim to aid in preparation of students. Sampling was purposive in that one physician and one surgeon was selected from each affiliated hospital and one general practitioner from each affiliated primary care trust. Where more than one supervisor volunteered from each trust or affiliated teaching hospital, the supervisor with the longest experience of being a SA supervisor was chosen as it was felt their greater experience may provide greater insight.

Selection of "stakeholders" was purposive and the list was generated by discussion with the UKMS medical education research group, in identifying those individuals that would be appropriate (e.g. regional postgraduate institution representatives) and those who had experience in the field of organising student education at the interface of the medical school and FY1 year.

Ideally a uniform method would have been chosen for all participants. The focus group format was chosen as the preferable approach in this project. Because of the multi-site delivery of the placements and the UKMS programme a deeper understanding may have been achieved by allowing the participants to interact in the focus group. Focus groups are said to be more "naturalistic" than interviews and

58

include the "dynamic quality" of group interaction where debate and differing opinions and discussion about topics can occur (Wilkinson, 2004). They also allowed me to act as a facilitator and not an interviewer and I felt this was needed as I was always conscious of my position as a doctor who had had similar experience in my training. So the focus group format may have allowed me to "decentre power" in the interaction with participants and thus avoid bias in the discussion which may be a greater factor in a one-to-one interview. It was not feasible to arrange this with the stakeholders and supervisors so face-to-face interviews were the selected method there.

4.7.6. Data Collection, Preparation and Storage

The narrative was audio-recorded with an Edirol recorder in mp3 format. It was stored on UKMS computers and "7-zip" software encrypted. The data was backed-up and stored on a partitioned flash-drives encrypted with TrueCrypt software. The audio files were transcribed verbatim to textual data by me. Part of the value of this was so that I. as the principal researcher, could immerse myself in the data and familiarize myself with it at an early stage. I found less value in transcribing all the focus groups as the transcription process was slower when multiple voices had to be distinguished and often the immersion value was lost as the audio files were played at slow speed just to distinguish different words, and the general flow was lost. 7 focus groups were transcribed by a professional transcriber. The transcripts were all anonymised and the participants given a code. Data was confidential to the UKMS medical education research team only, but participants were informed, on the information sheet, that this confidentiality may be broken if the research discovered events where a medical student's or FY1 doctor's conduct was outside the principles and values in the GMC's *Good Medical practice: Duties of a Doctor* and *Medical Students: Professional Values and Fitness to Practise*. In these circumstances the UKMS undergraduate dean and foundation school director would have been informed. No such scenarios arose.

The key stakeholders were given the opportunity to view any of their comments that would be used in any write up as despite anonymising, the specificities of their roles may have made identification possible. One stakeholder withdrew consent and one was not available to be contacted. Their data was not used.

The transcript was prepared to allow ease in analysis and subsequent presentation. It

was double spaced, printed from Microsoft Word at font size 12. A six centimetre margin was left on the right to add coding notes. The narrative was "tidy and grammatical" but individual hesitations, pauses were not included. As content and not discourse analysis is being used this format was felt appropriate. The transcripts were checked against the audio-files to correct any mistakes. The transcripts were anonymised.

4.7.7. Sample Size

I alone carried out the interviews, led the focus groups, distributed and analysed the questionnaires, and analysed the narrative data. Therefore sample size was determined by the feasible limit of total hours of recorded narrative that was be kept to less than 25 hours. 30 face to face interviews of 20-30 minutes and 10-15 focus groups, with each anticipated to last 1-1.5 hour, totalled 20 to 30 hours of narrative.

4.7.8. Qualitative Data Analysis

Four groups were participants in this research: FY1 doctors, medical students, SA supervisors and 'stakeholders'. Data from each group was analysed separately. The data was analysed by me alone.

'Framework' is described as a versatile analysis approach suitable to applied research (Ritchie & Spencer, 1994). As it sets out the stages of analysis, it was felt that this would be a suitable approach for a novel qualitative researcher and it stages allow the researcher to "sift, chart and sort material according to key issues and themes".

Framework has five keys stages: (i) familiarization (ii) identifying a thematic framework (iii) indexing (iv) charting (v) mapping and interpretation.

In this project 'familiarization' involved the principal researcher immersing himself in the data: listening to the mp3 audio-files, transcribing the data, get an understanding of the range of material.

Identifying a framework involved coding the data after identifying key themes, expanding these, going through the data identifying new themes.

Indexing involved going back to the transcripts and applying the framework to data by adding notes to the transcripts and looking at associations between the codes.

Charting involved bringing the data together, reduction of the codes to key themes.

Mapping and interpretation involved trying to interpret the key themes identified. Even though there are separate stages to Framework I found the interpretation was an ongoing process of moving from the data back to the analysis chart. At times the process was not felt to be analytical enough and on reflecting I felt this may have been due to my similar background to the participants and this resulted in descriptive coding and not analytical interpretive coding. For this I reflected back to my theoretical perspective and considered Bourdieu's concepts of habitus, field and capital. This allowed me to 'step-back' and look at the data through the lens of Bourdieu's concepts and think about and analyse and interpret the themes differently from his everyday experience of this world. Initially I used NVivo software to organise the data. However I found this restrictive as it did not allow me quickly go back and look at previous pages in the transcript. Therefore I continued with paper printouts of the transcripts and constructed a worksheet in a Microsoft Excel with themes above columns and the participants in rows. By minimising text size I was able to 'cut and paste' quotations into the spreadsheet cells.

4.7.9. Validation of Data

A random selection of analysis and coding and conclusions of the anonymised transcripts was read by my supervisor. My conclusions and analysis were also discussed at my thesis advisory group meetings. This allowed validation of data and coding to compensate for researcher bias. Use of multiple sources of data allowed triangulation and validation.

4.7.10. Consent and Ethics

Consent forms were provided at the commencement of each focus group or interview (appendices).

Ethical approval for the study was gained from the UKMS ethics committee and the NHS Research Ethics Committee (appendices).

Chapter 5
Questionnaire

5.1. Introduction

The results and analysis and discussion of the questionnaire are presented below. The two parts will be discussed separately. The first part asked about practical procedure experience gained during the final year and the second part about acute patient experience. For each procedure or scenario the student was asked how many times they had performed it and their self perception of competency to perform or manage it (reproduction of Table 4.1 from chapter 4 below).

Self Rating of Competence	Descriptor
1	Not feel competent to perform or manage
2	Feel competent to perform or manage under supervision
3	Feel competent to perform or manage without supervision
4	Fell competent to perform without supervision and teach others to do it

Table 4.1: Self Assessment of Students' Competence

5.2. Response Rate and Applicability

The response rate was disappointing. There were 121 students in the final year. The response rate for each sequential questionnaire - baseline and after each of the three SAs - was 63%, 44%, 43% and 51% respectively. Furthermore only five students responded via the online questionnaire throughout the year. The majority of responses were during the teaching sessions where the questionnaire was handed out and collected in person.

A questionnaire should be representative of the population that is sampled. In this circumstance I was interested particularly in the UKMS population so a very high response rate would have been needed. As the teaching sessions, where the questionnaire was distributed, were voluntary it may only have been the students that that were keen to learn that contributed so possibly not representative of the entire year.

Furthermore some students refused to participate in the questionnaire as they had "lots of questionnaire to do" and the timing after an afternoon session resulted in some taking the questionnaire away and not completing it. Throughout the year only 21 questionnaires were sent back completed when an envelope was provided for later completion.

My initial aim had been to correlate self assessment of competence with objective examination scores. However only a small number of students provided their pseudomised examination numbers to allow this. Similarly few students entered the placement they had just completed in the questionnaire so it was difficult to determine what experience had been achieved in which placement. Inference of the findings was therefore difficult. Therefore despite 4 questionnaires being sent out I present baseline and end of SA placement 3 data.

5.3 Practical Skills Results

Students were asked to estimate the frequency of how many times each procedure or skill had been performed in the preceding SA on real patients and how many times each procedure or skill had been performed in total. They were asked to self-rate their competency to perform this procedure. The following procedures or skills included in the questionnaire were only done in mandatory formal teaching –or on practice charts -and not with or on real patients: intravenous infusion set up; intravenous infusion of blood and blood products procedure; prepare and administer intravenous medications and injection; prescribe medications on a drug chart; prescribe subcutaneous and intravenous insulin –on a drug chart; prescribe intravenous fluid on a fluid chart. For these self-rating of competency was asked only and not frequency.

The estimates of the number of times each event or presentation was encountered at baseline and after the 3 SAs were compared and are presented in Fig 5.1. I have not

included the results of the interim questionnaire results as it was difficult to determine in which SA they had been achieved.

The reason why median was chosen rather than mean was because for each skill data were not normally distributed with marked positive skewness and there was wide variation in the number of times each procedure had been estimated to have been done. This data is grouped into four categories based on the median number of times each procedure has been performed; from the least where median = 0 to the most where the median was >10 (Table 5.1). At baseline the majority of skills where median = 0 were therapeutic e.g. Nebuliser administration, naso-gastric tube insertion and catheterisation. The median was >10 for venepuncture, automated and manual blood pressure measurement. After the 3 SA placements no skills had a median = 0 with 20/30 being estimated to have performed a median of >0 and ≤5 times; 3/30 a median of >5 and 10 and 7/30 a median of >10 times.

As the data is not of a normal distribution, significance tests between baseline and final number of estimated attempts have not been done. Descriptive statistics have been used to present the data.

The percentage of students that have rated themselves as competent to perform each procedure or skill without supervision is compared (Figure 5.2).

The percentage of students self-rating themselves competent to perform without supervision improved through nearly all procedures or practical skills. The lowest percentages remained those skills that the students cannot perform on real patients – prescribing and administering treatment like blood and intravenous fluids where supervision is required.

With regards to drawing firm conclusions it is difficult with this data as this is a self-perception and self reporting of competency and unfortunately correlation cannot be made with actual competence that was assessed in end of year assessments. There are limits to interpretation of self-reporting of competence alone and in their review Monrouxe's *et al* (2014) have commented that consultants and senior General Practitioners felt that graduates, at times, were less prepared than they themselves recognised.
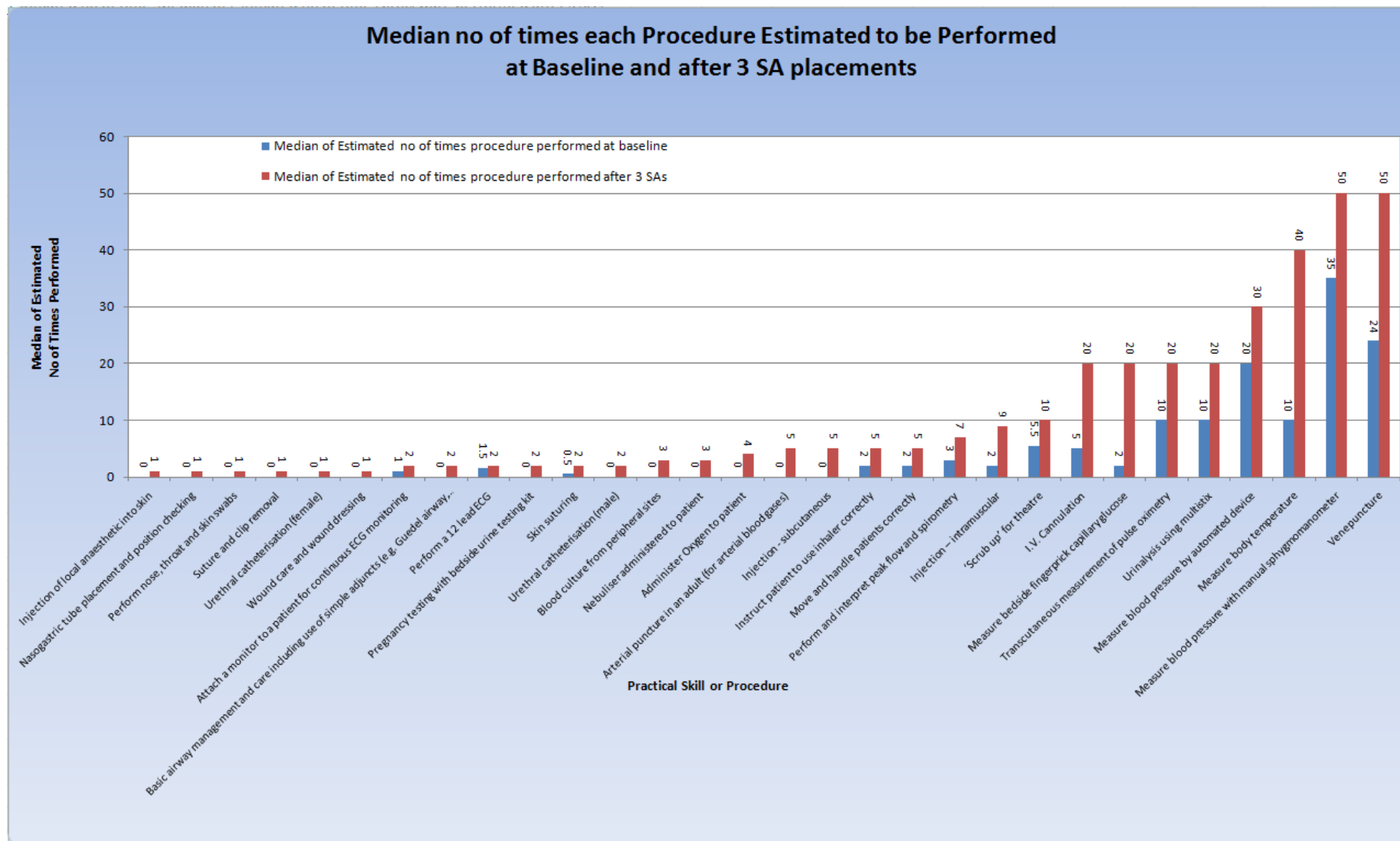
Fig 5.1 Median number of times each procedure estimated to be performed at baseline and after 3 SA placements

Median number of times category for each procedure								
Practical Skill or Procedure	Baseline				Final			
	0	>0 & ≤5	>5 & ≤10	> 10	0	>0 & ≤5	>5 & ≤10	> 10
Administer Oxygen to patient	✔					✔		
Arterial puncture in an adult (for arterial blood gases)	✔					✔		
Attach a monitor to a patient for continuous ECG monitoring		✔				✔		
Basic airway management and care including use of simple adjuncts (e.g. Guedel airway, nasopharyngeal airway)	✔					✔		
Blood culture from peripheral sites	✔					✔		
Injection – intramuscular		✔					✔	
Injection - subcutaneous	✔					✔		
Injection of local anaesthetic into skin	✔					✔		
Instruct patient to use inhaler correctly		✔				✔		
I.V. Cannulation		✔						✔
Measure bedside fingerprick capillary glucose		✔				✔		
Measure body temperature			✔					✔
Measure blood pressure by automated device				✔				✔
Measure blood pressure with manual sphygmomanometer				✔				✔
Move and handle patients correctly		✔				✔		
Nasogastric tube placement and position checking	✔					✔		
Nebuliser administered to patient	✔					✔		
Perform a 12 lead ECG		✔				✔		
Perform and interpret peak flow and spirometry		✔					✔	
Perform nose, throat and skin swabs	✔					✔		
Pregnancy testing with bedside urine testing kit	✔					✔		
'Scrub up' for theatre			✔				✔	
Skin suturing		✔				✔		
Suture and clip removal	✔					✔		
Transcutaneous measurement of pulse oximetry			✔					✔
Urethral catheterisation (male)	✔					✔		
Urethral catheterisation (female)	✔					✔		
Urinalysis using multistix			✔					✔
Venepuncture				✔				✔
Wound care and wound dressing	✔					✔		
TOTAL	14	9	4	3	0	20	3	7
Mean Percentage Self-Rating as Competent to Perform Procedure without Supervision for this category	16	49	81	97	-	59	82	94

Table 5.1. Estimated no of times each procedure or skill performed categorised by median
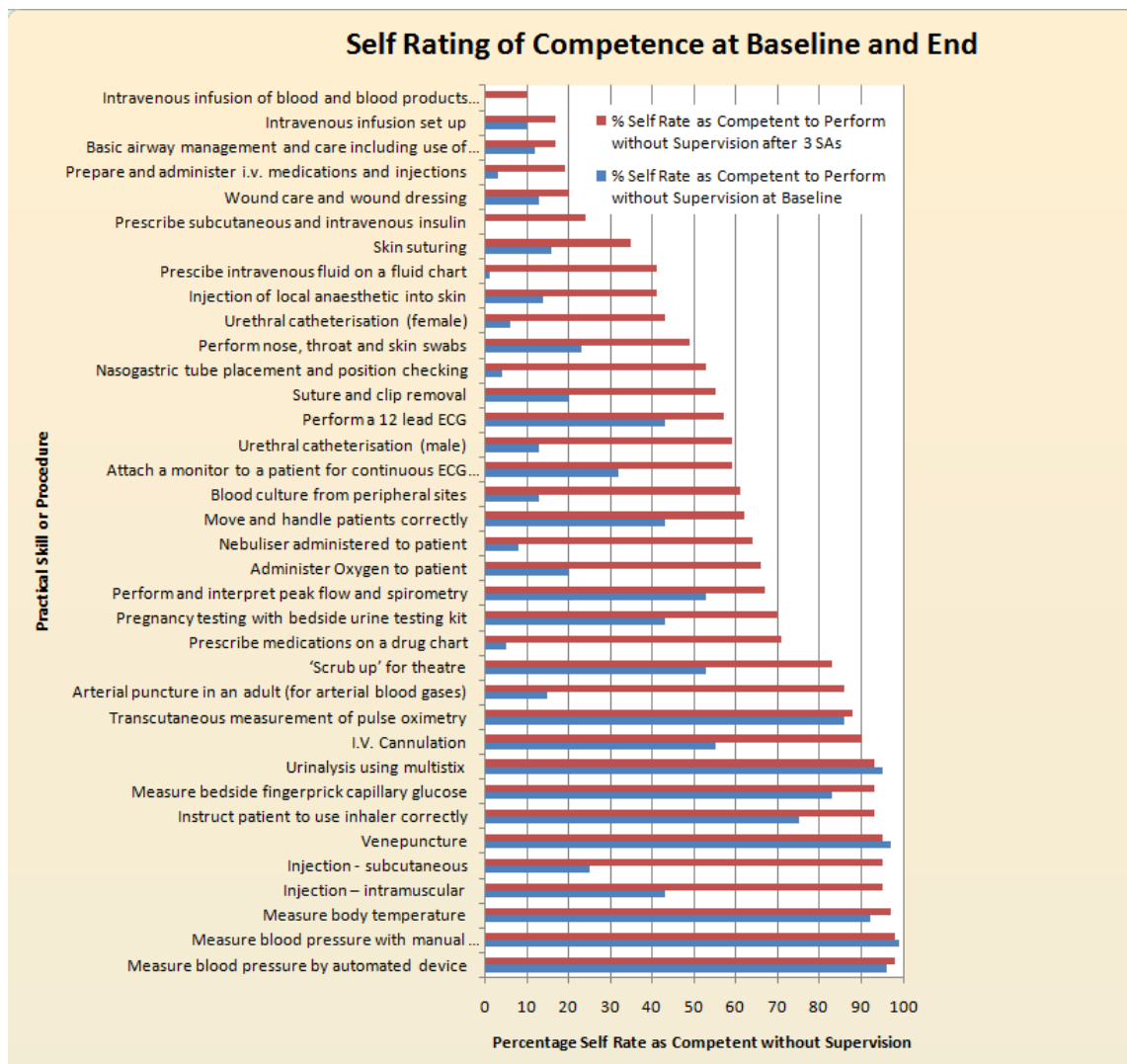
Figure 5.2. Self rating of Competence to Perform each skill without supervision at baseline and after 3 SAs

So it is difficult without correlating to objective assessment whether students are actually competent in these practical procedures. The quantity of practical skills the students are exposed to are very variable with wide variety in the number of self reported times each has been done. What was apparent when data were being entered into a database was that as the estimates became larger these were usually reported in multiples of five or ten. Therefore after attempting a skill several times the student may not be able to accurately recall the actual number performed. This data would only be obtainable if a log book was kept including quantity, and at the time at UKMS this was not done. This probably further skewed the data markedly and made it more difficult to perform any significance testing.

5.4 Results of Managing Acutely Ill Patients

The results of the second part of the questionnaire are presented here. Again baseline data and after the final SA are presented.

Students were asked to estimate the frequency of how many times each acute presentation or event had been seen in the preceding SA and in total; self-rate whether they were now (i) competent to assess this situation without supervision (ii) manage this situation without supervision. Estimates of the number of times each event or presentation was encountered at baseline and after the 3 SAs were compared (Figure 5.3). In this boxplot the interquartile ranges are highlighted and the tails do not represent the maximum and minimum but the fifth and 95th centile. The reason for this is that some students responded that they had seen hundreds of each scenario.

At baseline the median estimated frequency of all were ≤ 5 except the presentations of chest pain, headache and fever. After 3 SAs the median for the majority of events or presentations remained ≤ 5 except chest pain, headache, fever, acute breathlessness, acute coronary syndrome, stroke, exacerbation of chronic obstructive pulmonary disease, acute abdominal pain. The median for anaphylaxis and post-operative collapse remained zero.

The percentage of students that rated themselves as competent to assess and manage each procedure or skill without supervision is compared (figure. 5.4). These improved throughout all listed events and presentations even when the medians of frequency remained small or unchanged like cardiac arrest or anaphylaxis. The higher percentages were in those where the median frequency estimates were highest.

In conclusion, students experience of acute events and presentations remains limited. Management without supervision may not be an expectation for recently graduated doctors, but they would be expected to make an assessment in some situations –oliguria, impaired consciousness, post-operative collapse, where percentage self-rating as competent to assess without supervision remained < 50%. This in similar to research that has been done previously (Illing *et al*, 2008) whereby students did not feel confident to manage unwell patients. Despite this their self rating of competency in assessing and managing these improves. This may be through teaching outside of the clinical environment for example in simulations.

5.5 Conclusion

The questionnaire was set up at the commencement of the project when it was primarily an evaluative exercise and not an exploratory exercise. I felt it was still important to include. Firstly it represents what remains one of the main methods of generating data in the medical education field. Secondly, even though my perspective on the concept of preparedness may have changed, the attainment and measurement of skills through quantitative methods is still pertinent as these skills are still fundamental to be prepared. Furthermore when considering Bourdieu's concepts knowledge, and skills are cultural capital that the student will bring to the field.

The process of the questionnaire had some unforeseen aspects. Despite junior doctors having been involved in the pilot, many students left sections uncompleted or felt the questionnaire design was too long. Students were also required to evaluate multiple parts of their course with multiple questionnaires and some felt this an unnecessary further questionnaire. I feel the longitudinal approach with a survey periodically at set times was the correct approach to see how these skills and experience were attained during the year. However the capture of a sufficient number of students was difficult. In retrospect I would have attempted a shorter questionnaire and used a binary self assessment of competence and not the ordinal 4 point scale. Students would have been asked whether they felt competent or not. Adding in the query about supervision may have confused some as they may not have known what level of supervision each item required.

Even though this remained a useful exercise to feedback to UKMS, and reflected some previous research, ultimately it was found that the quantitative questionnaire approach was not suitable in exploring preparation in depth or understanding the socio-cultural aspect of preparedness.
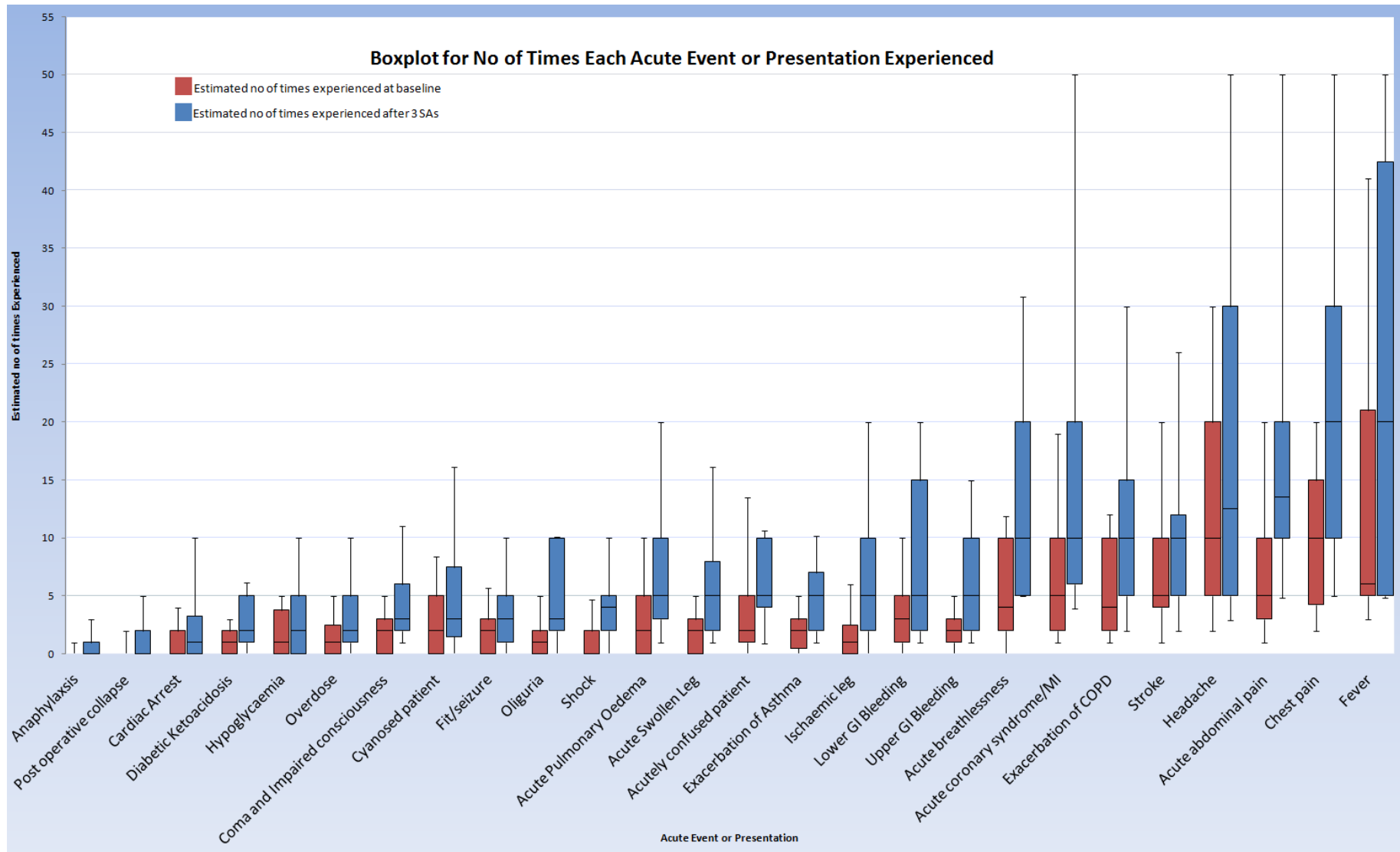
Figure 5.3Boxplot of No of times each acute event or presentation experienced at baseline and after 3 SAs
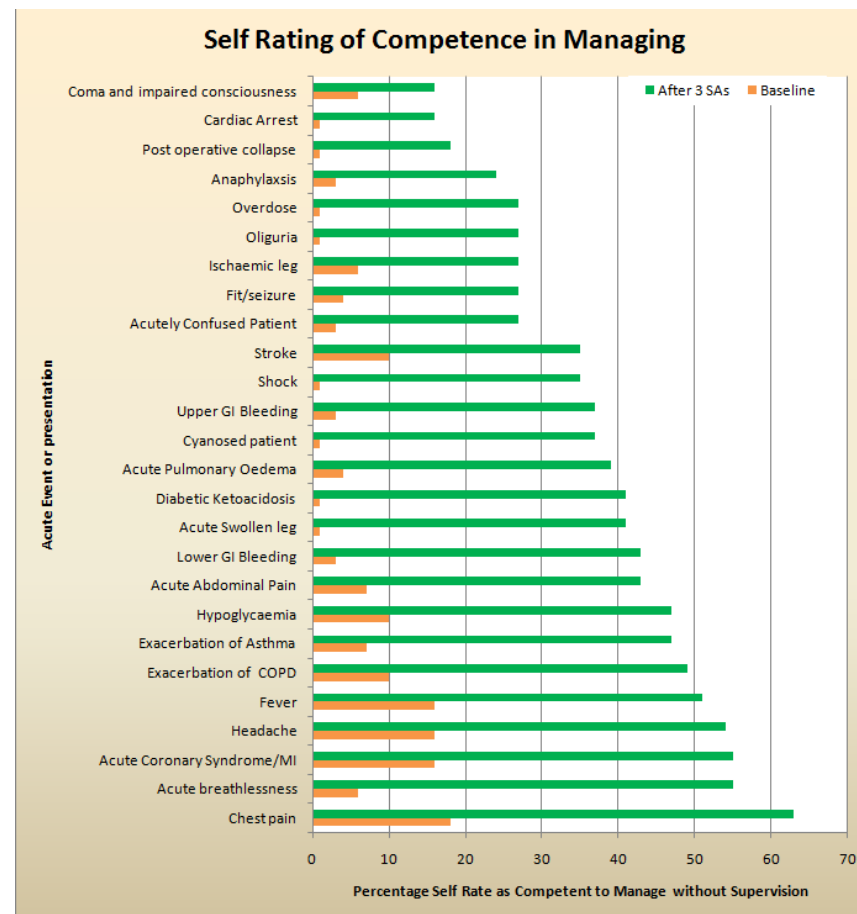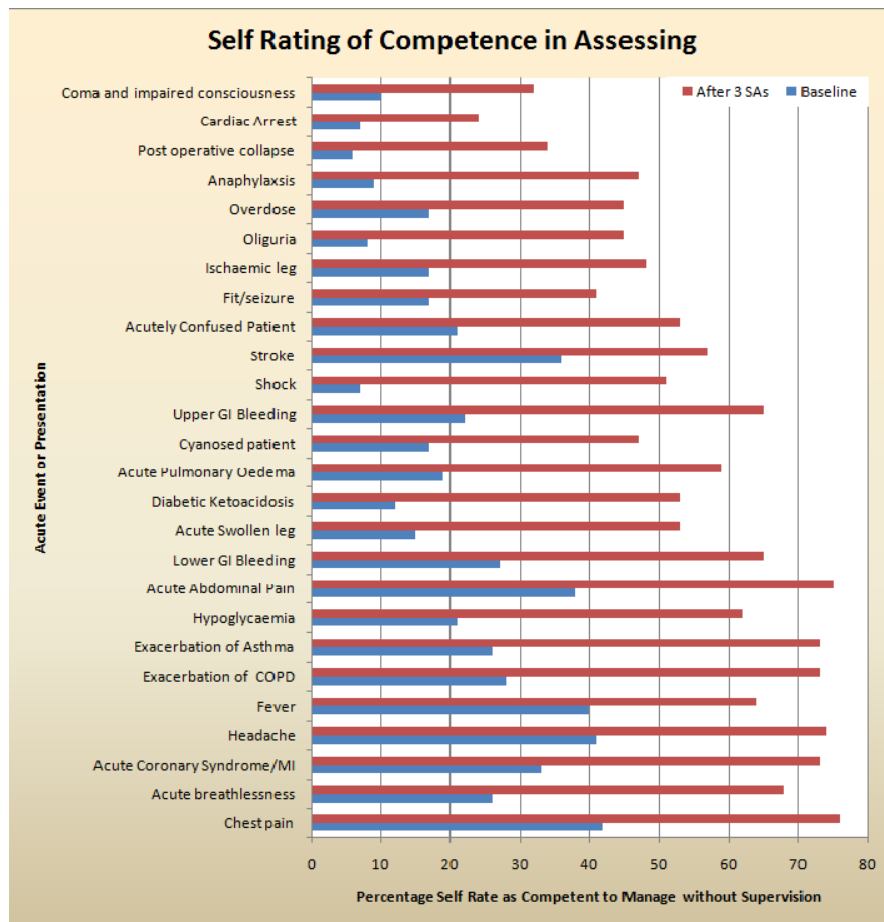
Fig 5.4 Self Rating of Competence in Assessing (left) and Managing (right) each acute event or presentation without supervision at baseline and after 3 SAs

Chapter 6
Qualitative Research Results

6.1 Introduction

This chapter presents the details of the participants that were interviewed and involved in the focus groups.

Although each dataset was analysed separately, eventually the data was coded with the same analysis chart. I have chosen to present all the thematic analysis together to save repeating themes in each separate analysis, and because differing views on the same theme are presented by different participant groups.

As analysis proceeded, an analysis grid was populated with the key themes identified. The analysis grid is presented as a table of these themes which is also the framework for presenting the results. The individual themes are then discussed in turn.

The method chosen including a discussion of the methodology approach has already been presented in Chapter 4.

A reflexive discussion of how the interview and focus group process proceeded follows presentation of the results.

The themes are presented in the discussion and also by applying Bourdieu's concepts of field, habitus and capital in Chapter 7.

6.2 Participants

There were four groups of participants in this project: final year medical students, UKMS graduate FY1 doctors that had remained in the region and were working at UKMS affiliated hospitals; SA placement supervisors; and stakeholders. The reason for including stakeholders is explained below as well.

6.2.1 Medical Students

34 medical students participated in the focus groups in total. 10 focus groups were organised. The dates and number of participants is outlined in Table 6.1.

Focus Group	1	2	3	4	5	6	7	8	9	10
Date (dd/mm) (Dec 2010 to Apr 2011)	10 Dec	13 Dec	17 Dec	21 Dec	22 Feb	28 Feb	04 Apr	18 Apr	19 Apr	19 Apr
No of Medical Students	3	6	0	8	6	7	3	5	0	3

Table 6.1 No of medical student participants in each focus group

More than 4 medical students were at 5 focus groups. I still continued the focus groups with three participants as there was the possibility that students could join mid way through. This did not happen, however. I found that the focus groups with fewer than 4 participants were still useful as discussion was generated. These were therefore analysed as well. Therefore 8 focus groups were analysed. There were a total of 34 students with 15 male and 19 female. 7 students participated in two focus groups; none participated in three or more. As the group knew each other commencement of discussion was not difficult and focus groups lasted for one hour maximum (range 24.31 to 59.24 minutes). Food and snacks were provided to the medical students and these focus groups were arranged during lunch times. The medical students were each assigned an anonymous identifier code MS1 to MS 34.

6.2.2. FY1 Doctors

22 of the 52 FY1 doctors that had remained in the region participated in the focus groups for FY1 doctors. Six focus groups were organised in total. The dates and number of participants are outlined in Table 6.2.

Focus Group	1	2	3	4	5	6
Date (dd/mm) (Feb 2011 to June 2011)	08 Feb	21 Feb	21 Mar	09 May	23 May	13 June
No of FY1 doctors	5	5	2	1	6	4

Table 6.2 No of FY1 doctor participants in each focus group

Four or more FY1 doctors were at 4 focus groups. I still continued the focus groups with fewer than this number of participants as there was the possibility that FY1 doctors could join after commencement. These focus groups occurred after 5 pm after the shift of the doctors was completed. Some FY1 doctors who said they may be able to attend could not because of unexpected work resulting in finishing late on the ward. Because of this sometimes the focus group did start late and did take some time for the FY1 doctors to start to engage in discussion, presumably after finishing a busy shift. The focus groups with 4 or more participants were analysed. The focus group where only one FY1 doctor attended was a participant who had been at a previous focus group. Therefore the contribution of 20 FY1 doctors was included. The focus groups lasted for about one hour (range 38.48 minutes to 1 hour 3.44 minutes). Food and snacks were provided to the FY1 doctors. The FY1 doctors were each assigned an anonymous identifier code: F1 to F20 (focus group with two participants not used).

6.2.3. SA Educational Supervisors

17 educational supervisors were interviewed in total. Of these 5 were General Practitioners (GP), 5 were consultant surgeons and 7 were consultant physicians. 7 consultant physicians were interviewed as in two of the interviews, despite being supervisors, it was realised that the participants were not familiar with the structure and purpose of the final year at UKMS and the interview did not explore the issue of the SA or preparedness. For these two the audio-recording was not used and not transcribed or analysed.

The educational supervisors were each assigned an anonymous identifier code. The five physicians were ES-P1 to ES-P5. The five surgeons were ES-S1 to ES-S5 and the five GPs were ES-GP1 to ES-GP5.

6.2.4 Stakeholders

The purpose of expanding the project and interviewing stakeholders was so that the field of medical education could be understood. As the aim was to combine the findings and also to contextualize the results in Bourdieu's three concepts it was felt that a greater understanding of the field in which the learners – F1s and medical students – practise was needed.

Delivery and organisation of medical education requires the partnership of three organisations. Firstly the medical school organises the undergraduate curriculum, following GMC guidance, and advises on learning outcomes as well as methods of assessment to demonstrate these learning outcomes have been achieved. Secondly NHS organizations are commissioned to provide the work learning environment – with clinical teaching and exposure - where learners can have real clinical experience to achieve these learning outcomes. Thirdly, the postgraduate deanery also has a role in medical education but is responsible for overseeing postgraduate education delivery within the region for qualified doctors. Therefore, interviews with representatives of UKMS, the deanery and the NHS were conducted. It was felt, to understand the field of medical education and the relationship between these organisations, that most insight would be gained from those that had a leadership or managerial role in these three organisations. The term stakeholder was used for this group. This term was used because these were individuals who had the influence, or

represented organisations that had the influence, to affect the delivery of medical education in their area. The final list was selected from discussion amongst the UKMS medical education group.

From the NHS Trusts affiliated with UKMS six medical directors were approached including two who were not incumbent medical directors but had held that position in the previous five years. Three of the six medical directors approached agreed to be interviewed. One of the six declined stating he/she did not feel familiar with the education process to be able to offer a valuable interview after reading the participant information sheet. The fifth and sixth medical directors did not reply after the initial invite and a reminder invite e-mail four weeks later. The contact details had been verified with their secretaries.

Two directors of postgraduate education working for the deanery were approached and both agreed to be interviewed.

Five UKMS representatives were approached and interviewed. Their roles included leadership and management of the undergraduate medical student programme. The roles were varied from being year leads to being whole undergraduate programme leads.

Three representatives of non-UKMS undergraduate programmes were also invited to participate in an interview. These were undergraduate programme directors at non UKMS medical schools. Two agreed to be interviewed. The third initially agreed but was eventually unable to provide time for the interview and so did not participate.

Even though this was a study focusing on UKMS it was decided that views outside UKMS, from these non UKMS undergraduate programme directors should be sought. It was felt that these individuals had particular insight into the medical education field, and they would also provide a non UKMS view.

Therefore 12 stakeholders were interviewed in total. The transcripts were anonymised as per requirement for ethical approval including omission of any information from the interviews that may have been able to identify any individual; for example a reference to their own place of training or their own specialty. A further stipulation was that any quotations used in the results would require review of the interviewed stakeholder with opportunity to withdraw their inclusion.

One of the UKMS representatives interviewed was not available to review their quotations so these were not used. One postgraduate education representative

withdrew their consent when presented with their quotations so these were not used. All the stakeholders had worked in a clinical medical role as doctors in their career as well. Some had held roles in more than one organisation (a medical school, the NHS, the postgraduate deanery). They were approached regarding their main role, and this is the position described in Table 6.3. The stakeholders were each assigned an anonymous identifier code and Table 6.3 provides their position description. Again, actual specific titles have not been included but broad role description provided instead, to try to avoid possibility of identification. 'SS' in the interview quotations is the interviewer.

Stakeholder Identifier Code	Role
SH1	Leadership Role in Undergraduate Education at UKMS
SH2	Leadership Role in Undergraduate Education at UKMS
SH3	Leadership Role Locally in Postgraduate Education
SH4	Leadership Role in Undergraduate Education a non UKMS medical school
SH5	Leadership Role in Undergraduate Education at UKMS
SH6	Leadership Role in Undergraduate Education a non UKMS medical school
SH7	Leadership Role Locally in Postgraduate Education
SH8	Leadership Role in Undergraduate Education at UKMS
SH9	Medical Director of UKMS affiliated hospital
SH10	Medical Director of UKMS affiliated hospital
SH11	Leadership Role in Undergraduate Education at UKMS
SH12	Medical Director of UKMS affiliated hospital

Table 6.3 Stakeholder Characteristics

6.3 Analysis Grid Constructed from Identified Themes

In this exploration of the social structure factors and individual learner factors I identify and present six linked, interpretative themes that explain and give greater insight into the process of preparedness of medical students for professional practice.

These themes were derived by applying the Framework analysis method described in Chapter 4.

The "familiarisation" stage of Framework analysis occurred during listening to the audio-files and transcribing them verbatim. As I was the sole researcher involved in this process I reviewed all the material and could 'immerse' myself in the data for this to occur. I began at this stage to form initial opinions and ideas about the themes in the data. At this stage many these themes were *a priori* and had been raised as topics to discuss and are in the topic guides (appendices). These included prescribing, clinical skills and at this stage this was mainly a descriptive analysis. This is where the initial coding of the data commenced. Ritchie and Spencer (1994) use the term indexing to describe this process (instead of the term coding) where portions of the data are identified as corresponding to a specific theme. As I reviewed the transcripts I annotated the margins of the transcripts with specific themes that I maintained a list of. As new themes emerged I went back to previous transcripts and worked through them to see whether the themes were present there as well. I had initially started this process with NVivo but found this restrictive as it did not allow be go back quickly and look at previous pages in the transcript and review them.

Once I had indexed the data I moved to "charting" stage of framework analysis. This involved arranging specific parts of the data and "lifting" them from the original transcript into a chart. The charts originally described by Ritchie and Spencer (1994) involved cutting and pasting sections of data and having a chart for each theme with subthemes included. The was a table/matrix with participants sequentially listed in the left most column with a row for each participant and all rows to the right of this headed by a subtheme. Microsoft Excel was used for this and data cut and pasted into corresponding cells so that the source (the participant) and the theme could still be identified. As Excel allows multiple worksheets each main theme had a separate worksheet.

The final stages were "mapping" and "interpretation". This involved reviewing the charts, making a judgement about the meaning of the themes and the relevance to the projects aims. Overlapping and similar themes were combined as the themes were reworked. His reworking involved looking for associations, interpreting the data, and identifying the key themes relevant to the aims of the project. Through this process I finally arrived at the core themes and subthemes in Table 6.4.

I arrived at six main themes. In presentation of these results, first I explore the "collaboration of organisations", whereby the respective contributions, requirements and mandate of each organisation influences its role in preparation. I discuss how despite being a partnership, organisations can be constrained in their influence on preparedness. The second theme I present is regarding the 'FY1 role' and its changes and expectations and how this affects the value it can provide educationally to the FY1 and the medical student. The third theme concerns 'uncertainty of preparation' where the actual viewpoint of what preparedness differs between individuals and the effects of its subjective interpretation. I then move onto 'situated learning' and how the non alignment of learning outcomes and assessment affects students preparedness and what they wish to achieve in the SA. The fifth theme is the 'supporting network' and changes in team structure and its effect on socialisation into the hospital setting. Lastly I discuss the theme of 'scrutiny and patient safety'. Here the discussion relates to how changes in the perception of risk influence preparedness.

Main Theme	Sub theme
Collaboration of Organizations	Shared Organization Role
	Constraints on Responsibility
	Communication between Organizations
FY1 Role	Change in Expectation of Duties of FY1
	FY1 as Entry Point of Training
	Restructure of Postgraduate Training
Uncertainty of Preparation	Preparation to Start Learning the Job
	Specificity of Preparedness
Situated Learning	Non Alignment of Experiential Learning and Assessment
Supporting Network	Integration into the team
	Change in firm working
Scrutiny and Governance	Responsibility shift
	Patient safety

Table 6.4 Themes identified from analysis

6.4 Results

6.4.1 Collaboration of Organizations

This theme was identified in the stakeholder discussion predominantly looking at how the organizations − UKMS, NHS, postgraduate education − worked together to deliver education and prepare students for professional practice.

6.4.1.1 Shared Organization Role

There was the generalised opinion, from participants across the organizations, that delivery of education and preparation of the student for professional practice was a shared responsibility between the medical school, the university and the student, as described SH6 - a non UKMS undergraduate programme lead - below.

SS: So they [new graduates] need to be work ready for when they start work. But whose responsibility is that?
SH6: Yeah, complex answer. Clearly there is a responsibility on those who design the curriculum and the associated assessments to ensure that the course itself

maximises the chances that the individual will be ready. So there is a responsibility on the universities. The second bit; there is also a responsibility on those who actually provide the opportunities for students to understand what clinical practice is really like. In other words those who provide clinical placements, primarily hospital settings but also community based settings, to ensure that what the student experiences does actually prepare them for clinical practice. So there is something about how the curriculum is applied in NHS settings. So there is an NHS responsibility. The other area is that students themselves have some responsibility…

SH7 – a representative of the deanery - also described it as shared.

SS: Talking about preparedness, whose responsibility is that?
SH7: mmm…everybody's. The student to take part in it enthusiastically and positively, the medical school to commission the right environment and set the structures up or give them access to the right environments and make sure it's all delivered in the right order; the trusts and the educators in the trusts to recognise the students as future colleagues to be drawn into the system and shown how its to be and to some extent the more they're treated as part of the system as opposed to visitors who walk onto the ward for an hour or two and walk off again, the more the students will understand what going to be happening to them. And the deanery has a role in that the foundation school is the first place at which the problems become identified and start being dealt with so the more the foundation school and the medical school understand each other's views on this and can adapt year five in the right way, the more you move towards a continuum.

Both SH6 and SH7's response suggest that despite recognising that responsibility is shared that this is not always straightforward. SH6 used the phrase 'complex answer' and SH7 talked about how the clinical educators need to bring the students 'into the system' suggesting an area where there may be difficulty.

6.4.1.2 Constraints on Responsibility

The response below, indicates why this responsibility may not be straightforward. SH5 described further how the organizations are responsible but more specifically the limits of responsibility and influence of the medical school and the difficulties of

providing an educational environment in the care and service setting that is 'designed for something else.'

SS: So whose responsibility is it then to make sure they [new graduates] are prepared?

SH5: It's multiple responsibility. It's clear the university has a responsibility; the university signs people off, it sets the exams and has to mark them and clearly that's a major responsibility but the university is strictly constrained; it doesn't own the hospital; it certainly doesn't own the patients, it only owns a very few of the staff so the responsibility really lies very heavily with the NHS and in particular the hospital system but also primary care and some of the problems I think which you may come to relate to the difficulty in inserting good educational experience into a system actually designed for something else.

SH5: ... the medical school can only do it with the NHS and the commissioners. All the medical school can really do is divvy up the students and send them round to different people and set an exam at the end; that's all we can do literally. The rest of it is actually in the hands of the staff.

SH4 similarly described the difficulty of fitting in education in the clinical environment, but for FY1 doctors, rather than students.

SH4: I've been in some Trusts and they say, "We actually don't want doctors thank you very much, we don't want FY1 and FY2s; they're a difficult bunch, they're always moving around, they need all this training and stuff and development. All I need is someone who can come and do the job, who stays in one place and I don't have to pay as much and I know will always be there and I can control better. Well if you're a manager of course that is what you might feel, so what we're seeing is that Trusts have become progressively less engaged with education."

Despite education being a shared role SH4 implies that the NHS and its representatives may have difficulty in taking on responsibility. SH5 gives the following explanation for education seemingly taking on less of a priority than outcomes in other areas like patient outcomes.

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representatives may have difficulty in taking on responsibility. SH5 gives the following explanation for education seemingly taking on less of a priority than outcomes in other areas like patient outcomes.

SH5: But I think it's true that the NHS find it difficult to meet their obligations if we put some obligations on them and the reason for that is, as I often say, there are no votes in medical education. No government is going to fall, no minister is going to be in trouble because the undergraduate education of doctors is not everything it might be. There might be individual episodes that would be regrettable but nobody is going to be seriously in trouble so when the chips are down it's always the patients who win out and all the processes that have been put in place over the last 10-15 years or so in the NHS, very few, if any (I can't actually think of any), are to do with education.

This view of education being less of a priority mainly came from the university representatives but the view from the NHS was quite different.
When SH9 – a medical director – was asked about this the response was that the quality assurance structure surrounding medical education was more robust than previously and education was still a high priority.

SS: Do you think education has taken less, is less of a priority nowadays because of other more important things?
SH9: Not from my perspective or from a board's perspective. I think we are very conscious of, if you like, the contract that we hold both with the deanery and with the medical school. There's a significant financial consequence of that. I think if you go back over the years, you know, college visits, things like that that used to happen - what was the impact of them? I personally feel that there's much more in the way of quality assurance of the training that we give, the GMC surveys, we are developing more metrics and it is in our interests to look at the pass rates of trainees, whether it is sign off through their e-portfolios or whether it is actually about exam passes.

SH11 – a different stakeholder from UKMS – expressed similarly that he/she did not feel the priority of education had lessened but the explanation may lie in 'different agendas' including 'health and safety' in limiting and constraining what the hospital

can provide.

SS: Or perhaps other things have taken more of higher priority, other things where outcomes can be more easily measured?

SH11: I don't think that's true. From my experience it's not true; I think it is taken very seriously still and quite remarkably so considering all the different pressure on the NHS. I suspect there are two things that have happened, or certainly local to here. One is that somewhere along the line the partnership working has been lost a bit and the NHS has felt less involved in decision making and less valued and the second thing that has happened there have been other agendas in hospitals particularly health and safety agendas which have tended to lead to students being given less responsibility at a time we would hope they'd give more. I think that has been an unintended consequence of some of these different agendas that hospitals have. And I think that the hospitals, the Trust directors are aware of that and have to be continually reminded of the consequence on our students of it and I think that is the university's responsibility.

The last sentence in SH11's comment above stresses the importance of the medical school leading on education, and this was also expressed by SH4 – a non UKMS undergraduate lead.

SH4: It's the local schools to get the people to the sufficient level so we can then say that yes you are suitable for registration as an F1 with the GMC. That's not saying that's our entire responsibility, we have to involve lots of other people but there has to be somebody in charge.

So despite recognising that there is shared responsibility there seems to be the view from these medical school stakeholders that the medical schools need to lead in education. SH4 explained that the reason for this is that the educationalists are familiar with the assessment process.

SH4: It cannot be lead I think by the NHS and there are a number of reasons for that; one is that the SA is a piece of activity that has to be engaged with satisfactorily by the students. In other words there has to be some form of assessment and the

NHS would not be a suitable vehicle to do the assessment. The assessment has to be linked to the recommendation of the university to the GMC that and individuals suitable for registration as an F1.

Furthermore SH12 - a medical director – was clear that the lead and ultimate responsibility lay with the medical school.

SH12: The remit of, as I understand it, of a medical school when it's both initiated and then if not actually licensed but at least agreed, approved, signed-off by the General Medical Council is that it is fulfilling that role in producing doctors at a training level who have graduated ready to undertake further training as clinicians. So my view would be that that responsibility, yes, lies pretty fairly and squarely with the medical schools themselves as part of the undertaking, as part of being commissioned to deliver doctors.

6.4.1.3 Communication between Organizations

The two sub themes above have described the opinion of a shared responsibility to educate and train and that there may be some difficulty in NHS educators taking on that role. However three stakeholders (SH4, SH6, SH11) from the medical school side felt this was usually due to communication, from the medical school, about the purpose of placements not being clear.

SH4: ...we've got the correct level of engagement from everyone. Every single person has been briefed. I've spent the last few months going around every single site where the students are going and have been to so many meetings briefing people, discussing with them, refining what we're doing, listening very carefully and I think the product [SA placement] is going to do the job.

SH6: To an extent what the NHS does in it's placements is in part determined by what the NHS is able to and wishes to provide, but is also in part dependent on them having a real good understanding on that they need to provide. And I think if there is a problem within the NHS, within NHS placements, part of that might be down to them and what they're willing and able to provide. I think a lot is down to relatively weak communication between the university and NHS providers in terms of what it is

that the university wants them to provide…..I think there needs to be a very good dialogue between those of us who are supposed to have an understanding of what we are trying to achieve and those who are providing the placement. And my sense of it is that dialogue is quite often not as robust as it could be.

SH11: *I suspect one of the tricks of introducing change is to make sure you have got buy in from everyone involved in the change process and I am not sure we have always communicated well with the NHS or treated them as full partners as we've developed change. I think that is particularly true in year 5.*

These three quotations point towards the change in the undergraduate medical education field with specific outcomes that the university must base their curriculum on (Tomorrow's Doctors 1993, 2003 and 2009) and how that message may not get to the NHS education provider. The medical schools GMC inspections uses these to assess the educational programme at the medical school. There were only six years between the 2003 and 2009 versions of Tomorrow's Doctors and with the long lead in the undergraduate course of 5 years until qualification this message may not have got across to the NHS education providers. This is coupled with the expansion of medical student intake: 3594 in 1996/97 to 6418 in 2010/11 in England (Health and education National Strategic Exchange Review Group, 2012). With this expansion it may be this education is being provided by organisations that were not previously doing so and so are unfamiliar with the educational changes implemented.

6.4.2 FY1 Role

The FY1 post is the first job, after graduation, that a doctor has in the UK. Successful completion of it results in full registration with the GMC. Analysis of the transcripts identified two sub-themes relating to the FY1 role.

6.4.2.1 Change in Expectation of Duties of FY1

The first sub-theme was that there seemed to be a change in the expectations of a FY1 doctor.

SH2 described how some of previous expectations and responsibilities of final year students had moved into the FY1 and FY2 placements and were expected outcomes at that later stage now.

SH2: Well you can argue that we've actually extended the training into FY1 and FY2 because of taking away responsibility from students and then only giving it in FY1 and really in FY2 and you can say that yes that the divisional responsibility if you like rests with the deanery but in fact what we've done, or the GMC or whoever it is have done is taken responsibility away from the students and then just push it into these two years…

This was similar to the description from SH5, in that a lot that was previously expected at undergraduate level was now expected at foundation level.

SH5: I haven't looked at the FY1 curriculum recently but when I did look at it looked pretty undergraduate to me with a whole load of stuff that one would take for granted for an undergraduate. So it didn't seem to me to articulate well with the undergraduate and I think that was a weakness of a whole postgraduate curriculum writing process.

SH4 also described the change in the FY1 posts where this is also having an impact on the medical schools being uncertain about the post graduates will go into.

SH4: I think actually we are preparing people in the UK pretty well for FY1 posts but the trouble we have in medical schools is that the FY1 posts are constantly changing so that if you go back a year we had these things called assessments during FY1 which are now being changed to Supervised Learning Events, so you know the foundation office is forever tinkering and doesn't have all the same sort of academic rigour I think in this approach to assessment that you might actually find in a university.

Additionally the opinion from some stakeholders from both the university (SH6) and the NHS representatives (SH9) was that the F1 job was viewed differently from previous years with differing expectations.

SH6: I think the NHS is more aware now than ever, that the FY1 is a training year. I get no sense that people see the FY1 year in the way they used to see the old pre-

registration house officer. As somebody who should just be able to hit the ground running and do the job and be on call that night. I think the NHS is way, way, way more aware of what it's dealing with. So the implementation of the new arrangements for pre-job shadowing that are coming in next week for all the UK graduates. The sort of teaching that is put around the FY1 year, I think, is - ok it may not be perfect by any means but - I get no sense that the NHS believes that these people will just hit the ground. I think there are people within the NHS who believe that they should be able to do that but I don't believe the overall prevailing culture is that they will hit the ground running. I tend to hear two voices expressing that. There are those voices saying, "Look, let's be realistic, you can never be ready for the job until you really hit the ground and we as an NHS need to be in a position to support these people as they hit the ground and particularly support those people who struggle more." So they have quite a supportive insight. And there are those who have the same insight but are much more negative about it saying, "You know, it wasn't like this in my day, the medical schools don't prepare them for their role type stuff," but still it is an acknowledgement that you can't expect them to hit the ground running. So I am not convinced that the NHS has unreasonable expectations.

SH9: *From my perspective, I would say that, now I expect less in the way of service from an F1 and recognise it more as being completely supernumerary than ever before. You know, as, again if we go back the FY1 year or the pre-registration year was actually six months in medicine and six months in surgery. I personally don't believe that four months is long enough in any one particular rotation for the trainee to gain enough experience and enough confidence to take up a role that has significant responsibility and I think that's a disadvantage....And I don't see what some people claim to have seen which is a deterioration in the quality of the output of medical schools. But I do think that a four month period, including some holidays and some time out for training means that it is limiting and limited about what you can do to give that doctor enough responsibility and therefore confidence. And I think we were very conscious about the fact that it is a training role.*

Both of these comments suggest that less responsibility is expected of FY1 doctors nowadays compared to previously. This also may affect the value that is placed on the FY1 job. One stakeholder from UKMS (SH5) questioned the value of getting

final year medical students to take on the role of acting up as a FY1.

SH5: Yeah I think there are several forces; I have always said that there is more to medicine than the FY1 job and I think we mustn't forget that. It is an and/or, yes we must prepare people thoroughly for FY1 but we must do more than that. Do we? Well I think we probably do; in some ways being an FY1 can be quite straight forward. There are patients to clerk, bloods to take, preliminary diagnoses to make, there's making the thing work is all FY1 post. There is relatively little independent thinking.

SH5: One explanation may be coming back to what I was talking about earlier, in that much of the task is actually routine and repetitious and not a good learning experience either for the students or for the FY1s for that matter and only a relatively small part of it is.

SH9 described above the change in expectation partly due to shorter F1 placements in the F1 year. SH6 expressed uncertainty for the different expectations but felt lack of team-working and the European Working Time Directive may be factors.

SH6: Now I don't know whether actually what's happened over the years, is that the NHS has gradually woken up to the fact that these people are not ready to make significant decisions because they've not done it before and so has put more protection around them and that's why the job isn't the same. Or whether it's we as universities haven't prepared them as well as the doctors of old and so these people are not ready for it so just by default they don't do as much. I don't know what it is, but I don't think it is the same as it used to be. And it is also affected by things like the working time directive and all that sort of thing so people don't play in teams in the same way that they used to. So that there's no sense of an FY1 starting in let's say 1st August on the edges of a team and by mid-September or the beginning of October, being pretty well integrated as a core part of the team. People having a pretty good sense of what they are capable of and in some instances allowing them to do quite a lot because they're clearly ok. There isn't that sense for me, and, so those may be factors that have influenced it. So I think it is true that lots of people say, "I don't really know what an FY1 is." And I think it is also true that both FY1s themselves and students who shadow F1s are slightly disappointed that the role isn't

quite what they were expecting because I think they had in their mind that it was, what they were expecting was probably closer to an ST1, possibly an FY2 role where there was a bit more autonomy of decision making.

SH6 above also described how students may not feel there was educational value in shadowing FY1 doctors resulting from the reduced responsibility of F1s, and they may view it as SH5 described above as 'routine' with 'little independent thinking.' This was an opinion of students in focus groups. When MS4 was asked about what the purpose of the SA was the response included discussing that he/she did not expect the FY1 to be involved in management decisions.

SS: What do you expect to achieve from SA placements?
MS4: …the management side of things, practically in the wards. I know the FY1s in the real world often don't really get to make real management suggestions and wanting to contribute to that, whereas we have a management paper to take…

This theme also came out from some of the SA placement supervisors:

ES-P3: I can say something rather controversial and that is because FY1 is sometimes seen to be very supported and almost supernumerary. I get the impression that FY1s are given support all the time and all the decisions, the important decisions are made for them so they do not have to worry about that. They just have to turn up on the first day and people will guide them through it.

Therefore the role of the FY1 has changed with less responsibility than previously. Additionally this seems to have affected students too as they question the educational value of engaging in the SA and taking some responsibilities of a FY1 to gain specific knowledge for their exams

6.4.2.2. FY1 as Entry Point of Training

Despite the view that the expectation from the FY1 were less than in the past, it was also felt that this was still a big focus for the graduating doctor. Medical school representatives recognised that focusing only on the F1 may not allow development of some of the other skills required of a doctor.

90

SH4: We're preparing people so that they can become F1s at the point of graduation but we're also preparing them for much more than that so that the skills, the attitudinal issues are picked up, the behavioural issues will serve them well for a lifetime.

When asked about whether the focus on F1 as an outcome was too constrained, SH6 recognised aiming for these broad skills, but also pointed out that pragmatically the F1 job was what graduates had to be ready for and expressed uncertainty about what 'preparing you to be a doctor' actually meant.

SH6: In education you're always going to be making; you are going to have to balance some compromises. So on the one hand do you say we are trying to prepare you to be a doctor which is an incredibly broad remit. What do we mean by that? What does it actually mean preparing you to be a doctor? And whilst it is a very nice statement I don't know quite what it means. It's too broad for me. I think it is helpful therefore to say, the real issue is that you must be ready to do the F1 as that gives us a clear sense of what you are trying to achieve. The slight problem with that is if you focus solely on what's required for an F1 then you may not be developing some of the broader skills the person will need to go beyond F1. So you may not be developing the skills of self development. You may not be developing the skills of questioning and you will simply be developing a very, very specific set of skills to a very particular level. So I think what you have described is, if you like, one's too broad and one's too narrow and I don't know a better description. What I tend to use when I am talking to students is that what we are trying to do is prepare you for the first two to three years of your clinical career because during that time you start to make decision about which specialty within the profession you wish to follow and from that point on you will start to narrow.

The last part of SH6's quotation above suggests that the focus is really to ensure the graduating doctor is ready to commence their clinical training, which is similar to what was described by SH10 – a medical director.

SH10: it's fundamentally at the bottom of the pecking order at the beginning of your

91

postgraduate qualification and medical school is about giving you the skills and the knowledge to enter into a workplace and function as a very junior doctor.

When discussing the SA in Surgery and its value, a SA placement supervisor also commented on the FY1 job and how it was not specialty orientated.

ES-S4: The feedback I get from the students, my prejudice is that the problem with it is, in surgery in particular FY1 jobs aren't very interesting. In the first year that I was an ES, several of my students seem quite unsatisfied with their surgical attachments and I got the impression that their GP and medical attachments being more rewarding. In a nutshell I came to the conclusion that basing it on just what an FY1 was doing is maybe a bit of a lack of ambition in surgery. The FY1s in surgery, apart from when their firm is on call, I think a lot of the work as an FY1 in surgery now is very much routine and doesn't feel like being a doctor.

ES-S4 covers both themes above of how the FY1 job has changed with little specialty experience and educational value for learning and also how it is now the focus of training.

6.4.2.3 Restructure of Postgraduate Training

SH5 discussed the effect of the restructure of postgraduate training and the nationalisation of requirement whereby students would not need to stay locally for their F1 post. The dislocation of the F1 post from the medical school has resulted in the medical schools having less involvement with F1 training.

SH5: In the days when everybody stayed within their local catchment area and it was easier to fix it [pre-work shadowing] up with the place they were going to. Increasingly as half the year have gone somewhere else it has become increasingly difficult to manage which I think was the trigger to move to this NHS run system because the thing was falling apart

This theme on the change in FY1 role has highlighted the impact this has had on. FY1 doctors are perceived to be at the staring point of their training; with less responsibility nowadays. This in itself may be the result of the move to a more

consultant led service with the consultant being the decision maker and junior doctors having less responsibility (Academy of Medical Royal Colleges, 2012). ES-P2 did comment on this as well and said 'decision making has moved up'.

6.4.3. Uncertainty of Preparation

During the interviews some stakeholders had differing views on what 'preparedness' actually meant and uncertainty around this term and concept. This was discussed in detail in the literature review in Chapter 1. There was also the view that expecting an individual to be fully prepared was not feasible and the graduating doctor should only be prepared to commence what is a training role.

6.4.3.1. Prepared to Start Learning the Job

SS: Tomorrow's Doctors 2009 the statement says the students should be well prepared for the responsibility of the pre-registration house officer year when they start work as an FY1; what do you think of that statement?

SH5: Well on one level its motherhood and apple pie, of course, is the immediate response but I think a more nuanced response is why? And I think that because you wouldn't expect in any other industry people coming straight into the company or whatever to pick up the job immediately, in fact it might take some weeks, months even for them to become useful members, so I think it's sometimes slightly odd…[to] expect people to hit the ground running. Of course I know why they have to because that's the job and the care of the patients sort of demands it but that's really a reflection on the support systems that aren't there to make a better transition, so I think the answer is yes up to a point.

SH7 and SH2 made similar points.

SH7: Well it is preparedness, we preparing them to make good use of the opportunity, that's the way I look at it. You don't expect them to do it on day one. The chaps that have arrived yesterday are very different in their capabilities to the people that left before, so they have learnt an enormous amount in that year but it's also pretty unique job in that the consequences of somebody not being able to operate safely in the workplace as an FY1 are very different to the new law graduate not being able to do a right argument for a case and that sort of exemplifies where

we have a long way to go in how we do train and supervise because in other analogous professions there's just not even the start of an assumption that the new graduate will take important decisions without them being checked or double-checked and that applies to both intellectual disciplines and practical ones like engineering.

SH2: *...it's just silly to expect that they're suddenly going to be able to do it having only considered it at arm's length previously.*

This theme is related to differing expectations of FY1 doctors above and how this is considered a training role rather than a service role and the quotations in section 6.4.1.2 where SH4 described individuals in the trust not knowing the purpose of FY1s.

6.4.3.2. Specificity of Preparedness

This sub-theme concerns how preparedness could be considered as being specific to a particular workplace in which case an individual could only be prepared or feel prepared through and following their experiences in that workplace and the activity that will occur at that workplace. Additionally this theme also describes how preparedness is specific to an individual; in other words it is personally linked and relates to an individual's own perceptions.
SH6 describes this when discussing Illing *et al's* (2008) GMC commissioned study on preparation and the exchange with the interviewer.

SH6: *One of the things that study taught me… was that to an extent a lack of preparedness for something is inevitable consequence of preparing for anything, because until you actually do it you don't know whether you are actually prepared for it. So that's the first thing. If you ask people if they are prepared for it, well in many ways the natural response would be to say, "Well no, because I don't even know, because I haven't tried it yet."*
The second thing I learnt from that study is that if you ask people clearly what you are getting is a perception. If you are asking them about their own preparedness, a self perception. And that's influenced about a whole lot of things. It might be influenced by what stage you are at in your learning; it might be influenced by your

past experience of learning. It might be influenced by other past experiences. So you might have tried to do a job in some other setting and struggled with it, so you start to feel, "Oh, can I prepare myself for these things?" And then there is some quite deep seated personality things like natural levels of self confidence. If you are not naturally self confident you'll tend to say, "No I'm not prepared for it." If you are naturally more self confident you might be willing to say, "Yeah, I'm prepared for it." So, I'm not sure that asking the question of individuals, "Are you prepared for something?" you haven't actually yet done is a very sensible question.

A medical student (MS28) in one of final focus group for medical students responded to the following questions:

SS: Will you be prepared to be an FY1 by the time of staring the job?
MS28: I don't feel prepared to be an F1 right now, cos there's certain things that I really, I don't think I'll ever be totally confident at…I think if I went on the ward, say if I had to work as an FY1 tomorrow, I think I'd be safe – and I suppose that's all you can really expect for when you start, isn't it? Yeah, I'm not competent in everything, and there'd be lots of things that I wouldn't know how to do, but I think I'd be safe on the ward.

Two FY1 doctors exchange also highlighted that preparation for the job was actually by doing the job when discussing a referral to a specialty when they started as an FY1:

F13: It wasn't necessarily about communicating itself…it was about getting the essential information and getting it effectively across, the problem isn't exchanging the information, sometimes you have to persuade the person and to persuade the person you need to pick out critical things in the history or results that have been done previously and highlight it to the person you're speaking to and to do that, it requires you to make some sort of clinical judgement to the importance of that information. At the start you waffle a lot…
F14:…an epic history…
F13:… basically you read the whole sheet to that person who's across the phone to you, whereas coming to it now you pick out the relevant information and tell them

and hopefully they'll buy it…

F14: I don't think it's anything that could be taught, I mean you're taught the basics, but it's the sort of thing that comes with practice.

These quotations are describing the same theme regarding the concept of preparedness being unclear. This was a theme that came out early in my analysis and resulted in my change of perspective. A stakeholder commented on how nebulous the term was:

SS: Tomorrow's Doctors 2009 the statement says the students should be well prepared for the responsibility of the pre-registration house officer year when they start work as an FY1; what do you think of that statement?

SH7: It's a typical open-ended, aspirational sort of policy statement that you have to write when you try to write all-encompassing policy documents for large groups of people and you might separate how you view its validity, if you like, into what it means educationally and what it means for the workplace and that perhaps brings you quite quickly to the difficulties that are existing in terms of how medical students are making the transition from year five to F1 because they're moving from one very particular environment and culture into a very, very different environment with a very different culture and the preparedness agenda is about, to me, is about how much they can understand what they are moving towards and be ready for it.

Despite the wording of this statement in Tomorrow's Doctors 2009, some stakeholders seem to had moved away from the specificity of the statement of being prepared for FY1 because of the constraints that forces on the educational outcomes, a direction the GMC has seems to have taken too with the most recent training surveys now asking about 'adequate experience' and not 'preparation'.

SH11: My worry about Tomorrow's Doctors is not that that statement isn't included and isn't true but it actually is too much of a focus. It often worries doctors. And actually, I think, what we are meant to be doing at medical school is preparing people for a lifetime of practice and part of that is clearly about patient safety and to make sure people are ready on day one for their immediate trust and that's right and proper but it's probably too overwhelmingly a focus in some medical curricula

because of the way it is worded in Tomorrow's Doctors.

SH4: So a long winded answer to your question but I think we are preparing them to be FY1s; we're preparing them to become independent learners; we're teaching them how to become resilient, to be self-determined; we're teaching them some of the fundamentals of how to take risk which is one of the distinguishing features I think of doctors from other healthcare professionals; we're teaching them how you function as an expert and what the behavioural characteristics of experts are, which is really important because they won't be experts but they need to know how a good violin player plays the violin – they may not be perfect but they need to understand how that person gets to become a good violin player or a good doctor or a good whatever.

SH10 described how the change in the undergraduate curriculum and increasing knowledge and skills to attain the preparedness has to be considered more broadly even when considering the FY1 position itself as this could be anywhere in the country.

SS: What do you think of that [Tomorrow's Doctor's 2009] statement?
SH10: Well I think it is a very easy statement initially to read but clearly behind it lies an whole mass of complexity in the sense that medical school lasts five years, when I qualified in the early 80s, it lasted five years but the knowledge underpinning medicine is much more advanced now then it was 30 years ago. I think having someone transition through with all the complexity of understanding the ethical and moral background to working as a doctor, the professionalism, not least of course the actual knowledge of medicine of becoming a diagnostician and then delivering the skills that involve delivering treatment. I think it is quite a challenge. And that's evident in the evolution of the medical school curriculums from the kind of curriculum I was in to the kind of curriculum that we see in all medical schools which is really quite different. So if you take that statement and say you have got to get them ready, you have to have them prepared - yes, you have to have them prepared to work potentially anywhere in the United Kingdom and that also means that although there is uniformity in the way the NHS works, actually is not one single organisation, it's a composite many, many, many slightly different coloured Lego

bricks. So that what we train them to do here has to be open enough that they can take that down to Plymouth or up to Aberdeen. So I think at that level it's a very easy statement to say, but actually it is not an easy statement to necessarily comply with.

This section has described how preparation is difficult to define with the interpretation being subjective when each of the participant groups were asked.

6.4.4 Situated Learning

Within education the learning and education delivery is guided by the learning outcomes and assessment aligned to the learning. Ideally the experiential learning should be aligned to the curriculum and the assessment based on what is learnt.

6.4.4.1 Non Alignment of Experiential Learning and Assessment

Within UKMS a theme that was identified from the interviews was non alignment of the experience and learning gained and available in the clinical environment and the subsequent assessment.

SH2 also had this experience from students who were doing the SA, in that their focus was on the exams and not on learning to be a FY1 doctor during the SA.

SH2: For the student we can talk all we want about being prepared for FY1 or entry into the rest of your career but when it boils down to it the student knows that none of that is going to happen unless he or she passes that final exam, so that's their focus and I think it is part of our job as educators in final years to lift their eyes above that bar and to get them to take the longer view, which as I say is the rest of your career actually not just FY1.

This is similar to the point also made by the medical student above under section 6.2.2.1. 'FY1 role' where the MS4 said that students have the 'management paper' and that is their focus.

SH5 also pointed out the difficulty in assessing all of the GMC outcome requirements, particularly professional behaviour. SH5 also described that a balance has to be achieved between meeting the more difficult to assess areas like professional behaviour and trying to provide clinical experience that is more

assessable.

SH5: I think assessing professional behaviour is difficult wherever you are. In my view, the only way you can do it is to take multiple biopsies over a prolonged period of time and that obviously works well for qualified people. It is much less easy for students for two reasons, one is they're not acting professionally in that sense, they don't have a professional role as such so what are you assessing? Anything that you assess is perhaps a proxy and you don't see enough of them necessarily.

SS: You could make the rotations longer

SH5: Yes you could make the rotations longer but all my life there has been this struggle about how long a rotation should be and the longer you make them the more you address the professional work related issues, the more people get to know each other, better the judgements but the more focused the experience because we're all becoming more specialised I think. So you have this dilemma of cutting it into short, small bits and rotating people round getting the experience of all the problems but giving up on the professionalism or you can go the other way and of course all you can do is some sort of intermediate.

SH7 – a deanery stakeholder - also commented on the non-alignment of assessment and learning but by the type of clinical exams like OSCEs not truly assessing the way of working in the clinical environment. As SH3 described above if the assessment does not align with the expected learning the students may not attend the wards.

SH7: Because in terms of the final exams or the written [exams] and so forth, they're still, they are clinical exams but they kind of, they're in the context of the OSCE of the isolated bit of experience and practice rather than the flow of a whole day of working, and that's the difference that I think probably creates difficulties for the students who are seen to struggle is that they may well have gained a particular set of skills that they can do one by one but integrating them into a useful daytime's work is what they find more challenging and they feel lack in confidence in how to behave.

SH6 has described how a non UKMS medical school has addressed this difficulty in

aligning the assessment with the experiential learning by setting the exams first before the SA and then focusing on the GMC outcomes that are difficult to assess in the SA.

SH6: So when they get to the student assistantship they will have done their final exam, completed all of the practical procedures and effectively be ready to go as a doctor. Now that's the position we were at when we graduated people in the past. So what we've now done is we've introduced a six week student assistantship and about half of our cohort leave the [the region]. Half have their FY1 posts [locally]. For all of those who are staying locally...they will be attached in the student assistantship to the team that they are working with as an FY1.
The purpose of the assistantship is to meet 19 very specific outcomes from TD09 that we are not sure that we can have covered in the curriculum and all of those 19 are from the doctor as a professional and not the doctor as a scientist or as a scholar because all those have been ticked off, every single one, so they're from the other two big outcome domains and the way that we are assessing students during their assistantship is by using those 19 areas such as working in teams, knowing how the NHS works, that sort of stuff.

This theme has covered the alignment of the learning outcomes with the activity the student is engaged in. If there is not alignment the student may not find benefit from being on the SA. This was also pointed out by ES-S4 in section 4.2.2.2 when discussing the value of learning on the surgery SA.

6.4.5 Supporting Network

A particular area of discussion with the participants concerned the change in the supporting network surrounding the medical students and F1 doctors, including peer support and also team organisational structure
At UKMS the final year medical student, doing a SA, is expected to become a member of the ward team and take on some of the responsibility of the F1 doctor. The F1, when they commence this position after graduation, becomes the most junior doctor working in their team in the hospital.

6.4.5.1 Integration into the Team

In response to my question that some students - during the focus group discussions - had said it was difficult to fit into the ward team as a SA, SH2 commented on this and how integrating into the team was 'not a feature these days of being a student' but also implying that when the student was able to integrate and become a member of the team the student felt valued.

SS: Looking at the UKMS course, perhaps in the earlier years they are as you said very disease focused, they have their case of the week or they come to the wards and they ask to see a diabetes case this week or ask to see their gastro case this week…the final year…they are encouraged to go beyond that and more socialise into that environment. Are their difficulties with that?

SH2: There are, and I think some of those difficulties are the difficulties of integrating within a team and like the work I am doing at the minute looking at [that] …one of the things that has come out of that work time and again is that it's the first time I've felt part of a team, it's the first time that I have felt that I counted, that if I didn't show up I was going to be missed because I had a job to do and I was answerable for something. That same thing happens in FY1 as well and it's that accountability and that being needed that is something that is not a feature these days of being a student and perhaps it's a bit loss there for the students.

This overlaps with the theme discussed in section 9.4.2.1 above covering the theme: *change in expectation of duties of F1*. SH9 commented there that the F1 role had changed and the F1 was 'supernumerary' nowadays and SH2 has also commented here that there is a change in the role of the F1 with 'accountability' having been lost at both F1 and medical student level.

MS17 commented about not becoming a team member:

MS17: The reason you don't become a team member is because the people on the team don't know where you should be included [as a SA] and what jobs you should be given. An FY1 steps on a new ward on his new rotation as a team member on the first day and is expected to do jobs and we're not and that's the reason you don't

become a team member.

Another medical student said:

MS30: *We are told to get involved which I don't think is realistic if the people on the wards don't know what our role is, and don't know to get us to do stuff.*

When SH4, a stakeholder with a leadership role in undergraduate education in a non UKMS medical school, discussed how to make SA placements successful a particular focus was on making the incumbent F1 aware of the medical student doing the SA to try and integrate them into the team.

SH4: *One of the ways that we have prepared everyone is that the F1s have been prepared. We've worked hard with the F1s to make sure that they fully understand the relationship and the roles because the F1s are going to have to make a judgement as well on these students but they have to work with them very symbiotically.*

This fits with Lave and Wenger's theory of Communities of Practice. SH6 recognised the importance of integrating the student into the team but commented on the difficulty for students to have real responsibility. This was in response to a question which included medical student comments, from their focus groups, about saying that they did not have responsibility during the SA.

SH6: *I think, this question of being responsible is a really important one. Because actually, unless you are responsible for a person, you are not responsible for them. That, I believe, does in some way influence how you are. And it's what we went right back to when we were talking earlier: how can you prepare yourself for something until you actually do it because you are always at some slight distance to it....It is very difficult for a student to get very far into that because they will not be responsible for the care of that patient and in essence if they make a mistake there is no problem because somebody else is going to deal with that whilst they are a student. Six months down the track [when a F1] you can't be absolutely confident if they get called at 2am to write up a prescription, if they make a mistake then somebody will pick it up. It is different. Until you do it, it's different.*

A surgical SA supervisor commented on successful integration of the student into the

team:
SS: Ok. What duties do you give them?

ES-S1: Well initially, they're told first of all, they go to handover in the morning, this is their initial plan and then they're allocated the morning to work with one of the FY1 doctors - the day - and they, because of how FY1 doctors work, then some days they may go on the ward round, some days they may go to pre-assessment which means seeing all the patients who do come in for that day, clerking them in, consenting them, and they share the duties. We let the FY1s sort out how they work really, and initially, it's usual that it starts out with them watching for a day or two and seeing what goes on and then bit by bit they gain skills and what we try to do is try to get them to actually help out the FY1s. I feel as the year goes on they get into that quicker. When they first come back from their elective and start, it really takes them a while to get into the swing of actually working because they have to; they're alarmed they have to be there at 8 o'clock in the morning and once they get over that they realise they have to work they are quite happy really I think. The more they do, the more they enjoy it.

This fits in with legitimate peripheral participation but also highlights that as the students do not have any real responsibility, it may be that despite efforts being made from both the student and the ward team, this is a barrier to them integrating into the team.

6.4.5.2. Change in firm working

A theme that was expressed was regarding the change in the structure and functioning of the hospital 'firm'. The firm in a NHS hospital consists of (and is led by) a consultant; a doctor that holds a certificate of completion of training (CCT) in a recognised specialty. Junior doctors in the team consist of doctors of varying grade. Ordinarily a registrar will be a doctor training in a specific specialty (the same as the consultant) working towards their CCT. More junior to them will be Core Trainees participating in the broader specialty (for example General Surgery, General Medicine). Junior to these would be the F1 and F2 doctors.

In theme 4.4.3.1. *Prepared to Start Learning the Job* above, when asked about the

Tomorrow's Doctors 2009 statement about students being well prepared for the responsibility of the F1, SH5 said 'the support systems that aren't there to make a better transition'. This could refer to the immediate surrounding support network such as the firm as well as the induction of new F1 doctors. SH9 – a medical director- commented more in depth regarding workplace changes and ways of working that could have affected preparation:

SS: Are graduates now less prepared? Or, why do you see as this greater focus on preparation?

SH9: I do think that one of significant differences now compared to when I trained for example is the through put of patients and the much shorter length of stay. So the, I mean, there are obviously differences in the working patterns as well, but you know I may not think that today's world is perfect, but I am not an advocate of saying everything was perfect 20, 30 years ago either. But you have to get things right, there is not the time to miss something out, because the patients have gone again so quickly or moved on again so quickly. So I do think that a contributory factor is the through put of patients, and the other major thing is junior doctors are no longer part of a firm and they are; I know that sometimes that they don't even feel that they are part of a team even though we might see them as being part of a team, because the way of working, the pattern of working is so different, the inconsistent - for them to swap something because of a, whether it's a social commitment or whether it's about a study day or an exam, they often don't think they are part of a team and consultants now; you will have a consultant of the week for a ward and you know it might be that you're only consultant of the week one every 10 weeks so for a junior doctor who is with you for three to four months, they are not going to get a chance to work in that way, so I think there is through put and lack of being in a firm.

There are several points here about changes in ways of working. Firstly, the greater number of patients to be seen and that 'you have to get things right' and 'there is not the time to miss something out.' In section 6.4.2.1 the theme *change in expectation of duties of F1* was discussed and included how the NHS does not expect new F1s 'to hit the ground running'. However to meet the workplace demand from this greater 'through put' to 'get things right' may explain why the F1s may be considered 'supernumerary' now as they are unable to function in that role straight

away. The second point is that junior doctors may not be working as part of a firm and team; so there is difficulty to establish a supportive network. This is linked to the third point regarding changes in patterns of working to a shift pattern whereby the traditional firm will not be able to work together as previously. The on calls are not with the same team so contact with the traditional firm is not as extensive as it was in the past. SH10 explained this below when discussing the same point: the increased workload demand with reduction of hours due to European Working Time Directive has caused a movement to shift pattern working and the loss of the firm structure and supporting network.

SH10: I think the issue is, I mean we could spend hours talking about the firm structure and the death of the firm structure and what that's done to patient care and lots of other elements, I think there is an element of that. Of course it wasn't the firm structure that's a problem, it's the shift work, it's not the loss of firm structure it's the shift work. The reason why we didn't have a problem, perhaps you call it in the good old days not bad old days was because as a PRHO you were there all the time, and the only time you went home was, I mean when I was a PRHO you did a 1 in 2 or a 1 in 3 and when you weren't off duty you were in the hospital and you lived in and if you had medical students on attachment, because of only three PRHOs covering maybe three wards you were there. And I think that's the problem, you can't go back to those days because we can't, because of working time directive, humane working practices, you know, prevention of burn-out and all these other elements.

A surgical SA supervisor also commented on the lack of continuity in the team structure on a day to day basis.
SS: And the main person they have contact with is the F1?

ES-S1: No they have a registrar who runs the firm. In the morning they all meet and then they discuss what they are going to do. On our firms there are three registrars but they aren't there everyday you see. This is the conundrum of clinical medicine in 2011 isn't it? The team doesn't work as individuals, they are a team. So there are at least one of our registrars every morning and at least one of the SHOs. There may be three registrars, there may be three SHOs or two SHOs, we have two SHOs, and there may be four FY1s. So nine people potentially could be there. Occasionally

there's a consultant there. It depends who's on call. The consultant, they sort out how they are going to work because it depends on who is there. And some days, although there are two teams who meet at the handover, there's cross cover because at odd times all of the FY1s are not around. They are either on nights, holidays, they may be at interviews. They may be on compulsory study days. It's not quite an exact feast. That's why they meet in the morning to discuss how we are going to work. If it's the same people there they often stay with the same person who's there. But that's not a common factor in life. I think the two things missing from the training in medicine at the moment are continuity, because you get lots of point things really and also peer colleagues whoever they may be. You are working with the same doctors more than once is really important and they're the two things you have got to capture really and it is difficult.

Medical students also commented on this changing of the team frequently making it difficult to 'shadow' the FY1.

The effect of there not being a supportive network in the hospital environment is contrasted with the community general practice environment where some students had said were very valuable in helping them prepare for professional practice. SH6 felt the positive response to the general practice blocks was more to do with the established supporting network but did not feel the general practice environment was ideal to prepare for F1.

SH6: Education in general practice is very well established but has been professionalised for some years. So many general practitioners who do postgraduate training will all have been expected to have quite significant levels of training for the role. So I think educational thinking in general practice is quite strong. Not perfect by any means but quite strong. The second thing is the nature of the relationship tends to be one to one, so many students, I think, value it because they get a one to one relationship which feels nice. They feel well supervised, and so they may be, the reason they may be learning more is because they feel well supervised. Many medical schools, working with their general practitioner colleagues have set up quite formal approaches to education in their general practice blocks, which means students get to learn a lot. And so again, I think, it's,

that's why students think they are learning a lot. So I think there are lots of positive things about it. I have one significant worry. My significant worry is that by and large the nature of the work in general practice is quite different from the nature of the work of an F1 or F2 in a hospital. There is very limited emergency care in general practice.... I think it is great place to learn about medicine and long term conditions and communicating with members of the public. Fantastic, But preparation for an F1, I'm less convinced.

When this above opinion from SH6 was put to SH11 a similar response and contrast of the hospital and general practice environment was made. SH11 also discussed the communities of practice theory.

SH11: Yes, I have to research myself on learning environment in general practice and on using communities of practice framework and I think it is a real shame to that extent how hospitals have changed because you do learn best when you value when you feel part of the team, and in many ways hospitals should be the better learning environment because it is more immediately relevant and you should see a trajectory better especially for the first couple of years after graduation but I have heard as well because you don't feel part of the team you are a bit of a spare part and that is a big issue for hospitals and the NHS.

SH8 explained that training is structured in general practice and trainees are supernumerary and the same educational process extends to medical students with individual needs being addressed.

SH8: I am not surprised about students would find it [General Practice] valuable. I think there are certain aspects; some of them are structural as you say. Some of them are really about the opportunities that they get there, so you are right that I think involvement in medical education came later to GPs. They took it very seriously and then it was well funded so that at postgraduate level GP trainees are truly supernumerary whereas they are not in hospital, so that postgraduate training was well structured as you say, the trainers were trained and the very clear educational process of sitting down with the trainees and that generalises to the students where there is very careful attention to their individual needs and they get a

lot of individual attention and feedback and one to one.

The themes in this section have dealt with how the integration into the team is very important for the student to find a role but this is difficult with changing work patterns.

6.4.6 Scrutiny and Governance

This theme presents the area around change in practice with a movement towards a greater governance structure and the external scrutiny and transparency that involves; and how this has impacted training by creating barriers to engaging in and gaining clinical experience.

6.4.6.1. Responsibility shift

This theme has already had some discussion (Section 4.4.2.1 *Change in Expectation of Duties of FY1*) in relation to how the role of the FY1 has changed with less expectation in duties and responsibility and movement of this to more senior doctors. SH6 also discussed responsibility in section 4.4.5.1. This was regarding medical students, and how the limited responsibility that they can actually take on affects how they behave, with them remaining at 'some slight distance' from the team and therefore not being able to integrate into the team.

SH2 also discussed this further when responding to a question about F1 becoming the focus of training (a theme covered above in section 4.4.2.2. *F1 as entry point of training*)**:**

SH2: *Perhaps the reason people tend to emphasise excessively I think FY1s as if it was a beginning, middle and an end is that that's going to be the first real, if you like, encounter with the workplace where you as an individual carry some responsibility, whereas in the prior apprenticeship models of medical training that I mentioned earlier, people carried some responsibility all along. We have taken that away from students; we being whoever is in charge, be it hospitals, be it the GMC, so that they have been to some extent responsibility free and I think what people are emphasising and seeing as preparedness for FY1, is preparedness for taking on responsibility.*

Again here the point made is that responsibility has shifted from medical students to F1s, with their previous responsibilities shifting to more senior doctors.

MS2 commented about the inability to take on responsibility:

MS2: They say you are given five patients [as a SA] and are responsible for their care…but you can't do anything…you can't make a decision, you are a student…you don't really have any responsibility."

6.4.6.2 Patient safety

The subtheme in the section above (section 4.4.6.1) covered how students have less responsibility. Several of the stakeholders used the example, and their recollection like SH7, of current medical students being given less responsibility than they were at a similar stage, commenting that locum paid house officer SH7 attributes this to patient safety, commenting how this has removed students from direct contact with patients. Vivekananda-Schmidt *et al* (2011) identified this as a theme as well when they sent questionnaires to deans of medical schools and final year lead about what students should do in the SA and which FY1 activities they should engage in.

SH7: If I step back 30 years, I spent most of my year 5 as medical student working as a locum F1 in reality in various placements. I was never called that but that was what I was doing. That year 5 was intensely practical following round whoever, whatever junior doctor was around on the ward, practising being an FY1, a PRHO, and perhaps the increasing removal of students from direct contact and intervention in patients with safety in mind has created this distance between students' knowledge base still being perfectly adequate and the roots are there and the new learning methods are there so that's fine, but their immersion into the working environment has been diminished.

Many of the supervisors and stakeholders (who were all doctors) commented on opportunities for student locums in the past, which were no longer done because of governance reasons. SH10 commented that on this:

SH10: We did locums. So from the third year of medical school, provided you, one had the confidence and two the opportunity, and there were plenty of opportunities,

you could do night time locums, you could do weekend locums as a medical student, you got paid a pittance for it, but you basically functioned in an apprenticeship where you asked the PRHO. And that way you learnt real medicine and also you did the real job. Albeit there were certain things you just couldn't do but within the scope you could do most other things and therefore I think 25 years ago people had a better understanding of what it was to be a PRHO before they landed on that first day. I think we've, through governance and safety reasons, may be limited that a bit.

SH2 similarly commented about the regulatory environment in the hospital that creates barriers to taking on responsibility:

SH2: I think it is the regulatory environment rather than the patients that are risk averse in that respect.   The patients aren't once you tell them and know this from having done the amount of hands on work we did at [UKMS affiliated non-acute hospital] for example. The patients are not risk averse in this respect at all, once you tell them.

SS: So you think the regulatory...

SH2: The...both the GMC and the hospitals in terms of "oh my goodness, what if they do harm?" but in fact if you as an organisation and a training body prepare properly I think you can operate within that because even when you're registered you're still a doctor in training. You suddenly don't morph into a trained doctor on the night of your graduation, far from it.

A SA physician supervisor had a similar opinion:

SS: what should they do during the SA?

ES-P1: They should break off and clerk some patients and the more senior ones are actually acting in the capacity of an FY1, presenting their patients, getting feedback on their performance and I still think they should be doing more of the nitty gritty bits of work although I think various rules and regulations prevent them from getting their hands dirty and doing prescribing and doing practical procedures above a certain level that undergraduates are expected to do.

However it looks as though these barriers can be overcome if risks clearly set out as described by SH4, a non-UKMS undergraduate programme lead when discussing their SA at their university:

SS: How do you set the boundaries for these student assistantships, because they're still students? Who sets those boundaries?

SH4: In relation to...?

SS: In what they can and can't do.

SH4: Oh it's very clear they can't do a number of things, I mean they can't take total responsibility for a patient, clearly they can't because they're students, it has to be under supervision and what we've done is we've categorised all the clinical practical procedures in terms of risk. But not risk to patients, risk to the organisation so a slightly different way of categorising. So we know some things that would potentially have both risk for patients and actually risk for the organisation in terms of if something went wrong it would be catastrophic so at a simple level, if someone got a bruise after a venepuncture, that isn't an issue then you can supervise someone doing a venepuncture without actually watching the venepuncture being conducted. We know that they've all been signed off but if you're prescribing intravenous drugs whatever and you make an error, that can be catastrophic and you can't as a student put up a blood transfusion or actually physically do things with blood products and we've put that on the side line because that's too dangerous. But they do administer drugs and they can under supervision. They've got to be watched and they're doing that anyway; if they're students for example doing anaesthesia they're giving anaesthetics, IVs and so on, again under very close supervision. So the boundaries have been set in relation to what they can and can't do on the basis of common law, what they're allowed not to do by the GMC and by the Trusts and also by risk stratification which we have agreed with the Trusts; the Trusts have said we don't want them doing that or they can do this, they can do that so there's been a huge amount of discussion to set those boundaries and of course if anyone has any uncertainty you ask.

When asked about why there was a greater risk adverse approach when students have always been expected to act up SH5 explained:

SH5: I suppose what has changed in the last ten years or so is the requirement for people to be fit for purpose; that's a phrase I dislike but I can't think of a better one. In other words people are much more aware of the errors that people may make; not so sure that the errors have gone up but now people are more conscious of them when they occur and I am pretty convinced that things have become much more complex than they were; people stay in hospital for a much shorter periods of time, there's much more chance of making an error if people are there for a short period, supervision I think is better than it was although not necessarily a step change better but I think probably better. But drugs are much more extensive, the interactions are much greater, the patient population is older, the chances of things going wrong because of that are greater, the patient expectations of course have risen along with everything else, so I think it is quite different in many respects.

SH9 and SH10, two medical director were also asked how students could take on more responsibility:

SH9: I think we could improve our clarity about what we expect students to do, both with the students but also with the NHS partner. And we can also ensure that we make use of the clinical simulation facilities, we need to ensure that more of our doctors who are in training but who are way beyond their first two or three years are skilled in supervising those who are qualified but also students and that everybody understands boundaries.
I do think that the pendulum swung right over and nobody was allowed to anything, and prior to that anybody could have a go at anything and there has got to be some middle ground, some clarity around the boundaries, clarity around consent and clarity around if you are trying to stick a cannula in a patient how many goes you have because it ain't a plastic arm.
SH10: ...in my past as a medical director, because of fears around governance and litigation and quality standards and protection of the public and patient safety have introduced such rigorous barriers that actually it is very difficult for a medical student to do everything that an F1 does...so I think that what we may need to do is stand back a little bit and just think, 'actually if we want these people to be ready for FY1 how do we actually really help them to function. Albeit there are some legal things they actually cannot do but within the remit that we have got within this monitored environment, closely governed environment, how can we

give them additional capacity.

I think, the point I am trying to get at here is I think we have created along side many other medical schools are artificial rules that have almost put barriers up that actually partially prevent the fifth year medical student functioning in a way we would expect an apprentice to work.

And I think there is an element for me of how do we create a framework where we allow fifth year students, appropriately supervised to do a bit more than we do currently. I understand, don't get me; I understand the real difficulties that exist there.

6.5 Summary

In this chapter I have outlined the main themes that have emerged from the research. I approached the analysis trying to view it from a socio-cultural perspective and look into changes in the social structure around the student that have influenced preparedness. The six main themes were the lack of clarity of the concept of preparedness itself; how organizations need to collaborate to make sure outcomes of education are similar; the changed role and expectations of the FY1 doctor; the importance of aligning the clinical experience with the assessment and goals of the student; the change in the supporting network in the hospital with less of a consistent team structure; the barriers that the governance structure in the hospital creates for students gaining experience. These are quite different themes from previous research which has often been more learner focused and looked at what skills the student has gained.

In the next chapter I discuss these main themes and aim to contextualize them in Bourdieu's theory of practice.

Chapter 7
Discussion

7.1 Introduction

In this final chapter I refer back to my aims are to discuss the main themes from the qualitative research and then attempt to contextualize my findings in Bourdieu's theory of practice. I then will provide a list of conclusions and recommendations for practice and then finally move onto reflection of the project and discuss its strengths and weaknesses.

7.2 Discussion of Qualitative Analysis

The first of the main themes I derived that I will discuss is 'collaboration of organizations'. This concerned how there is a joint responsibility between the NHS and the medical school to prepare students but at times there was uncertainty where this responsibility lay and there needed to be clear communication between the medical school and the NHS partner what outcomes were expected. It seems surprising that this was a theme from the qualitative aspect of this work as it has not been an area that has come up in the literature. However it was a theme that came up in several interviews with stakeholders. It could be that any possible issues were specific to UKMS as some stakeholders felt that this could be a communication issue from the medical school to the NHS partner. It could be debated what relevance this has to preparedness. But in this project one of my aims was to identify factors in the social structure around the student that can impact preparedness and this would seem an important factor that can impact preparedness. As the fifth year students' learning outcomes become increasingly focused on becoming ready for the workplace this experience could only be gained in the workplace setting. Therefore the expected aims of the SA need to be clear. I have provided some conjecture in the results chapter that the expansion of medical students with students possibly working in NHS settings and institutions that have not accommodated students may have resulted in lack of familiarity with the undergraduate course structure and outcomes. Additionally the relatively rapid undergraduate reform with only six years between the last two versions of *Tomorrow's Doctors* may have meant that awareness of educational changes had not occurred in these sites. Some of the medical school representative stakeholders commented that perhaps there were other priorities in the NHS that had superseded education. Although the literature on preparedness does not highlight this, a parallel could be seen with the House of Commons Health Committee comment on the impact of NHS reform in it's inquiry into MMC (2008). The inquiry

commented that reorganisation in the NHS in 2006 may have created a "distraction" when MMC was being implemented across the UK. Of course this comment was from the perspective of a national review.

The conclusion and recommendation from this would be that there is increasing change in both the NHS and medical education. In order to implement medical education change (such as the SA) the leaders in medical education (the medical school) need to be collaborate and communicate clearly what the outcomes are. In the future this may become even more important as full registration may move to the point of graduation and competences may need to be achieved at an earlier stage.

The second theme I will discuss is the 'FY1 role' with the subthemes of 'change in expectation of duties of FY1', 'FY1 as entry point of training' and the 'restructure of postgraduate training.' There was an opinion that the FY1 role had changed and expectations had lessened. This was predominantly from participants – stakeholders and supervisors - who reported greater expectations and duties when they had been in their posts as junior house officers and PRHOs. They also felt that some of the outcomes expected in the FP would have been achieved earlier when they were in a similar position. This was also expressed by some students who questioned the value of taking on some of the responsibilities of the FY1 doctor as they found them educationally not productive, or not productive to reach their set outcome of passing their final examination. This is surprising as incumbent FY1 doctors felt differently but they only arrived at this viewpoint; and acknowledged the complexity of the FY1 role when they were doing it and had responsibility. This was apparent in the differing discussion at the initial FY1 focus groups and the last focus group with FY1 doctors when they had been in post for several months. Again this is not a theme that is present in the literature but it is an important point as the educational value on taking on FY1 duties only seems apparent in retrospect for trainees. There were participants who viewed the apparent less responsibility that FY1 doctors had, in comparison to the past, as a positive. They felt that FY1 should be considered as the start of training and real responsibility should be taken earlier. This is an important point and is at odds with adopting the Shape of Training Review proposal of moving registration earlier where increased responsibility may be required earlier.

The third main theme I will discuss is the 'uncertainty of preparation' concept. One of my aims in this project was to explore how the concept of preparedness was understood. I found that there were differing opinions of what preparedness was and it was an uncertain concept

and difficult to define. This was dependent on the individual asked and when asked in relation to the job they are to do; their own self-perception and self-confidence and the expectations of those around them. Although 'preparedness' had received much attention in medical education there was limited discourse on what it actually meant. Monrouxe *et al* (2014) and Kilminster *et al* (2011) have focused on the difficulty of understanding and defining preparedness and gave greater focus to this than had been evident earlier in the literature. The GMC (General Medical Council, 2014) has also changed the tone on preparedness and commented that a 'wide-view' should be taken including 'professionalism, employability, competence, readiness, fitness for purpose, fitness to practice' and the 'boundary between being prepared and not' is difficult to define. GMC surveys now ask about 'adequate experience' rather than 'preparedness'.

The fourth main theme I will discuss is 'situated learning' and 'non alignment of experiential learning and assessment.' This may be particular to UKMS, as the SAs occurred prior to the finals examination. Many students did not feel that the learning from the SA would be valuable to passing finals as the learning outcomes differed. The recommendation from this finding for UKMS would be that the SA should be considered after the final examination. There was a move to this as *Tomorrow's Doctors 2009* was fully implemented. Although there has been no national model of the SA, at differing medical schools have SAs of different lengths the medical school reports to the GMC (General Medical Council, 2014a) do suggest that the majority of medical schools have adopted the practise of placing the SA after the final examination.

The fifth main theme discussed is the importance of the 'supporting network'. The interactions with individuals in the workplace and the presence of a supporting network had a significant impact of how the medical student was able to fit into the team and take on responsibilities during the SA. Dornan *et al* (2001) has commented that students need "supported participation" when on placements, in other words students had to become the community of practice. A recurrent theme was how difficult this was becoming for students and without this participation they found the SA less valuable. One of the main reasons seems to be the lack of a consistent team, i.e. 'a firm' in the workplace. The loss of the firm structure has been explored in the literature in the past with this being partly due to the European Working Time Directive (Temple, 2010). More recent discussion has suggested that there should be a return to the 'firm' structure as was suggested by the Secretary of State for Health (Rimmer, 2016). This then limits time on the ward for junior doctors and to be

116

able to teach medical students. Additionally national recruitment has resulted in less new graduates staying local to their medical school so the incumbent FY1 may not be familiar with the structure of the course of the medical student. Certainly the theme seems to be that it is more difficult for the student to socialise into the workplace and there is not a consistent team. Students in focus groups mentioned that it took several weeks to build relationships with the junior doctors and ward staff and only then could they take on and be given increased responsibility they wished in the SA. The recommendation from this would be that longer placements would be required to socialise into the workplace and this fits in with The Shape of Training Review (Greenaway, 2013) which has already suggested longer clerkships for medical students.

The last main theme I will discuss is the impact of "scrutiny and governance." Students reported difficulty in being given responsibility and often supervisors were uncertain what responsibility could be given. There seemed to have been a recurring theme of responsibilities that would have been taken by more junior doctors now being taken by more senior doctors. This was particularly expressed regarding management decisions and planning care. There were concerns about giving students responsibility as there may be associated clinical risk. I have already discussed in Chapter 1 how there is increased focus on accountability and patient safety. This may be limiting student accessing their learning opportunities. Another factor in the changing workplace setting may be the expectation, following the NHS Plan 2000, that care should be 'consultant delivered' and not just 'consultant-led'. The expectation that more senior doctors are expected to deliver the care may limit training opportunities of junior doctors and as a consequence medial students. This issue has been commented on in the literature by Vivekananda-Schmidt *et al* (2011) who sent questionnaires to medical schools and found that there was a barrier to taking on resposnbility and that "conservatism and risk aversion are preventing doctors from being given responsibility before graduation." Monrouxe *et al* (2014) also reported that opportunities to take responsibility for patient care were not there in SAs for some students and they commented on "being sheltered".

7.3 Using Bourdieu as a Lens to Contextualise the Themes

In the discussion of the qualitative analysis (section 7.2) above I have attempted to address my aims of trying to understand the concept of preparedness and identifying specific factors that influence preparedness beyond the previously researched skills and competences that students have to attain. I have presented that preparedness is difficult to define and identified several factors such as how the university and NHS sites collaborate, the impact of changing working patterns, the impact of increased scrutiny and accountability. My third aim was an attempt to contextualize my findings in Bourdieu's social theory and integrate the social structure factors together with individual learner factors to try to explain preparedness. Bourdieu's concepts of field, habitus and capital (1994) can be used as a lens to view preparedness. The six themes presented were collaboration of organisations; FY1 role; uncertainty of preparation; situated learning; supporting network; scrutiny and governance. The field is the social arena in which the various agents – students, doctors, university representatives - practise. This project suggests that there seems to be two differing fields in the larger macro-field of medical education. These are the clinical environment and the university setting. The theme that emerged was the importance of collaboration of organisations from each of these fields. It was felt that there may, at times, be tension between these two fields as it was not made clear what the individual organisations role was in delivering medical education. This results in the 'rules' in each of these fields being different for any agent that is in both fields, in other words, the 'game' differs for the student. Agents – in this case the students – aim is to adopt a habitus. The doctor habitus is the ultimate objective of the medical student. This has been researched by Sinclair (1997). The dispositions that the student attains are through their experience in the field. The student in the field is trying to accumulate capital. For them the most important seems to be symbolic capital – pass the exam and qualify and achieve the status of 'doctor'. This was their primary objective. Many students did not see the value of acting up as a SA as they did not feel the experience gained would help them pass the exam. These skills like knowledge, practical skills, ward work are cultural capital are important to learn the job of an FY1 doctor but at the time the students focus was mainly on exams and that experience on the ward was not seen as 'legitimate capital' to pass exams. Hence less desire to pursue it. Furthermore students felt the 'responsibility' they were given was not real as barriers created by governance structures prevented them from taking on actual care of the patient. So their position as assistants was 'symbolic capital' which was not legitimate in the clinical field.

The FY1 role has changed with the perception of less responsibility. Students are asked to be assistants to an FY1. Situated learning theories would indicate that this would allow peripheral participation. However the themes when looked through a Bourdieusian lens may explain why some students did not find this of value. Social capital is important for an agent to establish themselves in the field. Social capital in itself is a means to gain further types of capital like cultural capital, in other words, 'who you know' is helpful in learning and getting experience on the ward. However with the change in team working and different doctors on the ward frequently the value of social capital lessens and new relationships need to be cultivated. Additionally there was the perception that the FY1 job was 'routine' and not educationally valuable for some students to meet their learning objectives to pass exams. So trying to gain this social capital may not ultimately be worthwhile as it would not lead to accumulation of further cultural capital.

Examining these themes through Bourdieu's social theory allows the social phenomena to be explored in greater depth and allows one to consider the social factors in addition to the quantifiable skills that have been the focus of previous research.

7.4 Conclusions and Recommendations

I list below the main conclusions of this project and recommendations for practice.

1. Despite the literature on preparedness of medical students for professional practice, 'preparedness' per se is a difficult concept to define and it's meaning subjective to the individual. The recommendation as per current GMC stance as well, when considering reports and literature on preparedness is that it should not be considered an easily measurable phenomenon but the context of such information considered in the interpretation.

2. In implementation of new medical education initiatives, such as the SA, focus on collaboration between different stakeholders is important and a lack of clarity in this could affect opportunities for learners. As there is increasing reform within the NHS and medical education individual stakeholders may not be abreast of current developments. Although SAs are felt to be valuable they should be considered to be done after finals examinations.

3. FY1 doctors may have less responsibility and expectations than previous generations of doctors. This is coupled with a more consultant delivered service. The increasing accountability and scrutiny surrounding medical performance may have the impact of

difficulty in giving junior doctors and medical students responsibility. This would require greater specification and clarity in placements regarding what responsibilities medical students can be given.

4. With changing patterns of working, including shift working, the "firm" structure is not as robust as previously. Therefore the community of practice has been lost. This makes it difficult for medical students to fit into a team as the members are continually changing. In arranging SAs and placements consideration may need to be given to focusing on setting up clearer supervisory relationships and also possibly allowing longer placements so medical students can socialise themselves in the team. Longer clerkships have already been considered in The Shape of Training Review (Greenaway, 2013).

7.5. Strengths and Weaknesses of Project

One of the strengths of this project has been its use of multiple participants to get more than just one subjective view to try and understand preparedness. This approach is supported by Monrouxes *et al's* (2014) critique of previous literature which was done after this project was commenced. The second strength was its attempt to use social theory and this as its theoretical perspective to explore preparedness.

There are areas of weakness as well. This is a single centre study, with self selected participants, and a lone researcher. Its applicability to the wider medical education could be argued. Furthermore my previous role as a doctor may mean that I cannot be considered 'an outsider' to objectively view the data. Validity was attempted by getting as second individual to review the thematic framework, and the themes were discussed at thesis advisory panel meeting. Personally, I acknowledge my previous role as a doctor and that it may have influenced my interpretation. However, it may also have been a help in some situations. The opportunity to interview individual a second time did not arise because of busy schedules. As a doctor who understands medical parlance, intonation and inference from language used may have been easier to understand.

This was always going to be a project with a lone researcher. I have tried to be objective throughout and tried to have a sociological theoretical perspective to analyse. However, I acknowledge that unconscious bias could exist within the project and be carried throughout the fieldwork, and this may only come to light if a second researcher was involved.

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Abbreviations

GMC	General Medical Council
CCT	Certificate of Completion of Training
FP	Foundation Programme
FY1 or F1	Foundation Year 1 Doctor
	r
FY2 or F2	Foundation Year 2 Doctor
GMC	General Medical Council
GP	General Practitioner
MMC	Modernising Medical Careers
MTAS	Medical Training Application System
NHS	National Health Service
OSCE	Objective structured clinical examination
PBL	Problem based learning
PRHO	Pre-registration house officer
SA	Student assistantship
SHO	Senior House Officer
UK	United Kingdom
UKMS	'United Kingdom Medical School': The anonymised name given to the study site

Appendices

QUESTIONNAIRE

Please enter your examination number below, even if you do not wish to complete the questionnaire so we will know not to send you a reminder to complete it.

Exam Candidate No_____

Tick the box for the specialty of your 1st Assistant Intern placement (GP, Medicine or Surgery). Also write in the subspecialty (e.g. Cardiology, Urology) and site (e.g. Castle Hill Hospital) of your placement

☐ General Practice   ☐ General Medicine   ☐ General Surgery

Subspecialty_____   Site_____

☐ If you do not wish to participate in this questionnaire tick this box and return the questionnaire uncompleted.

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Questionnaire – After assistant Intern Placement 1

Preparation for Practice: UKMS Medical Students' Preparation for FY1

Listed below are a series of skills that you may have experienced in your time as an Assistant Intern.

We would like you to consider and reflect on your experience during your recent Assistant Intern placement.

For each item estimate how many times you had performed that skill. We would like you to:

(i) estimate how many times you have performed that skill during the first Assistant Intern placement on *real patients*, or in the *real clinical setting*

(ii) estimate how many times you have performed that skill on *real patients* or in the *real clinical* setting in total.

(iii) rate your own subjective self-assessment of competence on the 4 point scale.

The 4 descriptors for each of the points on the scale are:

> 1 = do not feel competent to perform this procedure (lowest level of competence)
>
> 2 = feel competent to perform with supervision
>
> 3 = feel competent to perform without supervision
>
> 4 = feel competent to perform without supervision and feel able to teach this procedure to others (the highest level of competence)

Note: not all procedures can be, or are available to be, practised in the non-clinical setting like 'scrubbing up' for theatre, so a '0' would be entered in the non-clinical column.

Example: an ST2 doctor was completing this questionnaire, the skill was Knee Joint Aspiration, the ST2 doctor estimates he had performed this procedure 10 times during his recent placement, and another 4 times prior to that. He feels competent to perform this procedure unsupervised but does not feel able to teach it to others yet. He would complete as follows

Practical Skill or Procedure	Estimated no of times procedure performed on real patients in recent placement	Estimated no of times procedure performed on real patients in total	Self Assessment of Level of Competence			
			1	2	3	4
Knee Joint Aspiration	10	14			✓	

For each practical skill or procedure below estimate how many times you had performed during your first Assistant Intern placement, how many times in total and your self-assessment level of competence.

Practical Skill or Procedure	Estimated no of times procedure performed in 1st Assistant Intern Placement on real patients	Estimated no of times procedure performed on real patients in total	Self Assessment of Level of Competence			
			1	2	3	4
Administer oxygen to patient						
Arterial puncture in an adult (for arterial blood gases)						
Attach a monitor to a patient for continuous ECG monitoring						
Basic airway management and care including use of simple adjuncts (e.g. Guedal airway, nasopharyngeal airway)						
Blood culture from peripheral sites						

4 descriptors on scale
1= do not feel competent to perform this procedure
2= feel competent to perform with supervision
3= feel competent to perform without supervision
4= feel competent to perform without supervision and feel able to teach this procedure

Practical Skill or Procedure (continued)	Est. no of times procedure performed in 1st Assistant Intern Placement on real patients	Est. no of times procedure performed on real patients in total	Self Assessment of Level of Competence			
			1	2	3	4
Injection – intramuscular						
Injection – subcutaneous (e.g. insulin or LMW heparin)						
Injection of local anaesthetic into skin						
Instruct patient to use inhaler correctly						
Intravenous infusion set up						
Intravenous infusion of blood and blood products procedure						
I.V. cannulation						
Measure bedside fingerprick capillary glucose						
Measure body temperature						
Measure blood pressure by automated device						
Measure blood pressure with manual sphygmomanometer						
Move and handle patients correctly						
Nasogastric tube placement and position checking						
Nebuliser administered to patient						
Perform a 12 lead ECG						
Perform and interpret peak flow and spirometry						

4 descriptors on scale
1= do not feel competent to perform this procedure
2= feel competent to perform with supervision
3= feel competent to perform without supervision
4= feel competent to perform without supervision and feel able to teach this procedure

Practical Skill or Procedure (continued)	Est. no of times procedure performed in 1st Assistant Intern Placement on real patients	Est. no of times procedure performed on real patients in total	Self Assessment of Level of Competence			
			1	2	3	4
Perform nose, throat and skin swabs						
Pregnancy testing with bedside urine testing kit						
Prepare and administer i.v. medications and injections						
Prescribe medications on a drug chart*		■				
Prescribe subcutaneous insulin (on drug chart) and intravenous insulin (e.g. for sliding-scale or GKI)		■				
Prescribe intravenous fluid on a fluid chart*		■				
'Scrub up' for theatre						
Skin suturing						
Suture and clip removal						
Trancutaneous measurement of pulse oximetry (saturation of oxygen)						
Urethral catheterisation (male)						
Urethral catheterisation (female)						
Urinalysis using Multistix						
Venepuncture (taking blood)						
Wound care and wound dressing						

*as a medical student you are not able to prescribe so can only include details of practice

4 descriptors on scale
1= do not feel competent to perform this procedure
2= feel competent to perform with supervision
3= feel competent to perform without supervision
4= feel competent to perform without supervision and feel able to teach this procedure

prescriptions here.

4 descriptors on scale
1= do not feel competent to perform this procedure
2= feel competent to perform with supervision
3= feel competent to perform without supervision
4= feel competent to perform without supervision and feel able to teach this procedure

Below is a list of clinical situations and acute events you may have been exposed to or involved in the management of during your first Assistant Intern placement.
We would like you to consider and reflect on your experience during the Assistant Intern placement.
For each scenario or acute event estimate:

- **how many times you have been exposed to such a clinical situation during your first Assistant Intern placement**

- **how many times you have been exposed to this clinical situation in total**

- **how competent you feel in assessing this situation in a real patient**

- **how competent you feel in managing this situation in a real patient**

You should consider assessing the patient in this clinical situation and managing the patient in this clinical situation separately and give a score for *each*. Use the four point scale below.

The 4 descriptors for each of the points on the scale for *assessing* a patient are:
   1 = do not feel competent to assess this clinical situation
   2 = feel competent to assess this clinical situation with supervision
   3 = feel competent to assess this clinical situation without supervision
   4 = feel competent to teach others how to assess this clinical situation (the highest level of confidence)

The 4 descriptors for each of the points on the scale for *managing* a patient are:
   1 = do not feel competent to manage this clinical situation
   2 = feel competent to manage this clinical situation with supervision
   3 = feel competent to manage this clinical situation without supervision
   4 = feel competent to teach others how to manage this clinical situation (the highest level of confidence)

Acute events and clinical situations	Est. no of times exposed to this situation		Self-rating of Competence in <u>assessing</u> this situation				Self-rating of Competence in <u>managing</u> this situation			
	In 1st AI placement	In total	1	2	3	4	1	2	3	4
Acute asthma										
Anaphylaxis										
COPD exacerbation										
Acute pulmonary oedema (heart failure)										
Acute abdominal pain										
Upper GI bleeding										
Lower GI bleeding										
Acutely confused patient										
Oliguric patient										
Coma and impaired consciousness										
Stroke										
Shock										
Diabetic ketoacidosis										
Ischaemic leg										
Overdose										
Acute swollen leg										
Fit/Seizure										
Acute breathlessness										
Cyanosed patient										
Chest pain										
Acute coronary syndrome and MI										
Fever										
Post operative collapse										
Headache										

Hypoglycaemia										
Cardiac arrest/"crash call"										

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CONSENT FORM FOR PARTICIPANTS

Participant Identification No:

Title of Project: **Preparation for Practice: UKMS Medical Students Preparation for FY1**

Name of Researcher: **Dr Sarbpreet Sihota**

Please Initial Box

1 I confirm that I have read and understood the information sheet dated.....................(version.............) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2 I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.

3 I agree to take part in the above study

4 I agree to the interview/focus group being audio-recorded and transcribed

5 I agree to my anonymised comments being included in any reports or journal publications and understand that that I can view these comments prior to publication and ask for them to be removed without giving reason

_____   _____   _____
Name of Participant   Date   Signature

_____   _____   _____
Name of Person   Date   Signature
Taking consent

Preparation for Practice: UKMS Medical Students' Preparation for the FY1 Role
Focus Groups (or interviews) with FY1 doctors
Topic Guide
In the focus groups we want to cover the following broad topics and themes as stimulus for discussion

1 Preparation in general: thinking back to your medical student experience what do you think was most helpful in preparing you for FY1.

2 What is preparation

3 What was particularly strong in the course that you think has helped you as an FY1

4 Weakness of the course and why

5 Specific elements of the course: AIs, inter-professional training, shadowing – what each contributed

6 Themes from previous research: prescribing, transition, clinical skills, responsibility, communication, NHS structure, team work. If not brought up in discussion.

7 Teaching from doctors as students

8 Critical Incidents, epiphanies, and scenario example to introduce

9 What would have liked to do

10 Advice for UKMS to change and improve

11 Three important messages

Preparation for Practice: UKMS Medical Students' Preparation for the FY1 Role
Interviews with Supervising Consultants and GPs
Topic Guide
The following topics will be discussed at interview:

1 Understanding of Assistant Intern Placements

Can you tell me what you understand as the purpose of the AI placements in the final year?

Are you familiar with Tomorrow's Doctors 2009 and the recommendation of Student assistantships?

2 Practice as Supervisor of AI placements

How do you structure the placements for the students you supervise?

Do you follow any guidelines from HYMS or have you your own preferred practice?

Which other medical staff do you involve?

Do you sign a contract with each AI and what do you discuss?

How often do you review progress?

How do the AI objectives fit with your specialty; do you need to make any changes to the programme because of location or specialty?

3 AI performance

What activities do you expect the AI to engage in?

What activities would you not be comfortable with AIs doing?

How do you deal with underperforming students or students that don't participate?

Can the AI become a member of the team?

What should AIs be doing that they are currently not doing and why?

What should AIs not be doing that they are currently doing?

How do you assess the AIs?

4 AI programme

What are your opinions about the strengths and weaknesses of AI placements?

Have you worked with HYMS graduates – do you think AI placements were helpful for them?

How would you change the placements?

What are the good points?

Do you think the AI placements prepare HYMS students for the FY1 role?

Participant Information Sheet

Preparation for Practice: UKMS Medical Students Preparation for FY1

This information sheet is about a research project in which we are inviting you to take part. It concerns how UK Medical School (UKMS) prepares medical students for Foundation Year 1 (FY1).

What is the project about?

The aim of your final year (Phase III) at UKMS was for you to qualify as a doctor. Your clinical placements were designed with you having greater involvement in managing patients and delivering care under supervision. It was intended that this experience and increased responsibility would have aided in preparing you for professional practice and ease transition to FY1.
We are interested in exploring your experience of your Phase III placements to see if they prepared you for the FY1 role. It is hoped that the findings will lead to an improvement in the delivery and structure of Phase III.

Why have I been chosen?

As you are a UKMS graduate working in a UKMS affiliated hospital, we are interested in your experience as a UKMS student to improve the Phase III programme.

Do I have to take part?

Participation is voluntary and you can change your mind and withdraw at any time without giving reason.

What would taking part involve?

If you agree to take part, we will ask you to attend focus groups with fellow FY1 doctors to discuss your Phase III experience.
We are recruiting two groups of 10 UKMS graduate FY1 doctors: 10 FY1 doctors from [affiliated hospital] Hospital and 10 FY1 doctors from [affiliated hospital]. Each group of FY1 doctors will attend focus groups to discuss their Phase III experience and how it prepared them for FY1. Five focus groups will take place at each site every six weeks from November 2010 until May 2011. So this will be from 3 months after you have started work as an FY1 until 10 months into your FY1 year.
For FY1 doctors based at [affiliated hospital] these will take place at the UKMS Learning and Research Centre at [affiliated hospital] after 5pm on a working day. For FY1 doctors based at [affiliated hospital] these will take place at the UKMS building after 5pm on a weekday.
Each focus group is anticipated to last between one and one and a half hours.

Why are there five focus groups?

As you progress through your three FY1 posts and gain experience, you may reflect on your UKMS experience differently and change your perceptions to your Phase III placements, so we are interested in seeing whether your opinions change. If we find that the later focus groups do not add any new information further focus groups may be cancelled.

What if I can't attend all five focus groups?

The focus groups will be arranged near your site of work after 5pm to lessen any disruption. It is hoped that you can attend all, or as many, of the focus groups as possible but it is acknowledged that this may not be possible as they may coincide with on-call or personal commitments or annual leave. You can still volunteer if you cannot attend all five focus group meetings.

What will happen to the information and findings from the project?

The focus group discussions will be audio-recorded and these will be transcribed and analysed. Transcripts will be anonymised and kept securely at UKMS. Anything you tell us would be confidential to the research team and any of your comments that may be used in project write up and reports would be anonymised. Confidentiality would be broken, however, if information was uncovered that a medical student or FY1 had acted outside of the principles and values in the GMC's *Good Medical Practice: Duties of a Doctor* and *Medical Students: Professional values and Fitness to Practise*. In these circumstances the UKMS Undergraduate Dean and [local] Foundation School Director would be informed.

Expenses and payment

Any travel expenses will be reimbursed. Food will be provided at the focus group meetings. There will be no payment for research participation.

Are there any risks?

There are no physical risks with this study; however discussion of your medical student experience could cause you to think or discuss about issues that may be difficult or distressing.

Are there any benefits?

The study may not be of direct benefit to you. It may benefit future UKMS students in possible improvements in the course resulting from its findings.

Who is doing the study?

The chief investigator is Dr Sarbpreet Sihota, Clinical Research Fellow in Medical Education and Honorary Specialist Registrar in Diabetes and Endocrinology, Hull York Medical School. He will be facilitating the focus groups. The supervisor is Dr Andy Brown, Senior Lecturer in Medical Education and Consultant Rheumatologist, Hull York Medical School.

What if there is a problem?

If you have any concern or complaint about any aspect of the study you should speak to Dr Sarbpreet Sihota or Dr Andy Brown at the contact details below.

What happens next?

If you are willing to take part in the focus groups as described above please contact Dr Sarbpreet Sihota directly (via e-mail preferably).

Further Information?

If you are interested and you would like further information on the study, please contact:

Sarbpreet Sihota
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University of York
Heslington
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Tel: 01904 321795
Sarbpreet.Sihota@hyms.ac.uk

Andy Brown
Hull York Medical School
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Heslington
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Tel: 01904 321789
Andrew.Brown@hyms.ac.uk

Participant Information Sheet

Preparation for Practice: UKMS Medical Students Preparation for FY1

This information sheet is about a research project in which we are inviting you to take part. It concerns how UKMS prepares medical students for Foundation Year 1 (FY1).

What is the project about?

Final year (Phase III) UKMS placements are called Assistant Intern (AI) placements. They have been designed so that medical students having greater involvement in managing patients and delivering care under supervision. It is intended that this experience and increased responsibility aids in preparing students for professional practice and eases transition to FY1. We are interested in exploring your experience as an AI supervisor and your perceptions on how they prepare students for the FY1 role. It is hoped that the findings will lead to an improvement in the delivery and structure of Phase III AI placements.

Why have I been chosen?

As you have been a supervisor of students during their AI placements, we are interested in your experience to improve the Phase III programme.

Do I have to take part?

Participation is voluntary and you can change your mind and withdraw at any time without giving reason.

What would taking part involve?

If you agree to take part, we will ask you to participate in a 30 minute face-to-face interview with the chief investigator of this project.
We are recruiting one physician and one surgeon from each of the six hospital sites involved in UKMS teaching. We are also recruiting four general practitioners involved in AI supervision.
We would like to arrange the interviews to occur at your place of work – consultant offices or GP practices – at a mutually convenient time. If you agree to take part the chief investigator would contact your secretary/PA to arrange the interview time. These interviews will take place between October and December 2010. Face-to-face interviews are preferable as this

will allow uniform methodology. However if you wish for a telephone interview instead, then this method can be chosen.

What will happen to the information and findings from the project?

The interviews will be audio-recorded and these will be transcribed and analysed. Transcripts will be anonymised and kept securely at UKMS. Anything you tell us would be confidential to the research team and any of your comments that may be used in project write up and reports would be anonymised. Confidentiality would be broken, however, if information was uncovered that a medical student or FY1 had acted outside of the principles and values in the GMC's *Good Medical Practice: Duties of a Doctor* and *Medical Students: Professional values and Fitness to Practise*. In these circumstances the UKMS Undergraduate Dean and the Foundation School Director would be informed.

Expenses and payment

There will be no payment for research participation.

Are there any risks?

There are no physical risks with this study.

Are there any benefits?

The study may not be of direct benefit to you. It may benefit future UKMS students in possible improvements in the course resulting from its findings.

Who is doing the study?

The chief investigator is Dr Sarbpreet Sihota, Clinical Research Fellow in Medical Education and Honorary Specialist Registrar in Diabetes and Endocrinology, Hull York Medical School. He will be the interviewer. The supervisor is Dr Andy Brown, Senior Lecturer in Medical Education and Consultant Rheumatologist, Hull York Medical School.

What if there is a problem?

If you have any concern or complaint about any aspect of the study you should speak to Dr Sarbpreet Sihota or Dr Andy Brown at the contact details below.

What happens next?

If you are willing to take part in the focus groups as described above please contact Dr Sarbpreet Sihota directly (via e-mail preferably).

Further Information?

If you are interested and you would like further information on the study, please contact:

Sarbpreet Sihota
Hull York Medical School
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CONSENT FORM FOR PARTICIPANTS

Participant Identification No:

Title of Project: **Preparation for Practice: UKMS Medical Students Preparation for FY1**

Name of Researcher: **Dr Sarbpreet Sihota**

Please Initial
Box

1. I confirm that I have read and understood the information sheet dated.....................(version.............) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.

3. I agree to take part in the above study

4. I agree to the interview/focus group being audio-recorded and transcribed

---

Name of Participant   Date   Signature

Name of Person
Taking consent   Date   Signature

28 November 2011

Dr Sarbpreet Sihota
Hull York Medical School
University of York
Heslington
York
YO10 5DD

Dear Dr Sihota

**10 03 – Sarbpreet Sihota – 'Preparation for Practice: HYMS
Medical Students Preparation for the FY1 Role'**

Thank you for your amended application dated 9 August 2011.

The Committee has considered the proposed amendments to your
protocol and **approves** your study.

Please ensure that the documents used in the study are equivalent to the
attached referenced versions which you should retain for your records.
If during the course of the project you need to deviate significantly from
the above-approved document please inform me since written approval
will be required. Please also inform me should you decide to terminate
the project prematurely.

Yours sincerely

Professor William McGuire
Chair
HYMS Ethics Committee

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National Research Ethics Service

Bradford Research Ethics Committee
Yorkshire & Humber REC Office
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LS6 4RA

Telephone: 0113 305 0128

25 October 2010

Dr Sarbpreet Sihota
Hull York Medical School
University of York
Heslington Road
York
YO10 5DD

Dear Dr Sihota

Study Title: **Preparation for Practice: HYMS Medical Students Preparation for the FY1 Role**
REC reference number: 10/H1302/73

Thank you for your letter of 1st October responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Ethical review of research sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see 'Conditions of the favourable opinion' below).

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

For NHS research sites only, management permission for research ("R&D approval") should be obtained from the relevant care organisation(s) in accordance with NHS research

governance arrangements. Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at http://www.rdforum.nhs.uk

Where the only involvement of the NHS organisation is as a Participant Identification Centre (PIC), management permission for research is not required but the R&D office should be notified of the study and agree to the organisation's involvement. Guidance on procedures for PICs is available in IRAS. Further advice should be sought from the R&D office where necessary.

Sponsors are not required to notify the Committee of approvals from host organisations.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	Version	Date
Investigator CV		24 August 2010
Protocol	08/10	09 August 2010
Dr. Andrew K Brown's CV		01 March 2010
REC application		03 September 2010
Covering Letter		23 August 2010
Covering Letter		01 October 2010
Letter from Sponsor		18 August 2010
Interview Schedules/Topic Guides	TG FY1.0 &TG ES 1.0	01 August 2010
Letter of invitation to participant	ILP 1.0	01 August 2010
Response to Request for Further Information		
Participant Information Sheet: supervisors	1.1	01 October 2010
Participant Information Sheet: students	1.1	01 October 2010
Participant Information Sheet: alternative method of interviews	2.1	01 October 2010
Participant Consent Form	1.0	15 August 2010

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Now that you have completed the application process please visit the National Research Ethics Service website > After Review

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

The attached document *"After ethical review – guidance for researchers"* gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nres.npsa.nhs.uk.

10/H1302/73	Please quote this number on all correspondence

Yours sincerely

Professor Alan Roberts
Chairman
OBE, TD, DL, MPhil, PhD, DSc, LLD, DTech

Email: Sinead.audsley@leedspft.nhs.uk

Enclosures: "After ethical review – guidance for researchers",

Copy to: Dr Andrew Brown, Hull York Medical School
Ms Sue Final, University of York