

Patient safety in health care professional educational curricula: examining the learning experience



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Research Team (Patient Safety Education Study Group)

Darren Ashcroft	University of Manchester
Fay Bradley	University of Manchester
Peter Buckle	University of Surrey
Kathrin Cresswell	University of Edinburgh
Val Dagley	University of East Anglia
Pam Dawson	Northumbria University
Claire Dickinson	Newcastle University
Karen Fairhurst	University of Edinburgh
Amanda Howe	University of East Anglia
Jill Lawrence	University of Surrey
Susanne Lindqvist	University of East Anglia
Carin Magnusson	University of Surrey
Maggie McArthur	University of East Anglia
Steve Page	North East Strategic Health Authority
Pauline Pearson	Newcastle University
Nancy Redfern	Newcastle University
Jill Robinson	University of East Anglia
Aziz Sheikh	University of Edinburgh
Andrew Smith	Royal Lancaster Infirmary
Pam Smith	University of Surrey
John Spencer	Newcastle University
Alison Steven	Newcastle University
Jane Stewart	Newcastle University
Valerie Wass	University of Manchester
David Wright	University of East Anglia

Steering Group

Gerry Armitage	University of Bradford
Darren Ashcroft	University of Manchester
Maureen Baker	Royal College of General Practitioners
Ieuan Ellis	Leeds Metropolitan University
Tanya Huehns	NPSA
Amanda Howe	University of East Anglia
Nigel Norris	University of East Anglia
Pauline Pearson	Newcastle University
Aziz Sheikh	University of Edinburgh
Linda Sheldrake	Royal Pharmaceutical Society
Pam Smith	University of Surrey
Alison Steven	Newcastle University

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*Pauline Pearson and Alison Steven
on behalf of
The Patient Safety Education Study Group*

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Glossary

ADR	Adverse drug reaction
CD	Course Director
CINAHL	Cumulative Index to Nursing and Allied Health Literature
CSP	Chartered Society of Physiotherapy
DH	Department of Health
GMC	General Medical Council
HPC	Health Professions Council
IPL	Interprofessional learning
IPW	Interprofessional working
NHS	National Health Service
NMC	Nursing and Midwifery Council
NPSA	National Patient Safety Agency
NQP	Newly qualified practitioner
OSCE	Objective Structured Clinical Examination
PBL	Problem-based learning
PS	Patient Safety
RPSGB	Royal Pharmaceutical Society of Great Britain
SOP	Standard Operating Procedures
TEDS	Thrombo Embolus Deterrent Stocking
WHO	World Health Organisation

Executive Summary

This study has investigated the formal and informal ways pre-registration students from four healthcare professions learn about patient safety in order to become safe practitioners. The study aims to understand some of the issues which impact upon teaching, learning and practising patient safety in academic, organisational and practice 'knowledge' contexts.

In Stage 1 we used a convenience sample of 13 educational providers across England and Scotland linked with five universities running traditional and innovative courses for doctors, nurses, pharmacists and physiotherapists. We gathered examples of existing curriculum documents for detailed analysis, and interviewed course directors and similar informants.

In Stage 2 we undertook 8 case studies to develop an in-depth investigation of learning and practice by students and newly qualified practitioners in universities and practice settings in relation to patient safety. Data were gathered to explore the planning and implementation of patient safety curricula; the safety culture of the places where learning and working take place; the student teacher interface; and the influence of role models and organisational culture on practice. Data from observation, focus groups and interviews were transcribed and coded independently by more than one of the research team. Analysis was iterative and ongoing throughout the study.

NHS policy is being taken seriously by course leaders, and Patient Safety material is being incorporated into both formal and informal curricula. Patient safety in the curriculum is largely implicit rather than explicit. All students very much value the practice context for learning about patient safety. However, resource issues, peer pressure and client factors can influence safe practice. Variations exist in students' experience, in approach between university tutors, different placement locations – the experience each offers – and the quality of the supervision available. Relationships with the mentor or clinical educator are vital to student learning. The role model offered and the relationship established affects how confident students feel to challenge unsafe practice in others. Clinicians are conscious of the tension between their responsibilities as clinicians (keeping patients safe), and as educators (allowing students to learn under supervision). There are some apparent gaps in curricular content where relevant evidence already exists – these include the epidemiology of adverse events and error, root cause analysis and quality assessment. Reference to the organisational context is often absent from course content and exposure limited. For example, incident reporting is not being incorporated to any great extent in undergraduate curricula. Newly qualified staff were aware of the need to be seen to practice in an evidence based way, and, for some at least, the need to modify 'the standard' way of doing things to do 'what's best for the patient'.

A number of recommendations have been made, some generic and others specific to individual professions. Regulators' expectations of courses in relation to patient

safety education should be explicit and regularly reviewed. Educators in all disciplines need to be effective role models who are clear about how to help students to learn about patient safety. All courses should be able to highlight a vertical integrated thread of teaching and learning related to patient safety in their curricula. This should be clear to staff and students. Assessment for this element should also be identifiable as assessment remains important in driving learning. All students need to be enabled to constructively challenge unsafe or non-standard practice. Encounters with patients and learning about their experiences and concerns are helpful in consolidating learning. Further innovative approaches should be developed to make patient safety issues 'real' for students.

Section A: The study context

Chapter 1: Background

Introduction to the issues

Error and mishap are common in patient care, and this may be inevitable in the light of the growing complexity of health service provision. However, whilst recognising both the inevitability of error, and the fact that most mistakes are due to system rather than individual failure (Reason 1995), there is evidence that individuals are still concealing or under-reporting errors (Firth Cozens et al, 2004). It has been argued that ‘the most fundamental change needed if (medicine and health care) are to make meaningful progress in error reduction is a cultural one’ (Leape 1994) ie health professionals must accept that avoidable errors do occur, even when the highest standards are set. The solution to error is seen to lie in addressing underlying conceptual models of, and attitudes towards, error, and in the establishment of a learning culture in which there is systematic reporting of error and continuous improvement of practice (Lester and Tritter 2001).

NHS policy has been moving to implement such changes. The Health Professions Council (HPC) has set generic proficiency standards, which apply to all the 12 professions it regulates. These standards specify that the practitioner must maintain a safe practice environment and select appropriate hazard control and risk management strategies (HPC 2003). The National Patient Safety Agency (NPSA) launched its *Seven Steps to Patient Safety* which highlight the key components of a safe health care system (NPSA 2003). These begin with the construction of an organisational safety culture in which every member of staff feels able to identify dangers for patients or colleagues. The next three ‘steps’ focus on the integration of patient safety, risk management and hazard reporting in healthcare organisations. Key to the development of patient safety curricula are the final three steps, which seek first to ensure that healthcare workers involve and communicate effectively with patients and the wider public. Many of the major cases which have led to stronger governance in the NHS as a whole (Bristol, Alder Hey, and others) have involved health professionals who failed to listen to or communicate with patients or the wider public, let alone enable them to participate in the development of their care. Second, the guidance highlights the need for staff to examine – in a ‘no-blame’ culture – how and why things have happened as they have. At a time when patient litigation against doctors and other health professionals is still rising in UK, defensiveness is often prioritised over learning in order to avoid further incidents. Thirdly, it is important that from day one, doctors and other health professionals are enabled to make changes to their practice as well as their working systems and environment to prevent further problems. This multi-dimensional policy is likely to form the basis of a thrust towards organisational change within the NHS, though there may be differing speeds of adoption.

The formal stages of pre- and post-registration training for health professionals together make up *the* biggest systemic intervention designed to ensure patient safety in health care practice in the UK. Of course this intervention is complex and multifaceted, including multiple components which vary across sites and disciplines,

and will also vary with tutor and learner. All the components of a training intervention may act interdependently as well as independently. This study acknowledges the methodological approaches recommended elsewhere (MRC 2000) when evaluating complex interventions: theoretical components should be identified from literature, their components modelled, and an exploration undertaken to look at how those components impact in practice. The exploratory stage can also be examined for key levers for change, for example the role of patients and their families in improving learning impacts (Campbell 2001).

Patient safety has become a key focus for clinical service in the UK NHS, and now has both organisational structures and a research agenda to consolidate what it means in practice. There is not yet a strong evidence base for the ways in which 'patient safety' is understood and applied during training. This study seeks to deliver a robust insight to current approaches in health professional training to this concept, ensuring that all relevant areas of learning are considered, and that findings can be generalised across different disciplines.

There is relatively little evidence indicating the ways in which 'patient safety' can be effectively incorporated within health care curricula, either prior to qualification / registration or afterwards. Didactic teaching of content or technical skills seems unlikely to enable practitioners to learn to address the human factors that lead to errors. Whilst formal curricula are gradually being changed in order to highlight patient safety alongside evidence-based practice, and educational frameworks for learning and teaching about patient safety have been described (Kohn et al, 1999), it is not clear how far behaviour is driven by the informal or hidden curriculum, nor which educational strategies are most effective in creating change. It seems likely that learning about patient safety and a shift away from a 'blame culture' also requires some attention to effective interprofessional and collaborative patterns of working. This study is designed to address some of these issues and questions.

Scene setting for the study: the contexts / sites

The study has examined a range of traditional and innovative curricula related to patient safety and associated areas. We have used a convenience sample of 13 educational providers linked with five universities in England and Scotland which run validated pre-registration courses for doctors (4), nurses (4), pharmacy (3), and physiotherapy (2). In-depth case studies have been carried out in eight providers (two for each discipline), considering different programmes, practice environments and models of teaching and learning.

Patient safety policy

In the report *An Organisation with a Memory* (DH June 2000), the authors stated that when serious 'adverse events' take place within NHS organisations, "inquiries and incident investigations determine that 'the lessons must be learned', but the evidence suggests that the NHS as a whole is not good at doing so". In *Safety First* (DH 2006), the authors noted that "the pace of change has been too slow" and said

that their overriding message was about strengthening leadership to make patients safe. Healthcare can be seen as statistically hazardous – almost on a par with bungee jumping – and with many more lives lost each year, whereas air flights and nuclear power are very low risk. Change is therefore viewed as crucial.

Since this study was commissioned, a number of changes have taken place: The NPSA has been refocused, and we have seen the development of the National Reporting and Learning System (NRLS), with the involvement of the Royal Colleges. Patient Safety Action Teams have been developed, together with a national network of these. The Patients for Patient Safety initiative has been launched by WHO, and the UK Safer Patients Initiative (with the Health Foundation) has been working with 20 hospitals. In addition the NHS Institute has run several programmes, and the Patient Safety First campaign has been developed, aiming to change the culture within the NHS 'to one that makes the safety of patients the highest priority and makes all avoidable death and harm unacceptable'. There is also an increased focus across NHS on safety and quality and on the use of commissioning and contracting to ensure this.

Reducing iatrogenic harm and improving the safety profile of healthcare delivery remain high on the policy radar, both domestically and internationally (DH 2000), (Kohn LT et al, eds 2000). Recent national developments include the creation of the NPSA and its NRLS for collating and learning the lessons arising from patient safety incidents in England (NPSA 2008a). Patient Safety Observatory (NPSA 2008b) and its National Clinical Assessment Service for identifying and intervening with under-performing medical and dental practitioners (NPSA 2008c)

The NPSA was set up in July 2001 following the report *An Organisation with a Memory* (DH 2000) which was commissioned to advise the NHS how it could learn from its experiences. *Building A Safer NHS for Patients* (DH 2001) spelt out the Government's plans following *An Organisation with a Memory*. One of the themes in the plan – *Learning lessons and disseminating them* – relates to education and asks for research to underpin how the NHS can learn lessons and techniques to embed lessons in practice. The report also called for ways to identify effective learning which results in improved patient safety and reductions in risk.

In 2003 *Creating the virtuous circle: patient safety, accountability and an open and fair culture* (NHS Confederation 2003) was produced in which educators were encouraged to promote learning from adverse events. It was also suggested that patient safety be included in qualification courses at every level and that educators should teach crucial skills such as interaction, leadership, teamwork and communication.

In 2006 the NPSA began developing 'foresight' building on lessons learnt from other industries to develop training for nurses and midwives, and to identify where foresight training fits with existing nursing education. The Health Foundation (www.health.org.uk) also recommended better training for health professionals in their 2006 report.

The Department of Health publication *Safety First* (DH 2006) recommended that the NHS Institute for Innovation and Improvement work with medical Royal Colleges and other education providers to ensure advances are made in education and

training to support patient safety. It emphasised the need for developing a patient safety curriculum which promotes the required attitudes, behaviours and skills. Also of importance is the formal incorporation of safety considerations into the *NHS Connecting for Health and NHS Connecting for Health's Evaluation Programme* (NHS Connecting for Health 2008)

The global standing of this subject matter has been the World Health Organisation's (WHO) World Alliance of Patient Safety in 2004, this being responsible for implementing the World Health Assembly Resolution (2002) urging WHO and Member States to prioritise the issue of patient safety (WHO World Alliance for Patient Safety 2008). Key campaigns currently being pursued by the World Alliance of Patient Safety include the importance of 'clean care' to minimise the risk of hospital-acquired infections, improving the safety of care through implementation of the 'surgical checklist' and the 'patients for patient safety' agenda, which emphasises the potential central importance of consumers in improving healthcare. The USA National Patient Safety Foundation (www.npsf.org) and Australian National Patient Safety Education Framework (www.safetyandquality.org) have been formed specifically to conduct research and to advise professionals on patient safety issues. Also important has been the US Institute of Healthcare Improvement's *5 Million Lives Campaign*, which has been running from December 2006 to December 2008 and aims to prevent 5 million episodes of patient harm over this period (Institute for Healthcare Improvement 2008)

Research activity in this area too continues to proliferate on several fronts, including: research into developing an improved understanding of disease burden resulting from iatrogenic harm; methodological developments associated with interrogating large databases – of routinely collected data, for example; development of conceptually sound and empirically useful taxonomies of patient safety incidents; and investigation of ways of preventing harm and improving safety (Hurwitz B, Sheikh A eds, 2009).

Whilst these developments are undoubtedly welcome, there remains much to be done if the patient safety movement is to realise its potential (Leape LL, Berwick DM, 2005). Key policy challenges for the future include further developing international, national and local leadership capacity; the creation of coherent local and national policies that balance the tensions between 'no blame' and 'litigious' models of care; firmly embedding systems thinking and the importance of safety culture within health and social care settings; and, above all, focusing on developing and evaluating the effectiveness and cost-effectiveness of patient safety interventions (Sheikh A et al, 2007).

Chapter 2: Literature

Introduction

This review covers: Medicine, Nursing, Physiotherapy and Pharmacy in relation to patient safety with a specific focus on undergraduate learning and education. Although this was not a systematic review, literature was found by searching for agreed terms (nursing/ medicine/ pharmacy/ physiotherapy + curriculum, teaching, patient safety, undergraduate, quality, risk, error separately and in combination) across Medline, Scholar Google, PubMed and CINAHL and Academic Search Elite. It included a number of editorials and opinion pieces as well as research. Where possible grey literature was also accessed.

A review of the literature in relation to nurse education

Introduction

Keeping patients safe is not a new phenomenon within nursing. Florence Nightingale's (1896) often quoted words: *First do no harm* reflect the fundamentals of good nursing. However, as Malone (2004) states, healthcare more than a century later is still struggling to understand how we can improve patient safety.

Curriculum theory and practice

A study undertaken in the US by VanGeest and Cummins (2003) completed an educational needs assessment for improving patient safety. The research aimed to develop a patient safety curriculum for nurses and doctors through the identification of key informational and educational needs. Findings from survey and focus group respondents located key issues at a systems level and concluded that a comprehensive curriculum needs to encourage a multi-professional approach to patient safety through extended collaboration among the different healthcare teams. Doctors and nurses also suggested specific patient safety curriculum topics, and plans were underway to incorporate these into a web-based patient safety curriculum.

Hartland et al (2003) developed and assessed 'trigger-films' depicting patient safety incidents. The films involved the overly confident student, the self-defeating student and teaching was stressed. This was seen as a way to ensure that teaching occurs in settings of safety and quality.

Bremner et al (2000) discussed the use and development of computer simulation for clinical decision-making for entry level registered nurses. The background to this project was the notion that today's staff development educators appeared to struggle to prepare newly qualified nurses for decision-making.

Kapborg (1995) looked at admissions criteria for schools of nursing in Sweden which have no requirements regarding mathematical skills. Students were given a maths test and those admitted on the basis of age and experience had significantly lower scores. Results were discussed in relation patient safety and the potential of making drug errors (Kapborg 1995).

While not specific to nurses some projects have looked at adapting educational initiatives from aviation for use in healthcare (Flanagan et al, 2004; Glavin et al,

2003). Flanagan et al (2004) evaluated an educational programme from Australia which focused on patient safety through the use of crisis resource management modules. The programme enabled students to reflect and consolidate knowledge and skills in order to get a deeper understanding of how their performance impacted on patient safety. Both nurses and doctors participated in the evaluation and reported that the programme offered unique learning experiences.

During 2006/07 the focus appears to have turned towards an agreement that there is a need to improve safety education for the next generation of health professionals. The need for understanding patient safety education and its effectiveness is being highlighted.

In 2006 the journal *Quality and Safety in Healthcare* asked its readers to comment on how they could contribute more effectively to health professions' education. Answers themed around needing to report 'model curricula' as well as encouraging studies that engage students in patient safety improvement initiatives (Stevens 2006). An example of this is presented by Henriksen and Dayton (2006) who suggest that the extreme rates of science and technology advancements creates clinical learning environments that are not ideal for students. They stress that training is an important tool for addressing new knowledge requirements and suggest that the way forward is to introduce a systems approach to training.

Further developments in the field of education are described by Page and McKinney (2007) who discuss an educational initiative intended to highlight medication safety to undergraduate nurse education. A 'medication safety day' for student nurses was introduced to explain possible causes of medication error. The evaluation concluded that education has not only to ensure adequate theoretical knowledge, but also needs ensure that students get an awareness of the range of factors that can contribute to occurrence of medication error. Kazaoka et al (2007) also investigated the role of medication error in nurse education through the use of simulation. 108 third year nursing students from Japan had to read a 'simulation story' of a medication error and then submit a report outlining what led to the error. Findings suggested that communication problems were seen as a key factor, which was influenced by relationships in the workplace.

Frank Milligan (2007) argues that in order to shift UK healthcare towards having a patient safety culture there is a definite need to change the way healthcare professionals are trained. The example of drug administration error is used to explain human factors theory. The Human Factors Analysis and Classification System (HFACS) is suggested as a way to tailor teaching to the level of the student and emphasise important points in relation to the development of safety cultures. Recommendations are made in relation to how we should change healthcare curricula. These include: to include clear teaching on the importance of systems approach, as well as including human factors theory from the beginning of healthcare educational programmes.

Another recent paper, Johnstone and Kanitsaki (2007) presents a literature review aimed at finding models of effective clinical risk management and patient safety training for nurses. The review revealed a lack of evidence on available models and the authors stress that patient safety nurse education needs to be researched as a strategic priority. The review concludes by underlining the need for nurses to

develop skills that prepare them to respond appropriately to clinical risks. The provision of evidence-based safety education is needed and the authors stress that the challenge is now to design and deliver the new safety curricula.

Interprofessional learning

In addition to the previously described nurse specific literature there is a growing body of work which highlights the need for improved training involving shared learning for *all* healthcare professions. Institute of Medicine (2003) in its report *Health Professions Education: A bridge to quality* claimed that health education was in need of a major overhaul due to the following key reasons:

- Shifts in the population
- In practice, professionals work in interprofessional teams, yet they are not educated together
- The evidence base is rapidly expanding, but is not sufficiently evaluated
- Professionals have few opportunities in education to analyse root causes of error

Although the context for the above work is the US, it is interesting to note the recommendations that stemmed from this work. The key suggestions were:

- Develop common language and a core set of competencies *shared* between health professionals
- Accreditation bodies should revise programme standards and co-ordinate efforts across the professions
- Health professions to periodically review ability to deliver patient care
- Develop learning centres representing partnerships between practice and education

Another significant study (Battles et al, 2001) analysed the root causes of near-miss events involving graduate medical trainees. It suggested that event-reporting systems should be able to document the types of errors made by medical trainees. Findings show that inadequate educational preparedness could cause significant harm to patients, and analysis of events revealed deficiencies in educational content and programme structure. Aron and Headrick (2002) used an analytical approach from the field of human error, which allowed them to investigate how medical education can increase the number of students who are prepared to reflect on and improve professional practice. They describe what is called the 'system model of error reduction' which contrasts with the person-oriented approach where focus for errors is on personal responsibility. The authors conclude that a similar model could be used for training doctors.

Blum et al (2004) conducted an evaluation of an anaesthesia management course created to teach skills for debriefing after critical events for US medical school. The course addressed patient safety by teaching behavioural skills for critical events. Positive outcomes were measured one year later, together with self-perceived changes in the management of critical events.

Singh et al (2005) addresses a project which aimed to design and implement a new patient safety curriculum in a collaboration between nursing and pharmacy. The curriculum was introduced into a family medicine course and input from both nursing and pharmacy aimed to facilitate building more effective teams. In addition, research from the University of Surrey (Stubbs et al, 2003) identified a significant need for improved knowledge and training to improve the competencies of all health care professionals using medical equipment in order to improve and take patient safety forward in a more effective way.

Conclusion

Patient Safety is currently high on the UK and international agendas. However, there is currently limited evidence to show how nurse educators are incorporating patient safety themes into programmes and what effect such training has on practice. Although there are some recent examples of small scale research studies investigating patient safety education for UK nurses, the majority of the research has been carried out in the US and Australia.

A review of the literature in relation to medical education

Introduction

Doctors have always known that 'mistakes happen' (Paget, 1988) but in recent years evidence has emerged that errors which affect patient safety are more common than previously thought. The influential American publication *To Err is Human* (Kohn, 2000) described a range of errors and their causes in the American health system, and concluded that many medical errors were avoidable. One of their recommendations related to education:

Clinical training and education is a key mechanism for cultural change. Colleges of medicine, nursing, pharmacy, health care administration and their related associations should build more instruction into their curriculum on patient safety and its relationship to quality improvement. (p 146)

Patient safety in medicine

The epidemiology of error in medicine has shown that safety is a major concern in six main areas – problems of: (i) access; (ii) communication leading to breakdown in patient/clinician relationships; (iii) diagnostic errors; (iv) prescribing errors; (v) errors in organisational systems; and (vi) technological failures (Wilson & Sheikh, 2002). The World Health Organisation (2008) has prioritized five areas of global safety concern: blood products; hand hygiene; clinical procedures (including surgical errors such as wrong site operations and equipment failures); injection; and immunisation safety. Both the prevalence and severity of error varies with clinical setting – for example, reports of potential errors in medication may be common but are often detected and queried by staff or patients, whereas a wrong drug being injected into the wrong site could have immediate and catastrophic consequences.

Clinical practice poses challenges of complexity where the breadth of tasks undertaken by clinicians with patients who may be very sick and vulnerable leads to a high level of clinical uncertainty. Doctors are used to high risk environments

because of this uncertainty, and because they are often held ultimately accountable for a number of unpredictable outcomes. The culture of medical practice tends to emphasise the autonomy of doctors' professional judgement above protocols and routines.

Authors have attempted to categorise the causes of and solutions to errors in patient care. Vincent (2003) produced a framework for analysing error at the different levels of: institution; organisational management; the workplace environment; the team; the individual staff member; the specific task; and the patient. This concurs with much of the literature which recognises that errors may be a result of a number of co-existing human and systems factors.

Evidence for problems with patient safety theory and practice as applied in medicine has strengthened from the 1990s (eg Reason 1990, Leape 1994 & 1998). Authors suggested solutions, including: the use of systems theory; improved team work; better use of information and IT; quality measurement; and proactive communication with patients about risks and errors; as well as improved medical education. Patient safety is one of a complex set of issues related to quality improvement and it is suggested that more research is required to investigate their inter-relationship (Grol et al, 2002). However, in general a quality promoting culture is expected to include risk minimisation and proactive prevention of avoidable errors. It is said that organisations which have a 'safety culture' are alert to all contributory causes of errors, encourage 'no-blame' reporting and develop safer systems and working practices (Lilford, 2006). Some authors describe ways of measuring safety culture (Nieva & Sorra, 2003; Pronovost et al, 2003) and others ways of encouraging it. Lilford suggests that specific actions help, such as improving design of equipment and reducing pitfalls at the interface between settings (2006, p. 113/4).

Reporting has emerged as a key issue, with many writers feeling that concern about being seen as fallible and fear of blame or litigation has led to doctors being unwilling to admit to or report mistakes. Lucian and Leape (2002) compare safety in medicine to that in aviation, as others have done. They discuss reasons why errors are not reported and suggest that successful reporting systems are: non-punitive, confidential, independent, lead to expert and timely analysis and dissemination, and are systems orientated rather than focused on individuals (p. 1356).

Recently several books have been published covering patient safety issues: *Patient Safety: Principles and Practice* (Byers & White, 2004); *Patient Safety* (Vincent 2006); and *Patient safety: research into practice* (Walshe & Boaden, 2006). A key theme in recent literature has been the greater involvement of patients (Coulter, 2006, Howe, 2006 & Kuzel et al, 2004). Patient Safety is now high on the political agenda (Carruthers, 2006) and this high profile has led to many statements and initiatives at professional, national and international levels.

Policy Statements

In the UK the policy documents that have most relevance to medical education are from the General Medical Council (GMC), the Department of Health (DH), the National Patient Safety Agency (NPSA) and professional organisations.

Tomorrow's Doctors (GMC 2003) set criteria for medical training and cited patient safety as an important part of curriculum, mentioning students' own health, safe

skills, safe prescribing, safe use of drugs, and health and safety. *Graduates.. must .. know about and understand .. how errors can happen in practice and the principles of managing risk.* The BMA have followed this up with recent updates – *Medicine in the 21st Century* (Sept. 2005), *Core education outcomes* (2006), and *Strategic Options for undergraduate medical education* (2006). The British Medical Association (2005) also addressed patient safety in its list of recommendations for the delivery of undergraduate medical education.

An Organisation with a Memory (DH, 2000) quantified the problem of adverse events in human and financial terms and suggested that a safety culture and systems approaches rather than blame, would improve patient safety. This was followed by *Building a Safer NHS for Patients* (DH, 2001) which set up the NPSA and promoted reporting systems, targets for specific areas and research. *Seven Steps to Patient Safety: A Guide for NHS staff* (NPSA, 2003) identified the following factors as crucial to improving patient safety: culture; leadership and support; risk management systems; reporting; communication with patients; sharing lessons; and implementing solutions. It was suggested that the best way to reduce errors was to tackle underlying systems failures rather than take action on individual members of staff. More recently *Creating a patient led NHS: Delivering the NHS improvement plan* (DH, 2005) and the Institute for Innovation and Improvement (www.institute.nhs.uk) provide safety advice and tools.

Royal Colleges have also issued statements, advice and learning materials in relation to patient safety, sometimes with the NPSA and sometimes alone. For example: *Advice on safer surgery* (NPSA & Royal College of Surgeons, 2005); *Safe foundations: junior doctors and patient safety* (NPSA & Royal College of Physicians, 2006); *Patient Safety curriculum statement* (RCGP, Jan 2006); and *Improving Patient safety: Risk Management for Maternity and Gynaecology* (RC of Obstetricians & Gynaecologists, Oct. 2005). Although none of these sources specifically relate to undergraduate medical education, the contents are influential via clinician teachers.

Curriculum Theory

Although recent general literature has tended to emphasise systems and culture and downplay the role of the individual (Waring, 2007), educational writers have concentrated on both organisational factors and individual responsibility (Mazor et al, 2005). A key issue is whether teaching about patient safety should be implicit or explicit in the curriculum. If it is implicit, the important question is whether students develop the appropriate professional attributes. Pilpel et al, (1998) and Lester & Tritter (2001) suggest that the history and tradition of medicine has resulted in a professional socialisation into medicine, with ways of thinking which deny uncertainty, tolerate and conceal mistakes and maintain the 'exclusivity of professional judgment' (Lester & Tritter p. 855). Walton (2006) is sceptical that changes in patient safety learning can occur without understanding the hierarchies and power relationships which exist between teacher and learner, and Lempp & Searle (2004) propose recognition and reform of the hidden curriculum. Some writers suggest that activities which encourage team work (Firth-Cozens, 2001), communication (Halbach & Sullivan, 2005) and reflection (Aron & Headrick, 2002; Howe, 2002) would improve patient safety.

Explicit patient safety content as topics, modules and assessment are suggested by several writers – Glavin & Maran (2003), Sandars (2006) and Stevens (2002). Hamilton (2000) recommended 8/9 curriculum topics based on the 1992 Australian study of error, (also Walton & Elliott, 2006), while Wakefield et al, (2005) purport that the GMC guidelines do not give enough detail about patient safety education and propose that curricula should include: root cause analysis, reporting, human factor engineering and the involvement of patients. Jenner suggests teaching about risk assessment (2006) and Maxwell et al, would like student doctors to be taught more about drugs (2002, 2003). Some of these suggestions have been tried out and reported in the literature as detailed below.

Curriculum Practice

In terms of medical education, relatively little has been written on effective interventions for patient safety, but it can be assumed that the common types of error and contemporary NHS policy approaches would figure in a modern curriculum. Descriptions of patient safety teaching, and reports of research assessing the effectiveness of such teaching were found to be overwhelmingly accounts of post graduate teaching in the USA. The relevance of the postgraduate curricula to this study is that teachers of undergraduates may have experience of – or access to – this material and it may influence their own teaching. Evaluations may offer clues as to how successful similar teaching might be for undergraduates.

Several American examples of curriculum modules related to patient safety were found – for example the American College of Physicians Patient Safety leaflet (ACP, 2006); crisis resource management training for an anaesthesia faculty (Blum et al, 2004); a graduate medical education program for improving medical event reporting attitude and behaviour (Coyle et al, 2005); a curriculum for error prevention in emergency medicine (Croskerry et al, 2000); a patient safety Web-based education curriculum for physicians, nurses and patients (Hendee et al, 2005); and a comprehensive collaborative patient safety residency curriculum to address the ACGME (US Accreditation Council for Graduate Medical Education) core competencies (Singh et al, 2005).

Some evaluations of American patient safety curricula were also found. Blum et al (2004) reported that the crisis resource management course was highly rated immediately post-course and a year later, and Coyle et al (2005) said that they found improved attitudes and behaviour towards reporting. However, Mottur-Pilson (2006) in a large scale evaluation with 7,300 interns who trialled patient safety modules for *An Ambulatory Care Curriculum for Advancing Patient Safety*, found immediate improvements in attitudes but mixed results after six months and suggested further studies to concentrate on the practical usefulness of patient safety concepts and a move away from attitude and behaviour questions.

In the UK, curricula or teaching modules for postgraduates which include references to patient safety have been produced by the NPSA and the Royal Colleges (see above). In particular the Foundation Years curriculum (for the two years after graduation) has patient safety as a core competency and gives very specific examples including some relating to infection control.

Papers describing undergraduate patient safety curricula include those of Fulton (2004) and Holmes (2002) both from the USA. Halbach (2005) described and

evaluated a 4 hour curriculum teaching 3rd year medical students in the USA about medical error and patient safety. The evaluation used 535 before and after questionnaires, plus evaluations and surveys, and overwhelmingly the students reported that the course had been useful and had increased their confidence. Madigosky (2006), however, found that questionnaires completed one year after some patient safety teaching showed that not all of the immediate changes in knowledge, skills and attitudes were sustained.

Other papers describe teaching that relates to one particular element of patient safety education overall. For example Henderson et al (2002 & 2003) describe teaching of significant event analysis at a UK medical school and say that this encourages reflective practice and Nestel & Kidd (2004) say that students rated explicit teaching about written communication as “helpful”. Flanagan (2004) evaluated a crisis resource management course for final year students in Australia and reported positive findings, while Horsburgh et al (2005) also reported positive staff and student evaluations of a 2 day interprofessional learning course where root cause analysis was used. Case studies and simulation are frequently used methods (Battles & Shea, 2001; Croskerry et al, 2000; Flanagan, 2004; Degnan et al, 2006; and Satava, 2006).

Evaluation of curricula initiatives is very complex and most of those found relied on staff and student perceptions immediately after the teaching. Little large scale or long term evaluation of changes in knowledge, skills or attitudes was found. Some evaluations point out the limitations of this (Mottur-Pilson, 2006) and others suggest that the influence of the hidden curriculum needs to be considered as well as the formal (Madigosky & Headrick, 2006 and Wilson & Ayers, 2004).

Conclusion

Patient safety now has a very high profile on the health care political agenda and there have been many statements and policies published. Many of these relate to systems and organisation rather than education, and those that are educational usually refer to post-graduate training. Where statements have been issued about undergraduate education they have often been criticized as being too general and lacking in detail.

Until recently specific patient safety learning has rarely featured explicitly in the medical undergraduate curriculum. Students have learnt implicitly about “safe practice” while studying clinical topics. Some writers have suggested that the tradition of medical training and the power relationships between teacher and learner are not conducive to students’ learning about patient safety.

Papers have been published which suggest that some medical schools feel that curricula which include generic skills such as team work, communication and reflection would improve patient safety. In other schools, teaching related to specific aspects of patient safety is being introduced, for example: significant event analysis and crisis resource management. There is nothing yet in the literature about the “patient safety modules” that have started in a few of the UK schools and there are no large scale, long term evaluations of any patient safety teaching. Literature from the USA, however, suggests that these are vital to assess the effectiveness of patient safety curricula.

A review of the literature in relation to pharmacy education

Introduction

The code of ethics for pharmacists states: '*Pharmacists' prime concern, irrespective of their sphere of work, must be the wellbeing and safety of patients and the public*'. (RPSGB 2006a)

Over recent years, pharmacy as a profession has undergone significant change. In 2000, the Department of Health (DH) published *Pharmacy in the Future* (DH 2000b) which outlined pharmacy's contribution to the implementation of *The NHS Plan* (DH 2000a) also published in the same year. *Pharmacy in the Future* set several objectives for pharmacy, including enhancing the public's confidence in the profession, to be achieved by ensuring '*that professional education and training meets the needs of tomorrow's world*'. The document also claimed that implementing the programme would result in fewer patients suffering from adverse reactions or having to endure ineffective treatment because of inappropriate management of their medicines.

In 2004 the DH published the Chief Pharmaceutical Officer's report *Building a safer NHS for patients: improving medication safety*, which built upon the aims of the Chief Medical Officer's report, *An Organisation with a Memory* (DH 2000). The report identified education and training as an area to be addressed to reduce medication safety risks. Suggestions included joint teaching for medicine, nursing and pharmacy students, assessment by objective structure clinical examinations (OSCEs), the use of case studies of medication errors rather than didactic teaching and the development of a national framework for competence assessment in medication safety..

In April 2005 the new contractual framework for community pharmacy came into being. Under the new framework all community pharmacists are required to meet essential clinical governance requirements, including maintaining a log of patient safety incidents (at all stages of the medication process, not just dispensing) to be reported to the NPSA via the Reporting and Learning System (RLS). Pharmacists are also required to be competent in risk management including Root Cause Analysis and to demonstrate evidence of recording, reporting, monitoring, analysing and learning from patient safety incidents. Additionally each pharmacy must produce Standard Operating Procedures (SOPs) and have an identifiable clinical governance lead (PSNC 2004). Further policy developments include the introduction of pharmacists as supplementary and independent prescribers and the creation of the roles 'Pharmacist with a special interest' and 'Consultant Pharmacist'.

Undergraduate pharmacy education

Since the 1970s, the RPSGB has played an influential role in the development and direction of pharmacy undergraduate education, through the establishment of a pharmacy degree accreditation process (Wilson et al, 2005). Before 2002 RPSGB accreditation was based upon the meeting of specific requirements outlined in an indicative syllabus. Since this time, new criteria for the accreditation has been adopted by the RPSGB, in the form of 50 outcome criteria, which has now replaced the indicative syllabus as the obligatory requirement of accreditation, although the

provision of an indicative syllabus is still maintained (RPSGB 2002). Consequently, this criteria provides the foundation for all 25 UK School of Pharmacy's undergraduate curricula. RPSGB degree accreditation takes place every 5 years.

The RPSGB has recently commenced a large-scale review of pharmacy education and training in the UK, which will focus on:

- setting policy for post registration education and revalidation (including registration policy relating to advanced/specialist practice)
- reviewing education standards and quality assurance systems
- developing an implementation programme (RPSGB 2006b)
- Curriculum Practice

Wilson et al (2005; 2006) conducted the first comprehensive review of teaching, learning and assessment methods of UK Schools of Pharmacy in 2004. Unsurprisingly they found that the RPSGB accreditation process was the main external driver for curriculum design and found little evidence that changes outside the sector of pharmacy were a driver for curriculum development. Wilson et al therefore concluded that pharmacy education development was insular from other health care professions. Approaches to teaching and learning were also found to be relatively didactic and dependent on formal lectures and practicals with the main emphasis of the MPharm being science rather than practice or clinical skills.

Research by Corbo et al (2006) found that fourth year pharmacy undergraduate students at Brighton University performed poorly when assessed on their clinical skills using OSCEs. Students were found to perform poorly in the areas of calculation, patient problem and resolution and doctor problem and resolution. They conclude that poor performance may be associated with lack of clinical exposure and suggest that OSCEs could be used as a diagnostic tool, identifying the students' strengths and weaknesses to guide student learning.

As the profession of pharmacy has become more patient-focused authors have suggested that pharmacy undergraduates need to have more exposure to patients in their education (Shah 2004). James et al (2001) found that a simulated patient programme significantly increased students' perceived confidence in terms of conducting a patient consultation.

Ashcroft and Hall (2006a; 2006b) examined students' experiences and views of a reflective portfolio to support a module in prescribing and found that students were in favour of using these portfolios which they felt had bridged the gap between taught components of the course and practical elements, and helped them to reflect on their future training needs. Droege (2003) in the USA also argues that for pharmacy to truly fulfil a patient care role pharmacy curricula needs to teach reflective practice and adopt a problem-based learning (PBL) approach, as well involve collaboration with other healthcare professions.

More recently, the government's white paper for pharmacy stated that there was a need for more clinical experience to be incorporated into the MPharm degree and proposed the integration of the pre-registration training year into the MPharm (Department of Health 2008). Research by Katajavuori et al (2006) in Finland, examined the role of compulsory practical training in pharmacy education, and

indicated that this training was important for developing interaction skills, learning routines, linking theory with practice, applying knowledge and understanding the significance of theoretical knowledge.

In 2009, the RPSGB launched the 'Pharmacy Practice Framework' (RSPGB 2009) a guidance document which outlines the core roles and activities expected of a newly qualified pharmacist. The document aims to inform the development of the undergraduate curriculum and pre-registration training standards. The roles described include, securing the safe use of medicines; developing and maintaining quality systems; promoting the safe use of medicines by patients; identifying and preventing practice errors/omissions, unsafe practices and professional misconduct; and minimising, managing and reporting errors and omissions.

Patient safety in the curriculum

Green et al (2001) surveyed a random sample of hospital pharmacists in the UK in order to investigate their attitudes to adverse drug reactions (ADR) reporting and the 'Yellow card scheme' ¹. Three quarters of the sample felt that it was their professional obligation to report ADRs, but almost half were unclear about what should be reported. Green et al found that education and training had a significant influence on the reporting of ADRs by hospital pharmacists.

Following on from Green et al's findings, Cox et al (2004) conducted a study examining the extent of ADR and yellow card scheme teaching in schools of medicine and pharmacy in the UK, by surveying heads of all undergraduate medical and pharmacy schools. Cox et al argue that previous research has also shown a lack of understanding amongst the medical profession regarding ADR reporting as well as amongst pharmacists. The authors found that nearly all the respondent schools covered the yellow card scheme in their curricula, but fewer schools of medicine included the scheme in their course assessments than the schools of pharmacy. Fewer than half of both schools were found to provide students with a guide to reporting ADRs. The survey also found a low use of external speakers for ADR education and the authors recommend that the MHRA increase their involvement in undergraduate education for the healthcare professions.

Ashcroft et al (2004) surveyed undergraduate pharmacy students at the University of Manchester to find out their views regarding the likelihood of reporting patient safety incidents occurring within community pharmacy. The survey employed a range of hypothetical scenarios describing the behaviour of a community pharmacist. Respondents were asked to imagine they had witnessed the scenario and were asked whether they would report the incident within the pharmacy. The study found that overall the students were unlikely to report incidents that they witnessed occurring within community pharmacy. Unsurprisingly, students were unlikely to report an incident if it led to a good outcome and more likely to report if it led to a bad outcome for the patient – but reporting even in these bad patient outcome situations was still found to be low.

¹ A spontaneous ADR reporting scheme administered by the Medicines and Healthcare products Regulatory Agency (MHRA) and Committee on Safety of Medicine (CSM). First introduced in 1964 and open to doctors, dentists and coroners. Hospital pharmacists were included in 1997, followed by community pharmacists in 1999 and nurses in 2002.

In the USA Johnston and Latif (2002) investigated the quantity and quality of medication error instruction within pharmacy education curricula, by surveying school of pharmacy Deans. They identified a lack of standardisation concerning medication error curricula across the schools, with some schools failing to include components such as human error, medical error and root cause analysis which the authors classified as core domains of medication error education. Johnson and Latif conclude that their findings indicate that there is a need in the USA for a minimum level of medication error instruction to be standardised across the schools.

Also in the USA Sears and Generali (2005) surveyed students from nine Schools of Pharmacy to determine their knowledge and ability to report ADRs. They discovered that the students were familiar with ADRs and reporting systems through the curriculum. However, they note that there is further opportunity to increase students' exposure to this area and that schools of pharmacy should seek to strengthen education. Jackson (2004) describes a course designed in the USA to encourage students to acquire the knowledge and skill to decrease medication errors in pharmacy. The course consisted of a classroom-based component and a group project involving assignment to either a hospital or community pharmacy setting. A student attitudinal survey found that overall students' awareness of the impact of medication errors, their knowledge of how to reduce error, their ability to identify error and ability to implement procedures to reduce errors, had all increased.

Conclusion

In general, there is a paucity of literature concerning patient safety within pharmacy education. The literature in existence and outlined here tends to focus on awareness of ADRs and reporting procedures. Overall the tone of the literature suggests that greater emphasis should be placed on patient safety in the pharmacy curriculum; that an optimum balance between science and practice needs to be found; that pharmacy students need more exposure to clinical practice in order to refine their clinical skills; and that teaching methods appropriate for these aims need to be employed.

A review of the literature in relation to physiotherapy education

Introduction

In the UK, physiotherapy developed out of nursing at the end of the 19th century and became a distinct profession around 1944 when the Chartered Society of Physiotherapy (CSP) was formed. Core Standards of Physiotherapy Practice are agreed by the CSP (CSP 2005), and operate in conjunction with Standards of Proficiency set by the Health Professions Council (2005). The CSP also works with the QAA to agree on the academic status of physiotherapy qualifications. Since 1976, physiotherapy has been accessible as a degree level qualification. Physiotherapists can practice autonomously, without reference to medical practitioners.

In 2005, the CSP produced an information paper for its members on patient / client health and safety which drew out key principles underpinning professional conduct in this area, and identified standards relating to: patient information, treatment delivery, evaluation and environment, equipment and quality assurance and clinical

governance, including risk management. The importance of clinical supervision is highlighted.

Physiotherapy and patterns of education

Physiotherapy is a health profession concerned with promoting and maintaining the movement needs and potential of the individual. It is perceived internationally as playing '*an essential role in the health care system*' (Higgs et al, 2001). Education programmes vary around the world, with doctoral programmes in some parts of the USA and 2 or 3 year diplomas in many countries. In the UK the profession became an all graduate entry profession in 1992. Regulation also varies around the world, although in many countries governmental regulation is supplemented by professionally led standards of practice. National registration standards are themselves seen as a mechanism for patient safety, through maintaining and monitoring codes of practice and clinical standards.

Hunt et al (1998) examine the impact of the move from vocational to graduate level education. They suggest that rather than encouraging thinking and problem solving skills, educators often focus on technical skills. Whilst technical skills are crucial, physiotherapists need skills in problem solving, creativity and innovation. They indicate that curriculum structures can be used effectively to promote integrated teaching and learning, and stress the importance of assessment in driving learning. The importance of learning in the clinical environment is also emphasised.

Crosbie et al (2002), in an editorial about the sustainability of undergraduate education for physiotherapy, discuss the overall growth in knowledge needed by current graduates compared with those of 30 years ago, and look at the implications for levels of clinical competence, as well as considering – In the context of increasing globalisation – pressures to integrate other countries' curricula into one's own to maintain maximum employability. They suggest that in the future it will be important to identify core competencies and attributes for graduates. Anderson and Towell (2002) discuss the need to educate the new generation of physiotherapists to '*a system of evidence based practice that looks for potential error as part of the approach to practice*' (p9), and indicate the need to ensure that learning about patient safety for physiotherapists is not isolated from the complex healthcare environment, colleagues and patients.

Curriculum theory

Walton and Elliott (2006), writing about medical education to improve safety, suggest that education about safety is best undertaken in the workplace. The way in which clinical education is delivered has been explored by some authors, and may impact on the safety of practice. Lekkas et al (2007) in a recent systematic review of research on different models of clinical education for physiotherapy conclude that no model is superior to another. Nemschick and Shepard (1996) examined the impact of the introduction of a 2:1 student clinical educator model, using three case studies. They identified the need to ensure that each student had opportunities to feel safe in trying new procedures, and issues for the educators in this model of teaching, because of their increased level of responsibility for making sure that students were safe. Clouder and Dalley (2002) examine ways of 'fine-tuning' the preparation of student physiotherapists for safe practice, by the development of a work based 'caseload management module', in which students

are given increased responsibility for a caseload of patients while still under supervision, with students reporting increased confidence on completion. Making sure that students are safe practitioners also requires effective assessment. Cross et al (2001) discuss the assessment of students' clinical practice, highlighting clear differences in educators' ability to discriminate between differing levels of student performance and suggesting that videos of student practice may be beneficial in comparing judgements.

Occupational health and safety

A group of papers looked, in effect, at work related risks to physiotherapists. These fell principally into two types: ethics and consent issues often related to the risk of litigation; and risk of injuries to the practitioner arising in a variety of ways.

Patient behaviour can present dangers for the practitioner. Sisola and Baker (2006) looked at ethics and the management of risk with patients impaired by alcohol or drugs. Arriaga (2004) considered issues of liability and explored risk management using a case scenario.

In the early years of physiotherapy practice, occupational injury rates can be quite high. Potter and Jones (2006) used qualitative methods to explore entry-level physiotherapists' strategies to lower occupational injury risk in physiotherapy. They looked at responses to a variety of work based scenarios – set in private practice – provided under exam conditions by 79 final year students. They suggest that these highlight the need for educational institutions and employers to address occupational health and risk factors in physiotherapy, including incorporating education on prevention and self-management strategies in different work settings.

Interprofessional learning

Several authors (Rubin and Leeder 2005, Walton and Elliott 2006) suggest that education for effective team working is a crucial plank of any approach to promoting patient safety. Verma et al (2006) indicate that core competencies for professions can be brought together to form an effective basis for the clarification of performance standards and expectations for future learning. Failures of communication, stress (and consequent effects), and tasks being left undone are among the issues arising when interprofessional working is not satisfactory. Lumague et al (2006) describe students' perceptions of the benefits of a particular workplace based IPE experience in a Canadian acute care setting. Reeves et al (2002) described an evaluation of an interprofessional training ward placement in which students cared for orthopaedic and rheumatology patients. Students felt that the experience was helpful in preparing them for future practice.

General Patient Safety

Five modalities / approaches to physiotherapy practice are highlighted by CSP (2005) as particularly important in relation to health and safety. Papers describing research and educational initiatives in relation to each of these are discussed below.

1. Patient Handling (including facilitation of movement and functional capacity)
Stiller et al (2004) looked at the safety of mobilising acutely ill in-patients. 31 patients in an intensive care unit and previously screened (Stiller and Phillips 2003) as suitable received 69 mobilisation treatments. Although mobilisation resulted in

significant increases in heart rate and blood pressure, the authors concluded that ICU patients screened as suitable were able to be safely mobilised. Stiller and Phillips' 2003 paper outlines the major safety issues to be considered when mobilising acutely ill people, summarising both objectively measurable and subjective factors in a flowchart for practitioner use.

2. Hydrotherapy (involving the use of pools, heated water etc)

Risks in hydrotherapy treatment may include physiological problems, drowning and water-borne infections. The CSP produced a briefing paper (2001) on hazards, mainly aimed at staff managing hydrotherapy facilities but summarising some of the issues for patients as well. Cider et al (2003) studied the impact of an exercise programme in a temperature-controlled swimming pool. Exercise in warm water has been considered potentially dangerous in patients with chronic heart failure (CHF) due to increased venous return caused by the hydrostatic pressure. They found that physical training in warm water was well tolerated and seemed to improve exercise capacity as well as muscle function in patients with CHF.

3. Exercise therapy (for example following cardiac surgery)

Munneke et al (2005) describe a multicentre RCT to compare a two year intensive exercise programme with usual physiotherapy care for people with rheumatoid arthritis. Participants in the intensive programme showed greater improvement in functional ability, muscle strength and physical fitness than those receiving usual care. Adherence was high.

4. Injection therapies (for example anaesthesia / pain relief)

CSP in 1999 produced guidance on the use of injection therapies. This would normally take place in conjunction with a medical practitioner who would prescribe the drug involved. Exclusion criteria identified include the presence of infection; allergy to injectable drugs; coagulation disorders; recent trauma; or any sort of psychological overlay. Sidebotham et al (1997) examined the use of patient controlled analgesia in more than 6000 patients in New Zealand, and indicated that the risk of complications is very low.

5. Electrotherapy: (including Pulse Short Wave Diathermy, Ultrasound, Interferential Therapy, Transcutaneous Electrical Nerve Stimulation (TENS), Combination Therapy, Laser therapy and Biofeedback)

In 1997, the CSP produced a members' briefing on the safe use of electrotherapies. Shields et al (2002) explored the clinical and safety issues in the use of continuous and pulsed short wave diathermy by physiotherapists in 41 Irish hospitals in a postal questionnaire, concluding that there was an urgent need for comprehensive guidelines to ensure the safety of patients, operators and the general public. Partridge and Kitchen (1999) gathered self reports of adverse effects on patients arising out of electrotherapy in NHS hospitals in England and Wales. Burns, rashes and increased pain were reported in 87 cases, and general symptoms such as nausea and fainting in 98 cases. The largest number of events were associated with the use of interferential therapy. It was found that patients with neurological problems suffered particularly severe side effects. Further research was recommended.

Other clinical areas which need some consideration in relation to the education of physiotherapists about patient safety include respiratory care, managing and

preventing falls and interaction / communication with patients. Smith and Ellis (2000) review factors contributing to increased mucus secretion and impaired clearance and note that retained mucus will not present a problem for all patients. They discuss the efficacy of various physiotherapy interventions for airway clearance, and suggest that patients at risk should be identified so that appropriate treatment can be instigated as required. Wong (1999) reviews the evidence for the use of body positioning to improve oxygenation in mechanically ventilated patients with acute respiratory failure. Strong evidence supports positioning the affected lung superior to the other. Prone positioning is weakly but consistently supported. Skelton and Dinan (1999) describe a structured programme of exercise tailored to reduce postural instability. Brown (1999) selectively reviews literature on the use of exercise programmes to reduce falls by older people. She concludes that exercise interventions do reduce rates of falling, and that effective programmes last between 3-6 months. In addition, individual assessment of risk factors is associated with a decline in fall risk. Morse (2002) examines the principles of providing effective protective and preventive interventions in relation to falls. Robinson et al (2004) explored the effectiveness of physiotherapy intervention in decreasing the risk of falls. Communication has also been highlighted as an important area in patient safety. For example, communicating sympathetically and honestly with patients and families when things go wrong is a vital dimension of dealing effectively with errors (Vincent and Coulter, 2002). Potter (2003) explored optimising physiotherapist-patient interaction, looking at the perspectives of each group using nominal group technique, and then evaluating the impact of a patient centred training programme for a small number of physiotherapists. While the physiotherapists felt that the training was beneficial, her results were inconclusive in terms of measurable behavioural outcomes due to the small sample size.²

Conclusion

There is a great deal of literature about safe physiotherapy practice but relatively little about education for this. What there is tends to concentrate on how students learn safe technical skills principally from their supervisor on placement and by being able to have their own caseloads. It may be a feature of a relatively young all graduate profession that there are fewer papers about academic learning of risk assessment and management.

2

Search in relation to this section: A further search on Scholar Google and PubMed explored the additional combination of 'patient safety' with 'physiotherapy education'. Much of the literature identified emanates from Australian authors, and must be considered in relation to the varying health care systems and educational programmes discussed.

Chapter 3: Methodology

Aims and objectives

The aim of the study was to investigate the formal and informal ways pre-registration students from a range of healthcare professions learn about keeping patients safe from errors, mishaps and other adverse events (broadly known as Patient Safety).

The objective was to examine how 'patient safety' and 'problems around patient safety' are framed in 4 different professions (medicine, nursing, physiotherapy and pharmacy) across the academic, organisational and practice contexts:

Academic context

- To identify within the formal curricula explicit patient safety content for pre registration students
- To explore the relationship between planned curricula and taught elements of patient safety
- To describe the 'safety culture' of day-to-day academic practice.

Organisational context

- To identify within organisational documentation (eg guidelines and protocols) any underlying ethos related to patient safety
- To explore the organisational culture that students and newly qualified staff are exposed to

Practice context

- To examine and describe the practice cultures to which students and newly qualified staff are exposed.

Schein's (1985) definition of organisational culture was used:

The pattern of shared basic assumptions - invented, discovered or developed by a given group as it learns to cope with its problems of external adaptation and internal integration - that has worked well enough to be considered valid, and therefore to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.

We used the pragmatic definition that formal curriculum in patient safety relates to: (a) learning activities explicitly aimed at reduction of adverse events or (b) understanding of the circumstances which may lead to these, and (c) evidence of how to develop and apply knowledge, skills and attitudes that aim to protect patients against risk and error (Lilford, 2003).

Theoretical framework

Patient safety is often conceptualised in terms of the types of problems that arise – for example problems about patient management, devices, vigilance, systems, or drugs. Schon (1983) draws an important distinction between 'problem solving' and 'problem setting'. By thinking of problems in terms of seeking solutions rather than

questioning how the problem is framed etc, 'problems' become something fixed, concrete, definable, stable and independent of context. Consequently there is the potential for prescriptive progression towards solutions. This focus on problem solving (which Schon labelled as technical rationality) is found throughout health care literature. However, viewing formal learning as a solution to patient safety problems is likely to be of limited value for the following reasons:

- Learning is a process not an outcome
- As a process it is complex, theory dependent and disputed
- Learning cannot be viewed as being a concrete entity nor viewed as stable - just as 'safety' is seen as a dynamic entity, so is learning

For these reasons, to focus this study solely on formal learning would be of questionable value. We would also suggest that 'teaching', whether overt in the formal curriculum or tacit in the hidden curriculum, cannot be thought of as fully encapsulating 'learning'.

As knowledge can be viewed as the outcome of learning, this study looked at knowledge generation as it relates to patient safety. Eraut (1994) suggests that we learn from:

- formal planned education (undertaken in university or college or as part of ongoing studies) and
- 'informal' education (in all settings) which includes common ideas, ways of thinking, traditions, rituals and beliefs that are unwritten but form a part of our day to day life

When Eraut talks of knowledge he is not only describing information or book knowledge but also the knowledge that allows one to act in expected ways, to conform to social norms, to use instrumentation correctly and to know guidelines or procedures and how to action them. As knowledge is generated in different contexts, has different forms and different means by which its worth is validated, in focusing on knowledge generation this study considers the different contexts in which patient safety issues exist. Eraut (1994) describes three contexts where 'knowledge' is generated: *the academic, the organisational and the practice contexts*.

- 1) The *academic* (university or college) based upon written theories and principles which are taught and tested for in exams.
- 2) The *organisational* (management or policy) based upon agreed agendas and policies.
- 3) *Practice* (day to day working) based upon individual practitioners' experience and knowledge, accepted ways of working, ritual and tradition.

What is viewed as useful or valuable knowledge in one context may be different in another. This study was designed and structured around Eraut's three contexts. In this way the study was linked to existing theory and will also help challenge and develop that theory.

Ethics and Governance

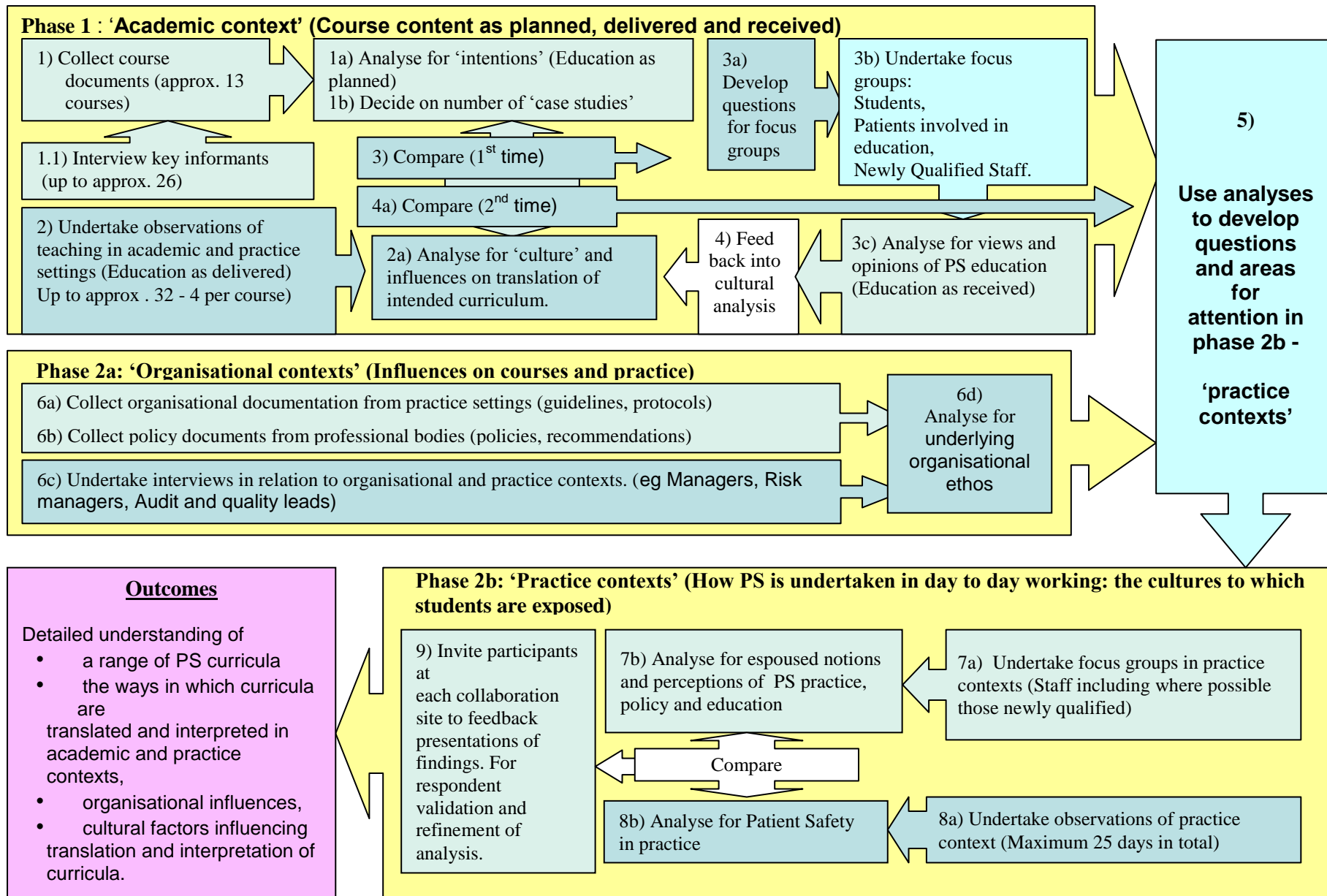
Main ethical approval was obtained from Newcastle and North Tyneside Local Research Ethics Committee 2, study reference number 06/Q0906/97. Each site (n= 5) also obtained site specific approval from local ethics committees and where necessary relevant university committees. In order to maintain as far as possible the anonymity of the courses the specific ethics committees and course sites are not named. At all stages informed consent was obtained from participants via information sheets and written consent forms. All participation was voluntary.

Design

A two stage, phased design using multiple qualitative methods was employed (see Figure 1 Overall study design).

The overall approach drew on 'illuminative evaluation' (Parlett and Hamilton, 1977) which is concerned with exploring, describing and interpreting rather than measuring and predicting. 'Illuminative evaluation' is based upon the belief that education programmes and courses are transformed during delivery and implementation, and that it is the 'unofficial' or informal social reality of a programme which needs to be investigated as well as its stated objectives or outcomes. This research strategy fits with the idea of knowledge contexts and informal and formal learning theorised by Eraut (1994).

Figure 1 Overall study design

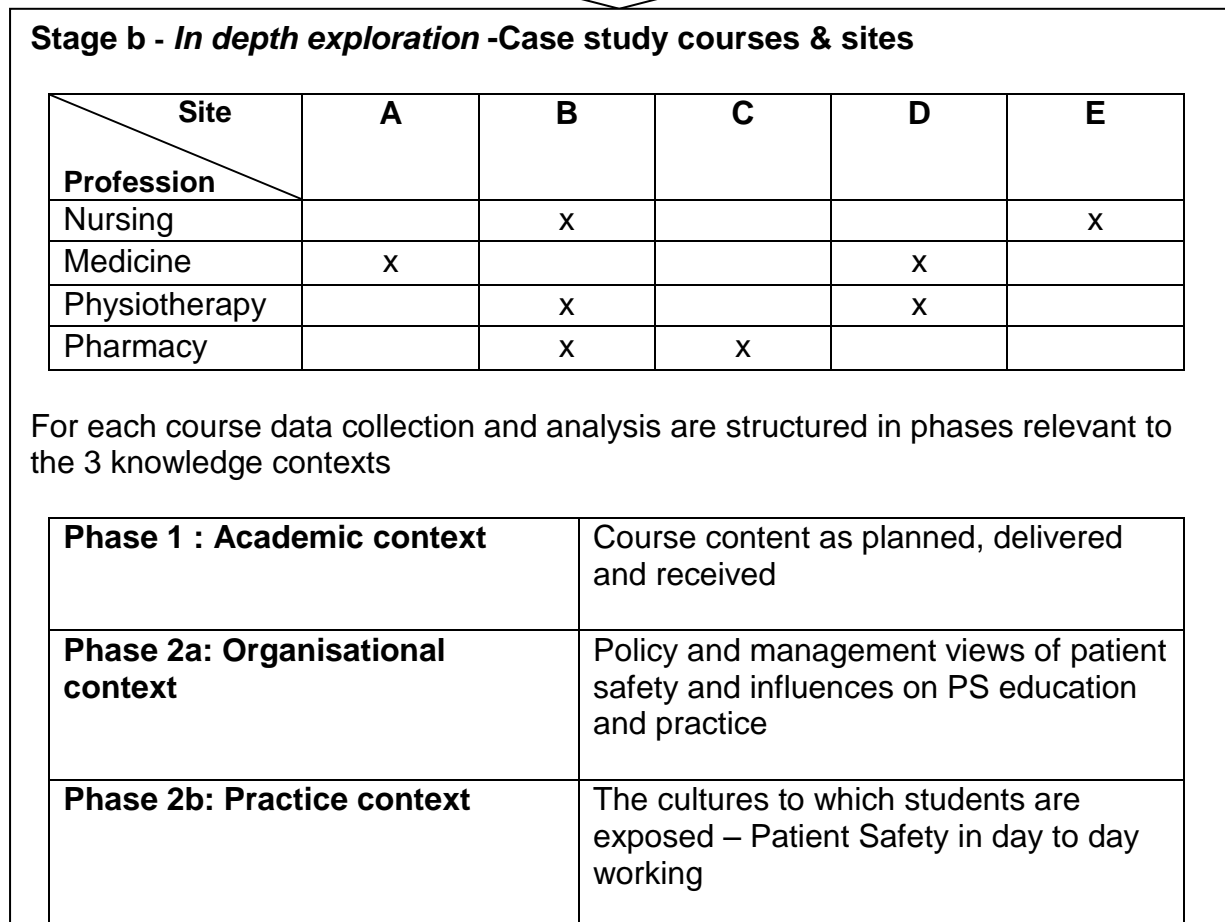
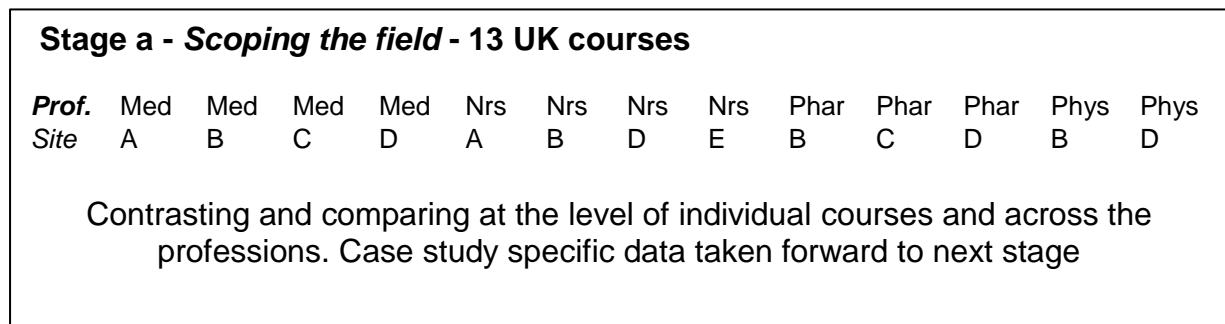


Stages

The study encompassed two stages (see Figure 1 and Figure 2):

- a. An overview of the Patient Safety curricula for 13 courses across the UK (course documents and perspectives of course leaders, or others influential in the curricula design and delivery)
- b. Detailed case studies (n=8) of pre-qualification /undergraduate courses for: Medicine, Nursing, Physiotherapy and Pharmacy (2 courses per profession).

Figure 2 Study stages a & b



Sampling

Stage a – A convenience sample of 13 validated pre-registration /pre-qualification courses (medicine 4, nursing 4, physiotherapy 2, and pharmacy 3) was used. The courses were based in five universities across England and Scotland.

Stage b – Eight courses (two per profession) were selected for detailed examination via case studies (see Figure 2). The courses (discussed and approved by the steering group and project team) were selected in order to:

- give a range of both traditional and innovative curricula
- be based in both old and new universities

Data collection and analysis - general

At each stage data collection instruments were designed, discussed, piloted and refined before use. Piloting of interview schedules was undertaken with people not involved in the study (See appendices for final versions). While standard schedules were used researchers were encouraged to allow respondents to introduce other issues they felt to be important.

All interviews, focus groups and observations were conducted by the research associate for the site. Interviews and focus groups were audio recorded and transcribed. Analysis frameworks and coding were drafted, tried, discussed and amended. Initial findings were discussed, challenged and dismissed or confirmed by the wider group after further searching of the data.

This process of validation took place by e-mail, local meetings, video and phone conferences and national data workshops.

TABLE 1 Participant numbers by data collection type, profession and course.

Data collection type \ Profession and site	Medicine		Nursing		Pharmacy		Physiotherapy	
	Site A	Site D	Site B	Site E	Site B	Site C	Site B	Site D
Academic context								
(1.1) Interviews with course leaders and key informants	3	2	2	2	2	2	2	2
(3b)Focus groups - Students (yr 2)	7	5	7	8	6	5	3	6
(3b)Focus groups -Students (Final yr)	3	8	6	3	2	8	7	7
(3b)Focus groups - Newly qualified staff	1	2	2	2	Community* 2	6	4	2
					Hospital* 2	6		
						Hospital NQS** 3		
(3b)Focus groups - Patients/ service users	4	8	3	3	NA	NA	2	2
Organisational context								
Interviews with professional leads and key managers	2	2	2	2	2	2	2	2
Practice context								
Focus groups - Staff	3	8	6	2	2	2	2	3

* MPharm degree students upon graduation are not qualified pharmacists and in order to practice are required to undertake a pre-registration training year in employment. Focus group participants for pharmacy are therefore graduates but not newly qualified staff. Given the nature of pharmacy practice which is split between the two very different working environments of hospital and community it was agreed that a focus group be undertaken with pre-registration students working in both environments.

** In addition to graduate focus groups, one focus group with newly qualified hospital pharmacists was conducted at site C.

Methods for Phase 1: Academic context

TABLE 2: Phase 1 data collection and analysis aims

Type	Sources	Analysis aims
Course documents	Including: validated curriculum documents, handbooks and module outlines	Curricular documents were analysed to: <ul style="list-style-type: none"> • Understand of the ways Patient Safety is represented in formal curricula, • Describe the formal 'intentions' of the courses, • give a picture of education as planned
Interviews	Course leaders and/or others felt by the programme leaders to be influential in the curriculum design and operationalisation	To gather or clarify information about the curriculum and develop an understanding of their conceptualisation of patient safety (see Academic context interview guide)
Observations	Academic practice ie lecture, seminars	To: <ul style="list-style-type: none"> • Give a picture of education as delivered and identify ways in which the curriculum is translated into 'teaching' practice. • Allow insights into the 'academic culture' regarding patient safety to be developed through: • exploring the way the subject is thought about and viewed • gaining insights into the 'hidden curriculum'
Focus groups Up to 8 participants per focus group	Students who had just gone into their second year, and those in their final year Patients /service users: involved in the delivery of the formal curriculum Newly qualified staff : who graduated in the past 2 years	To develop: <ul style="list-style-type: none"> • insight into how education related to patient safety is received • descriptions of experiences of patient safety education • an understanding of how patient safety is conceptualised by different groups • views regarding ways to learn about patient safety and ways in which patient safety education could be improved

Course documents: Sampling and data collection

Course/programme directors and equivalents for the 13 courses were asked:

- for an overview and description of course structure and organisation
- which parts (sessions, modules) of the course programme they viewed as relating to patient safety.
- to provide copies of any documents which related to PS within the course.

Researchers collected the documents identified and searched university websites for additional information. The range of documents collected varied across the courses.

Documentary analysis

Two researchers independently analysed the data. A first level analysis was undertaken using an agreed framework covering 3 areas:

- Curricular contextual information
- Curricular philosophies and delivery methods
- Patient safety specific data

A checklist of relevant concepts was drawn up from the literature and agreed by the research team. Documents were then searched using Microsoft Word and the software *Nvivo* for the following terms: Adverse events; Critical incidents; Error; Failures; Harm; Mishaps; Mistakes; Near misses; Negligence; Risk (risk assessment); Safety (safety cycles); Safe practice; Serious events; Significant events.

Course leader interviews: Sampling and data collection

Project team members identified course/programme directors and equivalents who were invited to take part in a short interview and were also asked to identify another appropriate staff member (eg module leader, lecturer, tutor). Two interviewees were selected for each course. An interview guide and analysis framework were developed and employed (see *Data Collection and Analysis – general* above and Appendix 2).

Observations: Sampling and data collection

For each case study course, teaching sessions specifically related to PS (as identified in the course documents and by those in charge of the education courses) were sought for observation. The following aspects were cross mapped in order to identify sessions:

- topic areas identified in the documentary analysis (eg moving and handling, communication, infection control, drugs etc)
- interviewees' perceptions of where PS is in the course
- issues relevant to particular professions (eg moving and handling sessions were neither relevant nor available in Pharmacy)
- what was available in the dedicated time slot March-May 2007

It was agreed that up to four sessions be observed per course; however, the number of academic observations varied depending upon availability of appropriate sessions during the time slot (see TABLE 3 below). Researchers used an agreed framework, took brief notes during observations and wrote up more in-depth notes immediately following the observation period.

TABLE 3: Academic observation data collection

Site and course	Session title / topic			
Medicine Site A	Clinical Procedures: Intravenous Therapies (yr5)	Therapeutics (yr5)	Clinical Procedures: Intimate Examination (yr2)	Clinical and Professional Risk and Medical Informatics (yr4)
Medicine Site D	Sharps, vene puncture, blood transfusions (yr2)	Safe Prescribing (yr3)	Safe Lifting and Patient Handling (yr1)	Consultation skills: Conveying risk (yr4)
Nursing Site B	Injection technique (yr1)		Moving and handling (yr1)	Medical devices (yr1)
Nursing Site E	Medication administration (yr2)	Intro to drug calculations (yr2)	Manual Handling (yr1)	
Pharmacy Site B	Dispensing exam (yr2)	Prescription writing and Clinical Management Plans (yr4)		
Pharmacy Site C	Aseptic dispensing (yr3)	Prescribing (yr4)	Orientation to pharmacy practice (yr1)	Inter-prof. studies (yr4)
Physiotherapy Site B	Intro. weight training & resistance (yr1)	Introduction to TENS (yr1)		
Physiotherapy Site D	Risk assessment (yrs 1 & 3)	Infection Control (yr1)	Placement Preparation (yr1)	

Observation analysis

An analysis framework was developed based upon the data collection template (see Appendix). Researchers looked at: implicit and explicit content; comments made by ‘teachers’; staff and student behaviours; and other issues which appeared relevant to explicit and implicit messages regarding patient safety.

Vignettes (about half a page) were developed for each session as a way of condensing and aggregating descriptive data and researcher interpretations. In order to ‘validate’ the vignettes, site leads cross checked them with the original observation notes.

Focus groups: Sampling and data collection

For each course one focus group was undertaken with the identified groups. Recruitment took place as outlined below.

TABLE 4: Focus group recruitment routes

Group	Recruitment route
Students	Via university contacts for the specific courses.
Newly Qualified staff	Via university records departments: lecturers; personnel departments in local NHS Trusts.
Patients/service users	Via university contacts for the specific courses.

As it was not always possible to recruit the preferred number of participants, in some cases paired discussions were used (See TABLE 1 on page 36 for numbers recruited). Focus groups lasted up to one hour. Participants were given a voucher in appreciation of their participation, refreshments were available and travel expenses paid where appropriate.

One focus group was undertaken by telephone due to geographical locations and difficulties in arranging mutually convenient times.

Given the nature of pharmacy practice, which is split between two very different working environments of hospital and community, it was agreed that a focus group should be undertaken with pre-registration trainees working in both environments. As no patients were involved in the pharmacy courses those focus groups were not applicable.

Drawing on the previous phases and discussions, focus group guides were developed and employed (see Appendix 5, Appendix 6 and Appendix 7).

Focus group analysis

Initial analysis was undertaken by the researchers using the focus group schedules as a framework, but also allowing other emerging issues to be incorporated. Thus topics of importance to participants were allowed to emerge alongside an analysis of views and opinions regarding the ways in which PS education is planned and delivered.

Methods for Phase 2a: Organisational context

Sampling: organisations

At each site one NHS trust providing placements for a large proportion of students (mainly acute Trusts) was identified as the focus for organisational context. However, it was agreed that one course with a large community component also included a primary care Trust.

Data collection included:

- Organisational documents (related to patient safety)
- Interviews with organisational representatives linked to patient safety issues

The two types of data were collected and analysed concurrently.

Organisational Documents (Step 6a&b)

Organisational documents were collected and analysed in order to provide a snapshot of the organisations' formal approach to patient safety, and develop an understanding of the organisations' ethos and philosophy regarding PS (to which students and newly qualified staff may be exposed).

It was agreed that up to 10 documents per organisation (ie per site, not course) be collected. This number was felt to be broad but manageable.

Document collection was guided by the 5 key areas identified in the previous stages of the project – medicines; infection control; moving and handling; risk management; and communication³ (see TABLE 6). A series of overarching areas were also agreed as relevant to patient safety and education and these included:

- Complaints procedures
- Whistle blowing policies
- Critical incidents and incident reporting policies and procedures
- Quality improvement, clinical governance
- Staff Induction materials

Organisational context interviewees were also invited to nominate documents and access was via the interviewee, a contact person and/or the Trust website.

The actual documents collected and analysed for each site are shown in TABLE 5 and TABLE 6 below.

³ As agreed at project team and steering group meetings in September 2007

TABLE 5: Generic organisational documents by site

Site	Site A	Site B	Site C	Site D AT = Acute Trust, PCT = Primary Care Trust	Site E
Topic					
Governance	NHS ***clinical governance strategy 2005 until 2008				
Quality improvement	Guidance for NHS *** Management Teams on Quality Improvement Programmes January 2006	**** NHS Foundation Trust Whistle blowing policy	Public interest disclosure policy – whistle blowing. 2006	AT – whistle blowing policy	Risk management policy and strategy 2005-2008 Policy for prevention of slips, trips and falls
Incident/accident reporting	Quarterly critical incident report for July - September 2007 with an example from the local Head and Neck section (<i>recommended by interviewee</i>)	Operational policy and procedure for reporting and management of accidents and incidents	Trust incident reporting policy and procedures 2006	PCT – Serious untoward incidents policy PCT – Openness policy	Serious untoward incidents and notifiable issues reporting policy & procedure Adverse incidents: reporting, investigation and learning policy and procedure
Complaints	National procedure for comments and complaints: Can I help you? Learning from comments concerns and complaints (NHS ***)	**** NHS Foundation Trust Complaints Procedure	Complaints Policy 2006		Policy for handling complaints
Induction material relevant to : Governance /Quality improvement	*** Way Induction Pack (staff <u>induction</u>)	Quality and clinical governance presentation used at staff <u>induction</u>	Induction Policy 2006	AT – staff induction policy	
Specific / suggested by interviewee	DOTS (Doctor Online Training System) overview	Manchester PS framework: reflections on the organisational culture			Being open – policy for communicating PS incidents

TABLE 6: Topic specific organisational documents by site

Site	Site A	Site B	Site C	Site D AT = Acute Trust, PCT = Primary Care Trust	Site E
Topic					
Drugs / medicines: prescribing and administration	NHS ****“The safe administration of all <u>medicines</u> in the NHS **Primary and Community division”	The **** hospitals <u>medicines</u> policy	Pharmaceutical care standards 2007	AT – medicines policy PCT- medicines policy	
Infection control	NHS quality improvement *** HAI 2004(pdf), Hard copy of NHS Quality Improvement ****“ Draft Standards 2007	<u>Infection control</u> committee hand hygiene policy	Infection prevention and control 2007	AT – infection prevention & control reports 05/06 programme 06/07 PCT - Standard procedures, Hand hygiene	*
Moving and handling	<u>Interim Manual Handling Policy</u> for NHS *** 2007	<u>Moving and handling</u> policy 7	Manual Handling policy 2003	AT – manual handling policy	*
Risk assessment /management	Risk management standards NHS ***	The *** NHS Trust Risk management strategy	Risk management and safety strategy 2004	AT - risk management strategy 05 report 05/06	

* At this site these documents were not available on the website or through clinical tutors. The documents were repeatedly requested from Trust contacts but were not made available.

Organisational Interviews (Step 6c)

Interviews were undertaken with two organisational representatives per case study course in order to:

- Identify the organisation's views of PS
- To gain some insights into the organisational culture regarding PS and 'cultural' influences on PS education and PS practice

Participants were drawn from the organisations identified (see Sampling Organisations above)

At each site one NHS Trust providing placements for a large proportion of students (mainly Acute Trusts) was identified as the focus for organisational context. However, it was agreed that one course with a large community component also included a Primary Care Trust.

Data collection included:

- Organisational documents (relating to patient safety)
- Interviews with organisational representatives linked to patient safety

The two types of data were collected and analysed concurrently. It was agreed that where possible one interviewee would be a Professional Lead (congruent with the courses being studied) and the other a key member of staff with a patient safety remit.

An interview schedule was developed based upon the aims of this part of the study and consideration of areas emerging from the academic context. The schedule was piloted with a Trust manager not participating in the study and discussed, amended and agreed by the researchers and site leads. Interviews lasted approximately 30 minutes.

Organisational context data analysis

A first level analysis of documents was undertaken by researchers using an initial framework developed from the aims of this phase and researchers' initial thoughts regarding document contents. Further analysis was undertaken by site leads and the wider team.

Initial analysis of the interviews was undertaken using a framework based on the interview schedule (See Appendix 10: Analysis framework for organisational interviews) with additional codes added as necessary. Coding from 2 sites was circulated and discussed then further coding was undertaken across all sites. Interview transcripts and respective coding were then distributed to the wider project team for comment. A data workshop was held and ongoing analysis discussed. Issues and ideas arising from the data workshop were fed back into the analysis

Methods for Phase 2b: Practice context

Sampling: Practice areas

In order to focus the practice placement observations and allow some cross comparison of courses and professions, two specialty areas were identified for each professional group. The following aspects were cross mapped in order to identify areas:

- areas which play a significant part in the provision of practice placements
- specialties felt to play a significant part in the training of the specific profession
- the potential to witness practice pertaining to topic areas identified in the previous stages (eg moving and handling, communication, infection control, drugs etc)
- where students were on placement during the dedicated time slot.

TABLE 7 below shows the specialty areas selected:

TABLE 7: Specialty areas for practice observations

Professional group	Specialty areas identified
Medicine	Acute hospital A&E GP surgery Acute hospital ward
Nursing	Acute hospital wards Surgical ward Medical ward
Pharmacy	Community pharmacies Hospital pharmacy Acute hospital ward
Physiotherapy	Acute hospital Neurology wards Acute hospital Respiratory wards

Phase 2b Data collection included:

- Observations of practice areas while students were on placement
- Focus groups with staff

Observations (Step 8a)

Observations of practice placements were undertaken in order to obtain a snapshot:

- of the ways in which PS is undertaken in day to day working
- of the student experience while on placement,

and to develop insights into the 'practice culture' to which students are exposed.

It was agreed that up to five periods of observation be undertaken for each of the 8 case study courses (depending upon the duration of each observation). However, the number and duration of observations varied depending upon student availability and agreement with practice (see TABLE 8 below).

TABLE 8: Practice observations by site, type and duration

Site	Location	Number of observation periods	Hours
A: Med	Hosp	1	4
	GP	3	2.15
			2.30 3.15
D: Med	Hosp (A&E)	2	3 2
	GP	1	7
Total			24
B: Nursing	Medicine	1	4.30
	Surgery	1	8.30
E: Nursing	Surgery	2	4 2
Total			19
B: Pharmacy	Hosp	2	3 3
C: Pharmacy	Hosp	2	3 3
	Community	1	2.30
Total			14.30
B: Physio	Neuro	1	8
	Resp	1	8
D: Physio (+1OT)	Neuro	1	3
	Resp	2	2 4
Total			25

An observation schedule was developed which focused on interaction between students and environment (educator, others and physical environment). The schedule also drew on the aims of this part of the study, the topic areas emerging from previous stages and experience in the academic observations.

It was stressed that the observations were not judging the quality of teaching or care.

Observations were written up together with researcher's reflective notes and analysed to give a picture of day to day PS practices, educational experiences and the cultures to which students are exposed.

An analysis framework covering descriptions of interactions, educational experiences and topics, and initial interpretations was developed. The initial analysis was refined by the wider team.

Focus groups (Step 7a)

Focus groups were undertaken in order to:

- develop a picture of day to day PS working practice as viewed by qualified staff;
- obtain views of PS education and how it is seen to relate to day to day working;
- explore cultural influences on PS practice and education in the work place.

For each course, 1 focus group of up to 8 participants was undertaken with practice staff that had regular contact with, or were involved in teaching/supervising students on placement. Where possible staff in the areas observed were invited to participate. TABLE 1 shows details of the participants recruited by profession and site.

An initial focus group schedule was developed based upon the aims of the stage and findings from the prior stages. The schedule was commented on by the wider team, piloted and amended accordingly.

An analysis framework was developed drawing on the focus group schedule. During initial analysis researchers also incorporated other emerging issues. The evolving framework, initial analysis and the data collected were then discussed, challenged and confirmed at a data workshop before integration of the focus group and observation data.

Integration of findings

Throughout the project an iterative cycle of analysis took place with data collection and analysis informing each other and subsequent phases and stages. A series of data workshops were held throughout the life of the project. During these meetings the various data sets and analyses were discussed, challenged and developed into preliminary findings confirmed by those present. Data and initial findings were also shared with the wider team, usually on a disciplinary or site specific basis.

In this way each part of the study was incorporated in the following. However, care was taken not to overplay the importance of initial findings and remain open to emerging issues within and across each data collection

episode, each participant group and each context. Findings were considered, debated and discussed at three levels: by course, by profession and across professions. Towards the end of the project, there were secondary analyses to bring together different phases and review emerging key findings. The wider project team played an important part in the consideration and integration of the findings.

Section B: The formal and informal ways students learn – the case studies

Chapter 4: Medicine

Overview

In the project as a whole, four medical schools were included, of which two were selected for detailed case studies because of their very differing histories, settings and course characteristics. The four courses show a range of age of institution, use of problem based learning, extent of integration of theory learning with clinical placements and different styles of placement based learning. All have clinical academics on the faculty who are active in patient safety research or education, which may make these schools likely to articulate safety issues more clearly than the 'average'. All of them emphasised that patient safety is not a single construct, and that it is a professional goal rather than a discipline-based subject.

Site outlines

Site A (detailed case study) Site A is one of the oldest Medical Schools in the UK. It is located in a large city surrounded by smaller towns. The local population is primarily urban and relatively affluent but with a significant deprived minority. The local NHS operates as a single integrated system employing 28,000 staff with a unitary health authority overseeing the planning and delivery of primary, community and acute services. Services are focused around 3 main hospitals, a few associated smaller specialised hospitals and four community health partnerships. There are long-established links to local universities and colleges, in particular the local medical school.

The Bachelor of Medicine and Surgery is a five year programme with exacting entry requirements. The course has an integrated, systems-based spiral structure, with two thirds dedicated to core content, and student selected components comprising the other one third. A high proportion of students (approx 40%) undertake intercalated honours degrees between their 2nd and 3rd years. Traditional teaching and learning methods – such as lectures, tutorials and clinical attachments – predominate, but are allied to modern features such as early clinical contact, problem based learning, portfolio based learning and self-directed e-learning.

Integration is both horizontal and vertical: the intention is that each year students revisit knowledge and skills acquired in previous years and build upon them. There are a number of curriculum vertical themes which extend throughout the course, though patient safety is not one of these. The emphasis is on outcomes: skill acquisition in relation to both practical and personal skills, and also developing relevant technical and professional understanding. Various assessment methods are employed throughout the course, including structured case questions, multiple choice questions, essays, objective structured clinical examinations, peer assessment and appraisal and portfolios. The programme has an excellent reputation based on NHS

reports and RAE results. Student numbers are relatively high (approximately 1,300 over the 6 years including intercalating students).

Site B is a regional medical school operating on a 'hub and spoke' basis, and is the next oldest historically. It is a long-established medical school with an annual intake of 350 students and three routes of entry: two undergraduate streams from two partner Universities, and a small graduate entry programme. The course has a case-led, outcome-based curriculum built around subject strands covering both the basic and behavioural sciences, with a strong emphasis on clinical and communication skills, ethics and evidence-based practice, and professionalism. The educational philosophy is best described as 'guided discovery learning'.

The course is divided into Phase I (comprising years 1 and 2, spent predominantly in the medical school) and Phase II (comprising years 3 to 5). In years 3 and 5 students spend the whole academic year in one of four geographical areas, each having a lead Trust which links with a number of other Trusts, GP practices and other community agencies to deliver the course. Year 4 comprises a classroom-based semester, student-selected options and a clinical elective. Approximately 15% of the course is based in the community.

Site C is a well established traditional medical school with one of the largest student intakes in the UK. In 1994 a new problem based learning (PBL) curriculum was introduced which is intrinsic to all five years of the MBChB course. The spiral approach to curriculum has been adopted, with vertical strands covering behavioural science, communication, ethics and professionalism running throughout the curriculum, and a 75% core / 25% student selected component distribution. Teaching is predominantly small group based and self directed by students.

For the first two years students are based on the medical school campus with a relatively small amount of patient contact. For the clinical years students are attached to one of four clinical teaching hospital bases and (like site B) are essentially placed as four smaller student units of 100+ students per site. Twenty percent of the curriculum is taught in the community and strong relationships are established with the NHS Trusts for both secondary and primary care across the four base sites.

Site D (detailed case study) was funded as part of the expansion of medical school places, and opened for students in 2002. It has a five year programme open to both undergraduates and graduates, with a broad access policy including some linked foundation course places for those without biological science backgrounds, and a requirement at A level *only* for biology plus any other subjects at AAB grade. The course is characterised by clinical placements throughout the programme (weekly contact with primary care; 4 weeks of secondary care in each of 14 units which make up the 5 year course). It is entirely outcomes-led, with patient and problem based cases constructed to deliver knowledge acquisition. The core curriculum gives as much weight to the social and epidemiological sciences as it does to biological sciences, and has student selected studies for 25% of total time, including some medical humanities options.

Self directed and small group learning methods predominate, with clinical and consultation skills, interactive sessions at frequent intervals throughout the course, and

some lectures and seminars to support students' study. There is a strong continuous strand of academic skill acquisition running in parallel with the integrated clinical course, linking into the subjects currently being studied in core, but developing student skills in obtaining and using the evidence base in different biological and social sciences through in-depth study of student-selected topics. The assessments take a variety of forms, including clinical OSCEs, reflective essays, written EMQ and advanced notice questions in timed exams, presentations, posters and research projects. The course was accredited by the GMC in 2007, and signed off for five years following review of the first Foundation year in 2008.

The total number of students is relatively small by UK standards (maximum 850 over the five years, with around 12 per year on international fee rates). The Faculty is also small – 50 FTE posts including administrative, with large numbers of NHS staff contributing to campus based teaching and assessment as well as clinical work. The School is part of a Faculty of Health which also includes nursing, occupational and physiotherapy, pharmacy and psychology trainings. There is a strong emphasis on interdisciplinary working and teaching, with compulsory interprofessional learning between the four health student courses in the first two years of their trainings.

The NHS context of the school is of a small city in a rural area with large market town. The region has a dispersed population with pockets of deprivation, and a relatively ageing population with lower than UK average ethnic mix (though rapidly increasing in numbers and diversity of national backgrounds, with fluxes of migrant workers). A Joint Venture forms the underlying organisational context of the school, with a legal partnership agreement for both research and educational provision between the university, the main teaching hospital, two district general hospitals, and two Primary Care Trusts, plus the input of general practice teams across two counties.

The Academic context

Overview

As might be expected, all four medical courses reference their programme aims and outcomes to the recommendations of the GMC. They tend to describe outcomes for knowledge and understanding (theoretical and practical) separately from skills and competencies (scientific/practical/clinical/communicative). All courses aim to provide a range of experiences to underpin the application of knowledge and skills to patient care, and to emphasise the development of professional attitudes and a personal commitment to learning through and from experience – in particular patient contact.

Academic context and the formal curriculum

The course documentation and the views of the course directors formed the first stage of the analysis of the formal curriculum. The curricular documents were identified with the help of leads at each site and those course directors (CDs) who were nominated for interview.

In terms of the examples of curricular documentation (see table), the documents selected from site B appeared to link safety issues to themes of personal and professional development. Sessions focus on clinical skills and prescribing, but also

explore communication with patients and the health care system. Documents analysed from A were also mainly concerned with students' personal and professional development, with relevant learning mainly in years 3 to 5. Sessions highlighted focus on clinical skills (linked to a variety of specialties) and aspects of pharmacology and prescribing. Communication and record keeping are also mentioned in some. Site C uses a PBL (problem based learning) approach, so relevant material appeared to be spread across the expressed learning outcomes. In these, perceptions of risk and decision-making, and exploration of accountability for acts and omissions are included, as well as clinical and communication skills. Site D also uses a PBL approach. Relevant learning outcomes were located in material for PBL, clinical skills, recognition of risks, communication and legal concepts.

All courses appear to have some common specific content areas as examples of patient safety issues. These can be summarised as:

- Infection control (includes handwashing and management of equipment)
- Blood and blood products
- Prescribing and medication, also looking at prescribing errors
- Risk assessment. This was a very broad heading, covering communication, clinical vulnerabilities, risk to staff, or risk of self harm eg suicide. For medical students, manual handling tends to come into the general risk assessment of patient and staff safety. Communication in itself is broad term which may include communicating risk to other staff, discussing risks of procedures, developing and maintaining a good rapport with patients, accurate recordkeeping...

...the other area is in the year 4: we label it informatics because it's looked after by the informatics theme head but in fact it's about risks inherent in knowledge transfer and, um, being aware of the weak points in the system (Interview with course leader, Site A)

Legal and ethical teaching & learning is sometimes aligned with safety issues, including risks to consent and confidentiality.

I think the ethics teaching on do no harm, you know, and approaches to practice, consent, confidentiality all teach about patient safety. (Interview with course leader, Site A)

The structures and limits of clinical reasoning seem to be addressed as part of clinical method rather than as a safety issue per se:

...and then clinical procedures is another area and we don't stand up and say: this is about patient safety. We say: this is about good practice and being a good doctor, and being patient-focused, you know. (Interview with course leader, Site A)

Teaching of core patient safety theory eg: reporting systems; the nature and evaluation of safe organisational cultures; epidemiology of error; root cause analysis; the nature of violations; or enacting team error prevention and management, seems rare. Some of these topics are covered at individual sites, others not at all.

Of the course directors interviewed at sites A and D, one was a GP, one a surgeon, one a medical ethicist, and two physicians, all with leadership roles in the programmes.

The following summarises the findings across all schools:

- Interviewees perceived a strong sense that external drivers had brought patient safety up the educational agenda, ie that the recent NHS policy emphasis on patient safety had been an influence on the courses, and that CDs had needed to respond to this within their medical programmes.
- Patient safety was described in different ways, with dimensions of good clinical care, minimal standards of care, avoidance of error, and safe risk-aware practice. All mentioned that there was no shared definition of 'patient safety' but they felt there should be. Some had consulted material in order to find such a definition.

Q: Just in your own words, how would you define patient safety? How would you describe it?

A: I knew you were going to ask me this, and do you know, I would've looked up all my information... (Interview with course leader, Site C)

- A tension was seen to exist between highlighting safety theory and specific topics in practice, and the need to ensure that students see safe practice and patient protection as running through everything they learn and do. The tension was expressed as the pros and cons of didactic classroom based sessions where one could be certain that all students had heard about a topic, against the essential but less predictable need for them to apply their knowledge and skills in the clinical settings.

To me teaching the student good clinical practice you are by definition teaching them how to be safe. It's almost as if you say – where in your driving lesson did you learn about road safety? The whole business of learning to drive is learning to be safe so what we're trying to do is highlight issues then say yes we are covering them but we didn't sit down and say these are the issues we need to develop. (Interview with course leader, Site D)

The unhelpful answer is that everything could be relevant, but... in undergraduate programmes that's actually not a banal answer because if the students don't know core knowledge that will help them to look after patients at a very basic level when they first qualify, they will be unsafe (Interview with course leader, Site D)

- All emphasised the need to build safe practice throughout the course (the 'spiral' curriculum), with a strong emphasis on the role of final year placements and assessments to bring learning together in preparation for the workplace. Another emphasis was on the transfer of learning from teachers to students, as they began to question experiences in the work place and adapt their theoretical knowledge to the context of real practice. The difficulties of ensuring tutor consistency and openness to discussion of safety issues was

acknowledged, but the value of supervised patient contact was seen as essential to the formation of safe practitioners for medicine.

Really it's a very practical thing and it's a very workplace related thing and I think that's where the learning should come from. So therefore you're sort of dependent on the people that are delivering teaching or teaching and learning in that setting. And my feeling would be it would be much more real and much more powerful for learning if students actually see it happening, rather than just get told about it when it's actually divorced from practice. .
(Interview with course leader, Site C)

- At interview, the course directors linked clinical procedural skills (eg injections and sharps), clinical reasoning, development of professional judgement, and learning from problems (errors, whistleblowing, concerns) with the overall remit of patient safety in professional practice, but acknowledged that this may not be obvious to all:

the challenge then is actually making sure that ... those opportunities are made explicit to the students. So I think it's quite important that teachers and people day to day are more aware of this so they can actually make the students more aware as well. (Interview with course leader, Site C)

- There were some differences in the ways different schools taught patient safety, with two having more classroom based learning and some explicit sessions, while others said they had relevant material spread throughout the programme. The point was made that to revise a whole curriculum (eg review all the problem based learning cases, or change outcomes for all placements) is complex, but may be more educationally robust and stable than to add sessions into an existing curriculum. The difficulties of including a new theme in crowded curricula, and in gaining territory from other subjects were also seen as potential barriers to making 'patient safety' as a theme more visible:

...we don't have a theme called Patient Safety, but that doesn't mean it's not there. (...) the other way we are considering... we do consider our curriculum – is looking at key clinical topics, and that is to take account of things that are neither a module in its own right, nor belong to a large academic or clinical theme, or discipline (...) it's another way of, I suppose, searching and describing our curriculum because key clinical topics will cut across modules and the themes. (Interview with course leader, Site A)

- There was considerable educational sophistication in these interviews, with a clear mission towards excellence, a recognition of the need to learn and apply knowledge and skills in near life settings, and the value of situating learning into clinical scenarios:

...clinical procedures is another area and we don't stand up and say: this is about patient safety. We say: this is about good practice and being a good doctor, and being patient-focused, you know, being... for example introducing yourself, making sure you have got the right patient, checking it against their name bands and against either their patient notes or their... perhaps it's an IV cannulation prescription – so we actually teach that as part of our clinical procedures. (Interview with course leader, Site A)

There was, however, little discussion about repeated rehearsal of routines (core to some safety literatures), and little mention of governance issues or possible mishaps.

Academic observations

The sessions were selected for review based either on keyword search or by local lead identification as relevant to patient safety. Sessions observed were

Site A:

- Clinical Procedures – Intimate (Breast) Examination (practical combined with group discussion)
- Clinical Procedures – Intravenous Therapies (practical combined with group discussion)
- Therapeutics case discussions – Antimicrobials (Lecture)
- Joint Teaching Week Sessions on Clinical and Professional Risk and Medical Informatics (Lectures with some group work at the end)

Site D:

- Safe Lifting and Patient handling (Lecture)
- Safe Prescribing – drug interactions and adverse reactions (Lecture)
- Consultation Skills – Conveying Risk (role play and subsequent discussion)
- Clinical Skills – Blood (Practical)

Common factors across the sites included a focus on issues identified in the literature and policy documents, such as prescribing, handling, sharps management. All of them had clear links to clinical practice, even if the sessions were primarily theoretical, and all had some practical component, even in a classroom setting.

Didactic ‘how to do it right; why get it right’ messages were common, and were pitched at minimum requirements of safe practice. The teachers often countered these ‘ideal’ messages with reciprocal messages about ‘what goes wrong’ – warnings / admonitions, and comments on risk of litigation:

One patient might take it the wrong way and they’ve got a complaint against you (Verbal quote of teaching staff noted by researcher, Clinical Procedures – Intimate (Breast) Examination, year 2, site A)

However, the bridge between ideal and problematic (ie what to do when problems start – to arise, to detect and avoid their escalation) was less frequently explored⁴.

Most of the sessions showed good student engagement, and had ‘face validity’ – ie stressed safety aspects in the clinical context throughout, including dimensions of teamwork, systems, recording etc.

⁴ Point made by Eraut who repeatedly highlights the tendency we observed for propositional knowledge based on academic curricula and discipline specific content to be separate from the professional requirements to complete tasks. He points out how postgraduate / practice based settings tend not to include explicit analysis of processes and the systematic development of professional thinking (by which he means the ability to adapt and learn through active engagement with practice) - this allowing experts to ensure safe practice but not supporting less experienced staff to learn from them. Also points out need for time and workload management to permit this more deliberative process.

Site D had a model of incorporating patient safety into a consultation skills session, by using actors to help students to explain risk. However these types of sessions did not seem to extend to examining ('acting out') near misses in diagnostics or team settings.

Site A had some 'high level' examples of theory (Sessions on Clinical and Professional Risk and Medical Informatics, Year 4), but the style of sessions appears less practical / integrated.

Neither site appeared to have any teaching and learning on performing common NHS procedures eg incident reporting, or root cause analysis. Some sessions eg dealing with errors (site D, Unit 14) could not be observed because of the time limits of data collection.

Academic context – the views of students and patients

Student focus groups

The students put a much stronger emphasis on professionalism and personal responsibility than on specific topics or organisational / procedural expectations: the topics mentioned earlier (medication errors, communication) were given as common examples of importance in the curriculum, though not necessarily badged specifically as safety issues per se.

I think it's too broad almost because you can either sort of waive practicing patient safety – it takes into account so many different things. Like, I think a patient's entire admission to hospital along with keeping them safe and behaving safely around them. Anything that you could do could cause damage to them – if you get the wrong drugs on their Cardex, or they're given too much of one drug or not given a drug at all. That is all sort of compromising patient safety. I think it would encompass everything really, every aspect of care. So I wouldn't think you could... it's too broad (FY1 Doctor, Site A)

All of the student groups defined patient safety in relation to professionalism – knowing that there are risks in medicine, that mistakes may occur, but doing their best to minimise them and deal with them, while accepting responsibility for their own actions.

The students appeared quite educationally literate, and could see how their courses built up from 'know about' to 'understand' to 'be able to do'. There was a clear trajectory from ideal to real as they moved from year 2 to year 5 / NQPs, with an increasingly sophisticated debate about uncertainties of practice, plus more concern about the actual possibility and consequences of errors:

...there's also a big problem with the fact that you do feel that there's a criminalisation of making errors and that's always a problem because the thing about owning up and doing it has got to be in a safe environment for the near miss thing, but if somebody is doing that and people feel it's gonna wipe out their career for an error then they're not going to want to report it...
(Final year student, Site D)

They appeared confident that they understood what is safe practice, but they did *not* introduce theoretical constructs such as epidemiology of error, or the more complex

issues of why health professionals violate their own norms of good practice. Their discussions used concrete examples from their teaching and learning (including some of the examples observed) to demonstrate practical tasks they expected to do as junior doctors (prescribing, blood transfusions, communication):

I think we were taught well how to communicate with our colleagues because they've said that we are very nice at the (teaching hospital) and that we talk to them, and we involve them, but I don't think we can over emphasise the importance of the communication (FY1 doctor, Site D)

Their preoccupation was to be able to 'practise': to have repeated opportunities to do things under supervision and with feedback till they are confident they are competent:

when you hear about it in a lecture, it's like: oh OK that's fine, you know. But when you actually pick up the needle and you go to the patient, it is like a completely different thing. It's quite helpful to get personal experience yeah. (Year 2 medical student, Site A)

Practical learning was felt to be far more important than theoretical learning with lectures being viewed as less effective in learning about patient safety than applied sessions:

if something does come up in lectures it's hard to kind of sink in because it's one person addressing 200 and there's an awful lot of thinking as well. It's not really emphasised at all. (Year 2 medical student, Site A)

Detailed routine rehearsal was felt not to be sufficiently common for medical students. Feedback on performance at assessment was also crucial.:

But do you learn through assessments?...

R1 – not really because you don't get feedback.

R3 – you don't get feedback, that's one thing...

R2 – you never know how you've got your score. Or even your breakdown of what you did well.

(Final year medical students, Site A)

Thus, while they felt suitably assessed in formal settings such as OSCEs they were less confident that they would be safe junior practitioners. However, the NQPs were able to see that their training had equipped them well for the common scenarios they faced in the NHS, and they did not raise the apparent 'gaps' in the formal curricula as a problem. This perception of inadequate opportunity may therefore reflect learner uncertainty rather than poor training per se.

Learning through role models was viewed as important by learners. This referred to observing and copying examples of good practice and observing examples of bad practice:

Everybody has to read the date and concentration on the drug dose and then it is double checked by somebody else. So you probably wouldn't know to do that had you not seen somebody else doing that before. So it's really anybody that you can pick up the skills from, anybody within the clinical setting I think and any practical sessions too. (FY1 doctor, Site A)

Patient focus groups

The issues raised by patients tended not to be discipline specific, though they often specified the setting for their experiences and concerns (predominantly hospital based). Strong themes of safety were about individual professionals dealing effectively with illnesses: correct diagnosis at early stage; competent management of serious events; also, the importance of role models in creating a strong safety culture.

Patients expressed various proxy behaviours by which they felt safe eg a sense of being attended to, their problems being perceived & prevented:

...feeling safe, and not coerced: that would be our perception of safety (Patient focus group, Site D)

Somebody comes in here and doesn't perhaps get the treatment they thought they were going to get or wasn't adequately explained or the explanation was a bit too complicated to understand and they should have brought somebody else with them – then they feel unsafe. (Patient focus group, Site D)

Indicators identified by patients of safe practice included staff having enough time to attend to their patients and to listen to them:

R4 –he's not looking when you are talking, he's writing down. Whereas I notice, wee [name], when you are talking to her about your illnesses, she keeps looking at you.

R2 – aye, and listening to what you are saying.

(Patient focus group, Site A)

This was extended to the students in one focus group, where patients queried whether the students had enough ward based time, and enough supervisory attention. Some patients perceived students as of low status, and speculated that they would have difficulty in resisting bad practice:

...the stranger moving into an established group of people, and they very quickly find out how best they can... feel secure in the group. If they challenge what is unacceptable behaviour, if they say: 'in college we were taught this', someone will laugh at them, some will deride what they've learned and the student will feel challenged. (Patient focus group, Site B)

The 'common topics' (drug errors, safe mobilisation, hand washing, communication...) were again reflected in the patient discussions. Patients understood the value of patient contact for learning very well, but except when acting as an 'expert patient' it

was not common for patients to speak to students about their experience of safety lapses in health care.

Summary for the academic context in medicine

The academic context used broad, applied and multifaceted definitions and examples of patient safety, closely linked to clinical practice. There was little 'orthodoxy' – that is, few leads or teachers used core theoretical definitions or policy documents to reference their thinking, relying more on outcomes defined by the needs of newly qualified staff practising under supervision.

There appears to be strong agreement that the formal curriculum aligns with the academic context – that is, that the structured teaching and learning events which relate to patients' safety are perceived to deliver the intended learning outcomes. More opportunities could be taken to highlight core knowledge about patient safety, but all see this as being best done through interactive practical and patient-oriented tasks that mirror clinical priorities and practice. The 'negative' side of medical errors appears to be used as a warning rather than a teaching tool, and there was some sense of this driving issues 'underground' for students – causing them anxiety without enabling learning. Patient contact is repeatedly emphasised as crucial (as well as often enjoyable and stimulating), and the patient voice in clinical learning was seen by all as very effective in promoting learning.

While the educational histories and approaches of the two courses appeared different, there were strong commonalities in the issues and types of topic and learning presented as patient safety linked. It was not possible to tell from the formal curriculum whether there were substantive differences in the outputs of the two courses.

The Practice Context

This data section was derived from observations in NHS workplaces where medical students undergo placements, and from clinical tutors. In Site A, three sessions of general practice with the same student occurred, and one half day of inpatient work with one student. Site D observed a group of 6 final years' working in General Practice, and two sessions of 3 final year students working in accident and emergency. Each site had a focus group with tutors who teach on their medical courses (three medical at site A: two GPs and one consultant in acute medicine (all also involved in formal teaching); eight at site D: three GPs, two hospital doctors, two nurses and one non – health professional).

In the practice observations, activities were divided between 'observing' and 'doing'. There were many examples of role modelling and core safety issues arising, including diagnostic uncertainty, acute emergencies, patient records and associated issues of identification and completeness, prescribing problems, and infection control (evident through hand-washing, notices on walls, gloves etc). Patient care was the constant focus, with very few NHS systems being explicitly addressed, apart from contextual discussions on referral services or test availability. Guidelines on walls were the only visible organisational documentation, and these were rarely referred to in teaching.

The different observations could be differently classified as 'assisting' ie watching others working; 'apprentice' (doing work with some supervision); and 'in charge' – leading the patient contact with observation and backup from a tutor. These would not

be expected to achieve the same ends educationally, and it is worth considering which type of placement is most likely to achieve which ends in terms of safe practice.

Initially, the orthogeriatrics ward round took a similar format to the previous ward round with the student observing the senior doctor seeing the two patients. At this time not much effort was made to explain to the student what was going on. After this the student was given the opportunity to study a patient's notes and then see him and discuss his case with the senior doctor. Here the student's learning seemed much more active: being allowed to learn from the patient and by making mistakes, and subsequently reinforcing learning through discussion. (Researcher description of practice observation, Site A)

Tutors developed the theme of needing to be very explicit around some learning objectives on patient safety, and thought that could be further developed in the curricula and placements at both sites, while also emphasising the essential nature of experience and practical engagement rather than an abstracted theme.

I think (name of colleague) is right that we do but we don't specifically signpost it and as they're learning going through medical school we need to need to discuss it within the context – to say: this was a safety issue, and put a flag on it – and we probably don't do that often enough even though we discuss the issues. (Practice focus group, Site D)

They stressed the need to have high expectations of students; to point them to appropriate high quality resources (BNF, NICE and SIGN guidelines); and to allow them to be actively practising in a safe environment, rather than passive in clinical care.

they will, on the first day ward round, effectively act as if they were an FY1 and present that patient to the consultant on the round and then get feedback from that consultant about what they've done right or what they've done wrong. (Practice focus group, Site A)

There was clearly a tension expressed about loss of 'apprentice style' learning compared to the tutors' own training: aspects of repeated practical experience of prescribing were felt to be less embedded in current courses, although it was acknowledged that there was time in postgraduate practice to develop further knowledge.

R1: ... I think if you really want to look at patient safety from a pharmacology point of view, I think I would have to put my hand on my heart and say that you would need to not make pharmacology a vertical theme and make pharmacology a core subject that they are formally taught in a better way than they are currently. (Practice focus group, Site A)

The students were perceived as being hardwired into some safe practices (hand washing, patient identification, good interpersonal skills), but very inexperienced in others:

During the OSCEs for instance they get a point for washing their hands and if they don't wash their hands and you say: are you going to wash your hands? They say: sorry. And they say: that was an easy mark missed. And I think that's just a brilliant way of teaching them about hygiene – I think that works. And the other thing about checking the patient's name, making sure the patient (sic) knows who they are, that's ingrained, really, I should imagine, by the end of 5 years' training. That sort of thing wasn't really done when I was at medical school, but it is a long time ago. (Practice focus group, Site D)

I think the doctors of tomorrow are going to be sued because their basic, you know, pharmacology knowledge and so on is not as good as it used to be. I think the pendulum needs to swing a little bit further back to the right I'm afraid. That's my own... my feeling. (Practice focus group, Site A)

Progressive taking of independent responsibility and supervised embedded experience was seen as very important, but hard to deliver – both because of tutor availability and the risk-averse environment of the contemporary courses, where medical students' ability to work independently is minimal.

But when they're interacting with patients as a year 5 student, we generally let them do it on their own. No one will actually go and supervise them unless they need to do a practical procedure on that patient. If they've never inserted a cannula before we wouldn't allow them to do it unless they've been deemed competent to do so. (Practice focus group, Site A)

There were some clear differences in the focus groups between the two courses, with site D tutors citing the emphasis on learning about teams (in interprofessional groups and in problem based learning tutorials). While reflective practice was mentioned in both as part of relevant core learning of patient safety, Site A teaching about PS in practice context seemed to be more through observations of role models, supervision, discussion and feedback:

say we were out doing house calls and we're out doing all sorts of things: I sort of try to be very reflective in the way I'm practicing and to try and instil in the student good practice... which is what I'm sure most people do because an awful lot of what the students learn through osmosis as well as actual, you know, a, b, c, d step wise sort of seeing a process through. And I think for myself, hand washing is something that I, you know, make sure that I do after every patient and I make sure that when I am consulting the student is aware that I am hand washing and, you know, I'm just trying to give the best example of good practice that I can when I'm with the students, with the total transparency that I am not perfect... and I think that when there are situations where you might deviate from something – not hand washing's not a good example – I usually would explain to the student why I am taking such and such a step where you would normally do, you know... (Practice focus group, Site A)

Neither group supported teaching about Trust policies per se, but mentioned that students are exposed to them and expected to be aware of them:

I think that during the clinical pharmacology sessions that we have in year 3, as an introduction we already start to introduce them to the Yellow Card Scheme, the [name of place] Joint Formulary and there's also the MEC which is the student formulary. So they're pointed to the various, you know: these are there for them to access in their own time so they're aware of them, but it's not the point that we keep pressing on because they've got enough on their plate. (Practice focus group, Site A)

Some were interested in extending learning opportunities through more direct teaching material related to errors, near-misses, and live clinical challenges.

An interesting discussion at site D picked up the academic tension between using negative examples with the risk of fear and anxiety versus making the ways in which errors occur much more explicit:

R 6: If you look back you can see perhaps 5 or 6 different places where a single intervention would have prevented it, but the fact is it was just a cascade of errors. So I think pulling out real cases like that and discussing them with students is good.

R 7: I think, though, we have to be careful to strike a balance between making them aware of PS and not scaring them. I don't know if anyone else has sat through MDU and MPS lectures or read through the case book that gets sent in: you'd not want to practice after you've read that.

(Practice focus group, Site D)

The practice context again appears to support the overall direction of formal academic context more than the organisational view, with learning predominantly focused on individual patient care rather than systems and team management. The appropriate teaching and assessment of core topics seemed encouraging, with student and tutor awareness being reciprocal, and with a less 'cavalier' approach than in previous decades of medical training.

However, there were concerns about the ability of the service to maximise effective learning due to capacity. Some of the tutors and both researchers commented on the pros and cons of large versus small student numbers, and workplace learning. It was clear from the observations that having only one or two students allowed more supervision and discussion. However, when this was set in the context of the tutor also working (ward round, GP clinic), it appeared that time and supervision was limited, and some learning opportunities were missed, especially in the busy hospital environment. So both absolute numbers and the complexities of delivering a service at the same time as teaching may interfere with student learning, unless the situations are carefully managed and adequate tutor time is freed up to assist students effectively.

Finally, the tutors echoed the need to emphasise patient safety explicitly, so that students were absolutely clear what might go wrong and how to prevent or detect problems early. Their main suggestion was to set specific learning outcomes on patient safety, linked to clinical placements and campus based activities, and also to use more discussion of clinical errors and near misses as a core teaching approach.

Assessment issues were rarely addressed in the practice settings, and this may mirror both the fact that placement based tutors are not individually responsible for assessment, and the 'implicit' rather than explicit nature of safety based learning outcomes.

The Organisational context

The organisational documents and interviews for medicine appear to be quite different culturally and conceptually from the academic context. There were 6 interviews in total: one Acute Trust Director of nursing and clinical governance lead, 2 Acute Trust Risk Managers, 2 PCT leads (clinical governance, corporate services), and a Medical Director. The purpose of the interviews was to:

- identify the organisations' views of patient safety and
- gain some insights into the organisational culture regarding PS and the cultural influences on patient safety education and practice.

As with the course directors, there was a strong view that policy was driving the prioritisation of patient safety:

I think the first thing is that patient safety as a specific strand of work has become much more important in the last two years probably. In a sense people began to read – well reading, 'Organisation with a Memory' and so on. (Interview with manager, Site A)

Whereas 5 years ago we didn't have patient safety reports going to the Trust board, I think it's much higher on the horizon, it's much more in the public domain and I think it's very much more in terms of empowering the patients to ask, and if they're not sure to find out. I think that can only be a good thing. (Interview with manager, Site D)

In terms of the respondents, there was much more focus on in-service training issues than on the preparation and formal training of undergraduates or NQPs, which were rarely mentioned. Unlike medical schools or clinicians, where patient safety was seen as one of many issues to be considered, the organisational leads saw safety issues as a core policy issue.

It's just, kind of our... one of our fundamental reasons for being. If you're in caring occupations, then patients – their safety – has to be paramount. (Interview with manager, Site D)

It was noticeable that very few mentions were made of any weaknesses in the early training of junior doctors, nor of them needing any specific different training from other new staff in induction⁵. Very few interviewees appeared to have any desire to extend their personal influence into educational areas, nor to interface with universities for the purposes of training. The complexities of getting staff to take good patient safety practice on board was seen as something which needed to be embedded and championed within working practices, rather than abstracted into educational events (this mirrors the views of students and staff).

⁵ The specific training needs of FY1 and FY2 doctors are actually under the lead of Deanery tutors rather than NHS managers, whose responsibilities are those of the immediate Trust employer.

There is no point in asking staff to fill in lots of forms and do that if they have never known what is happening. So one of the key issues is that we feed the information back and that's why we are specifically... That's been welcomed by the staff: that we are now going to specifically target and give them what they want. (Interview with manager, Site A)

In general leads in organisations and their supporting documentation were oriented to staff rather than students, and few addressed the specific needs of transient attendees at their site. The assumption in the organisational interviews appeared to be that students were either acting as employees and would receive the general staff 'package', or were not the responsibility of the Trusts. While this is technically true, the needs of novices who are new or acting as temporary staff do not seem to be included in the organisational culture: nor do the managers and universities have any direct interface around curricula for key policy areas or NHS approaches to patient safety. Topics such as infection control clearly are informed by NHS needs and policy. Cultural and organisational approaches such as error reporting are less explicit but some schools (eg site D) have 'whistleblowing' policies that directly mirror NHS policies. However, this seems to be more reliant on the choices of curricular leads than to be a conscious consequence of organisational / academic links – at least at the level where these data were derived. Finally, there was relatively little sophistication in discussion of methods of education that would lead to behavioural change, and little sense of how the organisational leads might contribute to better early training that might enhance the culture of patient safety in their newly qualified practitioners.

Discussion and summary

Based on these data, it appears that policy messages about NHS priorities are receiving some active response by medical course leads, and being incorporated into both the formal and informal curricula through educationally effective learning events that address core areas of risk to patients. It is encouraging that tutors and staff had no major concerns about student safety and current educational approaches to patient safety.

There are some limits to the extent to which the medicine data can answer some of the original study questions. For example, because we did not compare the students from different sites in postgraduate settings, we cannot say which schools are more successful at delivering effective practitioners, nor whether their overall educational approaches facilitate practitioners who are more or less competent in safety domains.

We perceive some interesting gaps in the data. There was less mention of assessment than might be expected, in all stages. This may mirror the implicit rather than explicit nature of patient safety in the curriculum, or may reflect the philosophy that safety is a part of overall competence and therefore all assessments are relevant.

Some topics were more consistently cited as representing safety issues than others: this may be a methodological bias, as we inquired about these repeatedly. Or it may reflect a problem of complexity – ie adequate hand hygiene is a technique that is easy to recognise and assess, whereas diagnostic accuracy is less so because it is multifaceted. One might also question whether, if assessments highlight issues such as correct patient identification; accurate prescribing; and critical analysis of team working, to what extent there is a gain if these are badged as patient safety?

In the formal curriculum:

- In spite of some excellent learning activities and highlighting of many relevant core competencies, patient safety as a vertical theme is not clearly mapped in the medical curriculum. There was *no* support for it to be a stand alone topic or to be 'siloed off', but relevant content and outcomes should be more explicit. The fact that people struggled with definitions, outcomes and examples of systematic skill build suggests room for improvement
- Similarly, assessment needs to map onto the core competencies and outcomes linked with patient safety and to be systematically utilised to demonstrate safe practice
- There were some apparent gaps in the curricular content where relevant evidence already exists: the epidemiology of error; interprofessional team based delivery of safe care; how to learn from errors; and the psychological and systemic circumstances in which violations and underperformance occur
- Practical exercises which managers expect practitioners to undertake – such as incident reporting – are not being rehearsed to any great extent in the undergraduate curriculum, and managerial expertise is rarely used in medical teaching; nor do managers appear to expect to contribute to this
- It was clear that teaching and learning methods are most successful if predominantly interactive / applied, using the clinical context even if not in patient contact

In practice:

- Patient contact and the opportunity to learn under supervision is essential to development and application of core learning to patient care: clinicians, patients and staff support this, but managers did not highlight the need to accommodate education as part of effective patient safety
- Tutors on placements need to understand the learning outcomes related to patient safety and make these explicit in their educational activities
- The value of good role models, and the explicit opportunity to question lapses in practice was frequently emphasised, but doubts expressed by all as to how 'safe' it was to highlight and explore mistakes. This suggests that there is some way to go in both higher education and the NHS in creating a truly 'generative' safety culture

Barriers identified included:

- Complexity of curriculum reform when promoting a topic which is neither a theoretical science nor a specific discipline
- Numbers of students / active personal supervision and feedback: some things cannot be learned in large groups; some role models are better than others; some learning activities showcase safety issues more clearly than others
- Different culture in NHS: better where closer links exist between NHS and higher education, but still very separate.

Chapter 5: Nursing

Overview / outlines of sites

All four nursing programmes under study in Site A, B, D and E were at degree level, three years in length, fifty percent theory and fifty per cent practice in each year of the programme (a minimum of 4,600 hours total) and validated by the Nursing and Midwifery Council (NMC). The entry qualifications were typically three 'A' levels at grade B or C or equivalent.

The programme structure varied between the four nursing sites but all were based on the first year having a common foundation followed by a two year specialist branch in adult, mental health or children's nursing. The study selected the adult branch curriculum for further investigation in relation to patient safety. All four programmes had a modular structure and core competences for the students to achieve in terms of outcomes based on the NMC's requirements for registration – ie knowledge, understanding and skills (NMC 2004) with specific reference to: fitness to practise; clinical competence; high standards of nursing/care; and working in a multidisciplinary team. Programme outcomes also refer to the attainment of professional attributes.

In addition to traditional lectures and seminars a range of interactive strategies were noted such as scenarios for enquiry based learning seminars, learning contracts, using reflective diaries and portfolios, computer assisted learning and practising skills through simulation, role play and presentations in the clinical skills labs. During their placements, all students were allocated a designated mentor who had completed a course of training recognised by the NMC to facilitate their work based learning (NMC 2008).

Interprofessional learning was recognised as occurring in all practice placements. However, only one of the four sites (Site D) specifically had regular compulsory activities with other health care professional students. Additionally, one other site offered an opportunity for the students to undertake a multidisciplinary elective (Site A).

Assessment strategies included written course work, examinations, multiple choice questions, essays, portfolios and Objective Structured Clinical Examinations (OSCEs). All programmes had practice based assessments and three sites mentioned dissertations or project work.

The Academic context

Curriculum documents and course director interviews

The findings presented below are derived from an analysis of the curriculum documents and course director and tutor interviews in the four sites and explore the relationship between the stated intentions and planned delivery (*The Instructional System*) and the patient safety culture of daily academic practice as viewed by course directors (*The Learning Milieu*). For details of curriculum documents analysed and course director interviewees see TABLE 2 on page 37.

Patient safety definitions

Patient safety in the nursing curriculum documents was not visible as a specific module or theme but as a series of statements about safety. For example in University A, one of the Year 2 learning objectives stated that the student should be able to demonstrate *safe, effective and evidence based practice responsive to the needs of patient/client groups in adult care and mental health settings*. At University B, the curriculum described a variety of safe practices in the following way: *maintaining safe practice – moving and handling; preventing the spread of infection, hand washing, safe use and disposal of equipment, safe storage and administration of drugs*. The concept of risk also emerged in the documents examined at Sites A, B and D. In summary the curriculum documents for all four sites showed the emphasis was in producing a safe practitioner following the NMC regulations.

During the interviews with course directors, a similar overall theme to that in the curriculum documents emerged ie that patient safety was not a discrete topic but underpinned all aspects of the nursing programmes. At Site E, for example the interviewees defined patient safety as multi-faceted and incorporating patient factors, environmental factors and staff factors:

...because practically everything that we do and teach our students is with regards to patient safety, when you think about drugs, drug calculations, drug administration, think of moving and handling, you think of practical skills that they have to do, it's all related to patient safety (Interview with course leader, Site E).

One interviewee stressed the overarching aim of nurse education was driven by the professional code of conduct and this meant:

Right from the very beginning when I teach about professional standards and professionalism and clinical governance, it's all in there because it has to be, because it's driven by our professional code (Interview with course leader, Site A).

The interviewees also mentioned that the regulatory bodies, professional bodies and quality assurance agencies had had a major influence on nursing patient safety education. Litigation and the risk of losing the licence to practise or risk of being reported to the NMC was also seen as a driver for change and updating safety education.

As counter to these preoccupations the lecturers were seen as responsible for providing the students with the latest evidence of best and safest practice:

I do know that all of the staff that I work with are quite pedantic about ensuring that the sessions that they do give are up-to-date (Interview with course leader, Site B).

Although students were taught about patient safety in the clinical skills component of all courses they were expected to consolidate this learning in practice. But as one course director reported there were tensions between being taught the safe

performance of skills such as moving and handling – in the university – and being exposed to numerous variations in the performance of these skills in their placements:

... yes it's OK to see those variations but be aware there is a proper way of doing it and try not to fall into the trap of taking short cuts. Even though the proper way of doing it may be slightly longer it's more appropriate and there is a rationale behind it, and if they can understand that rationale as well as applying it to practice I think they're going to learn and take on board the fundamentals of patient safety (Interview with course leader, Site D).

Risk assessment which had emerged as a theme in the course documents, was mirrored in the interviews, particularly with regard to students learning how to identify vulnerable patients and work in an interprofessional context:

...because you can have all the knowledge but if you don't actually register that here is a vulnerable individual, with all these factors coming together... but if you can recognise who is at risk and then get into prompt intervention, prompt reporting, prompt team work... (Interview with course leader, Site A).

At Site E interviewees highlighted the systems view of healthcare and its effect on patient safety. The practice component of the courses enabled students to experience these systems first hand and learn about problem solving. In site D the respondent suggested that education had to be put in the context of whole health care system in order to be effective:

It's not just one thing with patient safety it goes right the way through the system, from making sure it's the right patient with the right drug to how they're lifted, fed, everything... (Interview with course leader, Site D).

Thus as the findings above suggest, the respondents did not support having a specific module in the nursing degree entitled 'Patient Safety' – as one interviewee put it :

... I design a module and I call it patient safety – the students would think that every other module had nothing do with patient safety. You've boxed it into that box. So in that way if you do badge it what you're doing is you almost ghettoising it in a particular area. (Interview with course leader, Site B).

Another respondent felt it was not possible to highlight specific topics in relation to patient safety and made a clear distinction between physical and psychological safety for the patients but also for the students' own safety. The nurses' job of making a patient feel safe therefore had to run through all aspects of nursing care and education.

Further, some respondents moved beyond discussing specific topics or modules pertinent to patient safety and felt that it was the attitudes and behaviours of students and professionals that needed to be brought to the forefront in order to improve safety. One educator suggested that one way to do this was for students to learn to be mindful in practice:

Mindfulness when you do something – to think about how you're doing it and what you're doing, is it automatically doing, so you may have the skill – the psychomotor skill – you may even have the knowledge base behind it, but if you're not mindful of what you're doing that's when error happens isn't it? (Interview with course leader, Site E).

It was also felt necessary to 'package' patient safety education in such a way as not to frighten students about the possibility of making mistakes.

Other factors that influenced patient safety education included the media and especially the frequent reports about MRSA and other hospital acquired infections such as *C. Difficile*. These reports impacted on the way the curricula were developing:

Well a lot of it's in the media... and if it's in the public domain then I think it has an impact on how we as lecturers would probably want to address that in our... in the content of the sessions (Interview with course leader, Site B).

This section has highlighted that nurse educators feel that safety is primarily a nursing responsibility and that safety education is or should be embedded throughout programmes. At the same time, most struggled to clearly define and conceptualise patient safety as a discrete concept. Patient safety was about producing a safe practitioner subject to MNC regulation and responsive to external forces in the health care system and the media.

Two Case Study Sites B and E

Following the curricula analysis and interviews at four sites, two sites were selected for in-depth case study analysis of the 'learning milieu' beginning with the observation of classroom activities and focus groups with students, newly qualified staff and users.

Academic observations

The observations of the academic settings were designed to capture 'education as delivered' as part of 'the learning milieu'. The sessions were selected to capture topics identified as specific indicators of patient safety.

In Site B these were:

- Intramuscular and subcutaneous injection technique
- Medical devices
- Moving and handling

In site E these were:

- Drug prescribing and administration
- Introduction to drug calculation
- Moving and handling
-

The students were predominantly first years, undertaking either the diploma or the degree programme suggesting that skills teaching takes place at the beginning of their three year programme.

There was a culture of openness between the lecturers and the students even in the lectures which comprised 100-200 students. Other modes of delivery included practical skills labs, PowerPoint presentations and group work. The lecturers were knowledgeable, drawing on examples from their own practice with patient safety being overt in some sessions but more likely to be implicit. This confirms the findings from the analysis of the curriculum documents and the course director interviews that patient safety was not visible as a specific module or theme. It was recognised that different Trusts had different policies and that there was a need for up to date knowledge and empathy for the patient and confirmed the lecturers were concerned to deliver evidence based lectures as one of the ways to ensure students learnt safe practice. There was also an emerging theme of 'risk' and the sense that there was a 'correct' or 'proper' way to perform clinical procedures to ensure safe practice and minimise risk.

The importance of attaining competence to perform a range of interconnected clinical skills related to drug administration and infection control was evident in the sessions on Medication and drug administration. The legislative and regulatory aspects of patient safety were emphasised in the drug calculation and moving and handling sessions in Site E.

The reference to 'using common sense' in the session on drug calculation tied in with the students' observation (second year focus group, Site E) that common sense was a component of patient safety. The connection between patient and student safety was made in the moving and handling session in Site B. The responsibility of the students to be on the look out for errors was apparent in this discussion, with the onus put on them as nurses to alert doctors to errors and the assertion that they could count on support from the university to do this, was in contradiction to what the students reported in the focus groups. That theory may be different to practice was raised by the tutor in Site E confirming similar issues emerging in course director interviews, student, practitioner and user accounts and practice observations.

Focus Groups

Focus groups were conducted with second and third year degree nursing students, with newly qualified nursing graduates and users involved in education in the nursing case study Sites B and E. The purpose of each focus group was to capture the views, perceptions and definitions of patient safety (PS) education as it was received and practised (The 'learning milieu') and how the learning could be improved.

Second and third year students

Defining patient safety

The students viewed patient safety as all encompassing and involved learning to deal with real issues for real patients incorporating physical, emotional, psychological aspects and keeping them from harm in a safe environment.

As one student observed about her lecturers:

Whatever subject they're talking about in the lecture, they're always just sort of reminding us to put the patient first and make sure they're always as safe as possible (Year 2 nursing student, Site B).

Students needed to be aware of hazards in the environment, carry out risk assessments to prevent falls; use appropriate equipment to move patients as well as ensuring their own personal safety.

As a second year student put it, patient safety means:

Safe environment , medication – making sure the medication you give them is safe for that patient, observations, neuro obs – making sure they are done regularly and on time, manual handling and mobility, equipment eg macerator linked to infection control risks, making sure patient’s condition is passed on at hand over eg MRSA status; checking for allergies, name band is correct, labelling samples correctly, if someone is diabetic (Year 2 nursing student, Site B).

For a third year student patient safety involved risk assessment and trust between the patient and the nurse.

The theme of trust between the nurse and patient and the need to build relationships also emerged as a theme during the user focus group discussions.

All students reported that they learned about patient safety in practice placements and in the university. Two second year students from Site E felt they ‘picked up’ patient safety as they went along and one viewed it as common sense. Another third year student stated that everything they learnt was about patient safety. This supports the course directors’ views that patient safety underpinned the whole of the curriculum.

Clinical skills teaching in the University

Among the students there was a degree of ambivalence about the clinical skills sessions. Some students appreciated the opportunity to learn and practice skills in a ‘safe environment’ such as a skills lab where ‘you can make mistakes and it doesn’t matter’. Other students felt the timing of such sessions was crucial – if for example a moving and handling session at University came too early, then by the time the student went into practice they had already forgotten what they had learnt (Site E). Some students also felt that another limitation was that their lecturers only taught the ‘idealised’ way to move or handle patients and the consequences of ‘doing it wrong’.

...but it doesn’t really, for me, put it into context... because as soon as you go onto the ward you look at a patient who’s got an IV drip up or a catheter and moving them is suddenly a lot harder than it is moving one of your friends... (Year 2 nursing student, Site B).

At University the students also felt they were taught defensive practice, ie ‘what not to do’ for patient safety reasons but also for legal and professional reasons, implying that students needed to develop their reasoning skills before acting in practice.

We’re being told over and over again don’t do something you don’t know how to do... so that’s kind of patient safety in a way... don’t put the patient at risk (Year 2 nursing student, Site B).

Factors affecting learning about patient safety in practice

Resource factors

Students identified factors in the clinical environment that could enhance or hinder their learning about patient safety. These factors included resources related to staff numbers including the number of qualified nurses to the number of health care assistants and students. Most of the students gave examples of how staff shortages impacted negatively upon patient safety and their subsequent learning.

They also gave examples of where equipment was crucial to ensure patient safety, such as the availability of hoists and sliding sheets being essential to protect both staff and patients.

They also reported staff practices whether 'good' or 'bad' could create confusion for them because of the different ways of performing procedures that often did not correspond with their teaching in the university.

The following quotation illustrates how students could feel compromised with regard to patient safety:

You go into a cubicle with another nurse and the patient wants moved up the bed and the nurse looks at you and says: 'are you alright to do this move'? Because you know they're going to slide them up on the sheets but you know if you say 'no I'm not going' they're gonna be nasty about you behind your back and say: 'don't go near that student nurse she won't do anything for you, she won't do this or this'. (Year 2 nursing student, Site B).

Client factors

Students also mentioned the importance of client factors in creating patient safety dilemmas for them:

a patient with dementia ...for her safety ...she had a high risk of falls ...cot sides...dilemma ...could climb over - either way at risk of injuring herself (Year 2 nursing student, Site B).

In this example the student recognized the consequences of making a mistake in judging how a patient may be unsafe to themselves or others and how having the support of their university link lecturers would assist them to resolve such dilemmas to challenge aspects of nursing care where there was a clear gap between what they had been taught and what they were seeing or being asked to do.

Relationships with mentors and other staff

Students recognized that their relationship with their mentor was crucial to promoting their learning about patient safety. A key variable was the amount of time they were able to spend with their mentor but also how willing the mentor was to teach them and to be open to questioning. This relationship also affected how confident and comfortable they felt to challenge unsafe practice in any member of staff.

One third year student in Site E explained how she would not do anything unsafe for a patient but still found it difficult to question the ward sister about bad practice.

I would never do something if I thought it... I would never do something if I knew it would be unsafe for me or the person I was doing it on, but I still don't think I would be able to question the sister on the ward... I just don't think I could. (Year 3 nursing student, Site E).

Another third year student gave the following example:

I saw a qualified nurse preparing to do a blood transfusion and as she attached the giving set to the bag of blood she pierced a hole in the bag. So she turned the bag of blood upside down and was trying to tape the hole so she could continue to use the product (Year 3 nursing student, Site E).

The student had the confidence to go to the senior ward manager to report the incident even though it made her feel uncomfortable and the appropriate action was taken to ensure that patient safety was maintained and staff learning took place. For another student, at Site E, it was the culture of bullying in the NHS that impacted on how students learnt about patient safety and the need to be seen to be “fitting in”.

The students were also aware that the mentors assessed their practice and whether they passed or failed their placement was in their hands. Students also reported that in a busy pressurized environment they felt they took the staff away from patient care.

Placement factors

Students raised the issue of supernumerary status reporting that staff shortages meant that they were often treated as part of the workforce rather than primarily a student.

Students reported that different Trusts had different ways of doing things – even different wards within the same Trust – which compounded the uncertainty about what was best practice. Students felt patient safety could be improved if they were more aware of the Trust's risk assessment documents and nursing care plans which in turn would improve their preparation for practice:

I think as well...we did get shown some documentation, care plans, in uni but I felt for all of the assessments tools... I just learnt out in placement. So maybe just bringing in a few more... (Year 2 nursing student, Site B).

Issues arose in the student focus groups that connected with the themes emerging from the formal presentation of the curriculum related to a patient focus to patient safety in particular that patients' conditions affected their safety, the link between safety and risk assessment, the need to acquire clinical skills and competences and the distinction between formal and practice knowledge including the recognition that local policies differed between placements and Trusts. The relationship with mentors was seen as key as was the need for university staff to support them in practice. Factors that affected their learning were grouped according to resources, in particular the need for adequate staffing and the 'right' equipment.

Focus Groups with Newly Qualified Staff

In Site B participants defined patient safety as delivering the best possible care while minimising all the risks; maximum safety standards to ensure a safe (physical) environment for patients; but also to be safe confidentiality wise and acting within

safety guidelines built into the curriculum. As one participant concluded *I think patient safety is such a massive umbrella, isn't it?*

Site E participants could *'recall very little in terms of training specifically about patient safety'* and also concluded *it's a very broad subject, it's quite hard to actually physically talk to someone about it but I think you learn about it as you go along ..* (Newly qualified staff, Site E)

Clinical skills training

Catheterisation, injections, aseptic technique, drugs and drug errors were clearly identified with patient safety. At Site B one respondent said: *It was the proper way, the proper techniques of doing procedures such as, you know, aseptic techniques, catheterisations.*

The lectures were absolutely brilliant – hand washing technique, infection, you know, the use of equipment, single use equipment (Newly qualified staff, Site B)

In Site E the respondents also made the link between their clinical skills training and patient safety:

R1 I suppose the clinical aspects of our training obviously were geared towards patient safety anyway without necessarily even mentioning it.

(Newly qualified staff, Site E).

For participants in Site B the type of clinical setting was important for learning about patient safety and clinical skills and some settings were better than others eg the community where they were both now based and most importantly they were able to implement safe practice:

R2 Some clinical areas you can't put your training into practice, you simply can't... you get worn down.

R1 I've gone from a ward based to a community setting and that is totally different with regards to patient safety. Where I'm practising now, you know they adhere to it (Newly qualified staff, Site B).

Documentation was described by R1 as “a big flaw” the consequences of which were as follows: I mean for your transfer of care when you're looking at what's been done for that patient, if it's not accurately documented it has a big impact on the patient care (Newly qualified staff, Site B).

Participants in Site E reported similar issues with regards to poor documentation.

Learning from mistakes

There was a recognition that reporting systems and a *no blame culture* needed to be in place which encouraged and supported *learning from mistakes*.

One respondent 'knew' people who had made mistakes although she had not made a mistake herself and saw the need for an honest reporting system:

...I think it's okay if there is an honest sort of reporting system where you feel that you can be open about your mistakes and learn from them.

But she also highlighted concern over loss of registration or being sued.

She noted that better reporting of trips and falls gave the impression that there had been an increased incidence. Ease of reporting was further related to the 'culture' on a ward:

On our ward we've got quite an open... like, if there's an incident let's report it, let's sit down and, you know, the people who are there will sit down and write it out together. It will be, you know, on the day it happened or the next day: it happens fairly quickly. (Newly qualified staff, Site E).

However her colleague noted the need for feedback.

Staffing levels

In Site E the issue of staffing levels was raised by one respondent:

I think staffing is a major factor in patient safety... there just aren't enough nurses or healthcare assistants to each patient and particularly when you've got very confused patients on the ward... they wander off, fall out of bed ...we're not there when that happens but you can't physically prevent it.. (Newly qualified staff, Site E).

In Site B there was concern that there was pressure from trained staff not to do it 'right'. This was because nurses were perceived to work to routines and 'don't work smart' with the result that 'bad' practices persisted.

It was also the lack of the 'right' resources:

R1: You know all about patient safety (from your lectures) you are going to put it into practice. You get to a clinical area you find there are no slide sheets; the hoists are rarely used. (Newly qualified staff, Site B).

Improving patient safety education

Participants perceived that students needed training on how to resist dominant views that contradicted theory, and support and leadership to implement safe practice.

R1: They gave you the theory on patient safety but I think a lot could have been done on assertiveness, because as a student nurse you are sort of influenced a lot by the more senior members of staff.

R2: You do your best to put theory into practice... but if you've got a Sister who's telling you not to do that then you know it's an impossible situation that you find yourself in. (Newly qualified staff, Site B).

In order to manage these situations the newly qualified staff suggested a variety of measures specified by R2 as: *debriefing when you come back from your placements,*

specifically about patient safety; more support in placements including someone who comes to placements to say that students have been taught to use equipment and insist it is used; and better student support in clinical areas from practice placement facilitators (Newly qualified staff, Site B).

It has already been noted that working in the community was perceived by the newly qualified staff in Site B, to be a positive environment for promoting patient safety. Linked to this was the observation that community care *is proper holistic care* of which patient safety was a key component and integral to the dual notions of quality nursing care and the caring nurse.

In Site E the respondents identified that the most important aspects of their training in relation to patient safety education necessitated a duty of care to their patients and acting in their best interests:

R2:vulnerable adult training – being aware of patients' vulnerability and feeling free to document it and intervene if you do feel that your patient's safety is being compromised. (Newly qualified staff, Site E).

The importance of the university in teaching sound patient safety theory was highlighted by Site B respondents. Placements to consolidate clinical skills and promote patient safety was identified as a key theme in both sites with clinical experience being seen as the most important influence on practice, including 'bad' practice which could be mediated by learning to be assertive, and with supportive educators and clinical leaders. The explicit connection between quality of care and the caring nurse as an integral component of patient safety was also made.

Patient Focus Groups

There were three participants in the user focus groups at each site. For users at Site E three key points emerged in relation to the meaning of patient safety. These were:

Professionals look after the patient better than they can look after themselves:

They've got the intelligence and the education to take great care of you. (Patient focus group, Site E).

R1 gave the example of a positive experience from which she recalled a student nurse who was 'very good':

She was following the correct protocol, you know, like dressing my wound... and her bedside manner was very good and she was inquisitive and asking questions and she was being guided by the lead nurse (Patient focus group, Site E).

This student was seen to be technically competent, communicative (she had a good bedside manner) a good student (she asked questions) and she was being taught by a qualified nurse (ie all the ingredients were in place for positive learning and caring to take place).

The staff need to be on top of their knowledge / up to date with everything. As well as being reassured that the student was being well trained, staff on top of their knowledge

meant that they knew what they were doing eg: *giving you tablets or an injection... that you are getting the right dosage and were involved in cleanliness* (Patient focus group, Site E).

Trust is seen as important – being able to trust the system and the medical and nursing staff. Trust was about staff following up on what they said they would do, such as coming back to patients who they had taken to the toilet, or giving information as a follow up to a chat with the consultant: *so you know what he is going to do to you, then you go and talk to a nurse who then really lays it out... there's the possibility of MRSA... etc* (Patient Focus Group, Site E).

You very quickly realize who is a good nurse: whether they know what they are talking about; whether they're gonna come back when they say; who monitors them; how they conduct good practice... (Patient focus group, Site E).

The users recommended more communication eg patients being made aware of risks – and time spent by staff going through important aspects of staying in hospital eg knowing what was going to happen through detailed explanations and advice as to how to prevent infections.

In Site B the three interviewees had strong opinions about the emotional aspect of patient safety stressing how feeling safe is crucial for service users when they come into hospital.

R2: Your safety begins right at the start...when you come into hospital you might never have been to one before, so it's a frightening experience (Patient focus group, Site B).

They clearly linked patient safety and feeling 'safe' to the role of the manager and their influence on ward routines, as well as staffing levels:

R1: It comes from the top and if there is a culture within a ward that is a bit rushed, it may be – because they can't always determine what the staffing ratio to patients will be – but it may be determined by numbers of staff available to give that sort of personal care on admission, to ensure that people are secure. (Patient focus group, Site B).

The group had similar concerns to the users in Site E about the central role of communication and the importance of knowledgeable and competent staff in relation to patient diagnosis and administration of medications:

R2: Half of them don't actually know what's wrong with the patient and that I find shocking because there's somebody handing out medication from the trolley and they're quite unaware of what's actually the diagnosis of the patient. (Patient focus group, Site B).

Hygiene and cleanliness were also mentioned:

R2: The cleanliness, the hygiene of the staff was shocking. For three days this one nurse wore the same uniform. She came to work clean in her

ordinary clothes, but put the same one on from the cupboard. Already the safety of the patient's gone. (Patient Focus Group, Site B).

In terms of student learning about patient safety, the theory / practice gap and variations in students' experiences were identified:

... in one ward students had been given very in-depth training and in another ward it had been completely different (Patient focus group, Site B).

The Site B users had been directly involved in teaching students about patient safety and the students noted the importance of being able to hear 'real patients' stories' to be able to see them as individuals and not *medical problems*:

It's learning to see the patient as not just another medical problem, but as an individual, and having seen them as an individual, trying to fulfil their individual needs ... (Patient focus group, Site B).

The importance of the questioning student was again raised as in Site E. This respondent had a clear view of their role in encouraging students to challenge bad practice:

I'm seeking to challenge their established values... and get them to consider how they might challenge behaviours that are unacceptable (Patient focus group, Site B).

The users in both sites were aware that the students' ability to challenge was related to their place in the hierarchy, who they learnt from in practice and also to their ambivalent role in relation to qualified staff /mentors. This observation brings into focus the importance of trusting relationships, management and leadership in both the education and practice of patient safety to support best practice as well as challenge bad practice in order to ensure the patients' physical and emotional safety. For Site B participants' emotional safety emerged as a top priority as did the importance of their role in directly teaching about patient safety.

The Practice context

Case study sites Site B and Site E

The purpose of investigating the practice context was to explore how patient safety is undertaken in the day to day working of the NHS and the associated cultures to which the students are exposed in their placements and perceptions of patient safety in practice, policy and education while the practice observations permitted us the opportunity to systematically analyse patient safety in the practice setting to which the students were exposed.

Focus Groups with Practice Staff

In Site B six general nursing respondents were recruited and in Site E two mental health nursing respondents. Most respondents were trained mentors.

Perceptions of patient safety

The practice staff had an all encompassing view of patient safety which was patient focused:

I think of patient safety as principally being that anything you do with them they won't experience any harm from you hopefully, that you'll actually help them. But also that there are times when you have to take action in their best interest that they don't necessarily want. (Practice staff focus group, Site E).

Relationships and trust between nurse and patient were also seen as an important component of patient safety:

It's a joint relationship really. They (the patients) need to be able to trust you as well and be able to contact you when they feel able to... (Practice staff focus group, Site E).

One respondent noted that the definition was influenced by the student's stage of training:

The first thing the first years do is assessments for all the admissions: seeing patient safety right at the beginning... moving and handling; falls assessment; and they are aware of the documentation. (Practice staff focus group, Site B).

The practitioners in Site E also linked patient and staff safety to risk assessment which was very evident in the mental health setting. When going for a job interview they had been advised:

You'll be asked what you're expected to know and what you need to know to do the job, and one of the big ones that comes up every time is risk assessment and managing risk, and that includes your own safety as well... (Practice staff focus group, Site E).

(A colleague for example had been punched in the mouth by a patient without any warning).

Another respondent referred to the importance of risk assessment: 'every time you see someone you are assessing risk' as in the example of assessing whether patients were safe to take their own medication and manage at home.

Another theme related to policy decisions to discharge patients early from hospital which impacted on patient safety:

I think certainly in the community we're managing more. I suppose you could say we're compromising the patient's safety. (Practice staff focus group, Site E).

Learning about patient safety

The practice staff viewed the clinical areas as the primary setting where the students learnt about patient safety and how to adapt theory. This was an interesting contrast to the newly qualified staff in Site B who viewed the University as the primary place of

patient safety learning, although staff in Site B viewed college as the place they learnt before coming out on placements. Learning about patient safety therefore was about adapting theory to practice:

I think they (the students) are putting the theory into practice... sometimes you are not able to do it exactly by the book, given the situations you're in at the time. And it's not necessarily unsafe what you're doing – it's just that you've adjusted the theory into the practical situation (Practice staff focus group, Site B).

Another dimension to learning about patient safety was by example:

I think they learn a lot by example, because it's what they see on the ward... they pick up their ways from different staff nurses that they see – not necessarily their mentors... (Practice staff focus group, Site B).

Keeping students safe

The practice staff saw their role as supporting and keeping students safe in order to make sure they became safe practitioners.

One respondent in Site B discussed staffing levels in terms of the students who she said were very aware 'when there isn't enough staff around They get a feel for whether they are in a safe environment or they feel a little bit vulnerable' (Practice Staff Focus Group Site B).

In Site E the practitioner said:

I work closely with the students: I never let them work on their own (This practitioner also organised a ward induction for the students). I always say to them, 'if you don't feel safe or you don't think you've got the skills to do something, then don't do it, and just come to me and say I'm really sorry, I don't feel comfortable in doing that, and that is absolutely fine'. Students never work on their own. (Practice staff focus group, Site E).

In Site B the participants emphasised the importance of their role in relation to student learning and patient safety. They described the mentor's role as supporting students, facilitating their learning environment, assessment and working within the NMC code of practice.

The group also saw their role as a huge responsibility especially as they sometimes had to 'fail' students – often on patient safety issues, because they weren't safe to be left independently with the patients, usually because *they didn't have the thought process – they hadn't picked it up.* (Practice staff focus group Site B).

Cutting corners

The importance of working under pressure and its potential relationship to 'cutting corners' emerged as an important aspect of negative learning. One practitioner observed:

They learn with the pressures of just having a busy ward... I don't think it's cutting corners... but I think it is just adapting to the situation of the patient.
(Practice staff focus group, Site B)

One example given was that nurses would use a hoist to move patients which was quicker but did not encourage them to mobilise or promote their independence. In Site E, the respondents gave examples from their experiences of patient safety being compromised:

We had a lady that is nearly blind and with late stage dementia, so she used to get up and just walk... Some people, that would annoy them, that she was up and walking so they gave her medication to make her sit in a chair. But of course, it makes you drowsy: she stands up and what happens? She falls over, cuts her head open... (Practice staff focus group, Site E).

On the question of reporting the incident the respondent stated that as she knew the staff member responsible she sat down with her:

She said 'we've been so busy and we've been short staffed and everything'. So we sat and generally discussed how we could manage it better. (Practice staff focus group, Site E).

This comment had resonances with comments from newly qualified staff and the users. Both groups had been concerned that patient safety was often compromised either because nurses were taking short cuts to save time or were not following correct protocols and procedures. As the users had observed, if no feedback was given staff would continue to practise 'bad' habits. One way to give feedback was through the use of critical incidents as described by one of the respondents at Site E:

In our Trust, we've got a committee who evaluate all critical incidents and then they do a report and we're all given a copy of that report and what their findings are... (Practice staff focus group, Site E).

Reflections on patient safety education

The use of scenarios, problem solving and reflection

One of the respondents at Site B noted the importance of thinking and reflection for the current student compared with past approaches to training:

When I was training we just did it because you were told to do it; now you're told to do it but that you also need to look at different ways of doing it and think and reflect on what you're doing as well. (Practice staff focus group, Site B).

The mental health practitioners at Site E emphasised the importance of debriefing and clinical supervision.

There was also a plea for taking real live examples to the classroom including patients involved with teaching... We had a couple of people who would give the story of their experience of mental illness and some of that would have covered aspects of safety. (Practice staff focus group, Site B)

Such encounters were thought to encourage reflection and thinking on what actually happened in terms of good and bad practice and some of the outcomes.

Making students aware of policies and procedures

In Site B, one respondent described the systems and policies in place, such as incident forms, near misses, risk assessments – COSH assessors, control of substances and link nurses *who try and keep the staff updated and cascade information to keep us up to date.* (Practice staff focus group, Site B).

In Site E, the respondents recommended:

...making sure people are aware of, like, policies and procedures and things like making them aware of what could happen to them if they do not do something they've been trained to do properly... (Practice staff focus group, Site E).

The majority of the practitioners were trained mentors and emphasised the importance of this role as both facilitator and assessor in terms of ensuring the student was a safe practitioner and met the NMC regulations. Risk assessment was an important component of patient safety and was seen to be associated with the type of practice setting and the acuity of patient need. The policy drivers apparent in the NHS to increase patient throughput were seen as a negative influence on patient safety. The importance of reporting systems, feedback and opportunities to challenge 'bad' habits were highlighted within a culture of openness.

Practice observations

Observation sessions were conducted in acute hospital settings where undergraduate adult nursing students undertake their placements. In site B two observation sessions (12 hours in total) were undertaken on a 24 bedded medical ward with three six-bedded bays, three High Dependency and three 'normal' cubicles. During the first session one student nurse was observed. In the second session, three student nurses were observed. Five to six qualified nurses and one health care assistant were on duty on each shift. In site E two observations (6 hours in total) were undertaken on a 27-bedded surgical ward with three large and five separate rooms. The same student nurse was observed on both occasions. On the first shift there was a student nurse working as a Health Care Assistant (HCA). Four to six qualified nurses were on duty on each shift. Doctors and consultants constantly moved in and out of the ward throughout the period.

The ward environment

Site B was a busy medical ward. There were *almost no names on the white boards above each bed* (researcher notes) potentially compromising patient safety. A student reported there had been a lot of emphasis on infection control lately with Department of Health visits. Thrice daily checks of the bathrooms had been introduced as the nurses were held responsible if they were left dirty. Site E was a very busy surgical ward but described as '*calm and controlled*' by the end of the first session. On the second evening session the atmosphere was described as '*calm*'.

At each site there were cleansing hand gels outside the ward bays and cubicle doors and patient safety notices, posters and leaflets displayed throughout the wards and at

the nurses' station. There was an A4 sized poster on reporting 'near misses' at Site B and an 'Infection Control' notice board (student nurse comment to researcher: *mainly to show they are 'complying with regulations)* but '*many with extremely small writing*'. At Site E there were notices to 'Wash your hands!' and 'Help the NHS to prevent infection'. There was also information on MRSA. There were a number of patients being 'barrier nursed' in both sites.

How and from whom they learnt

Students were observed learning in a variety of ways. For example in Site B, third year students appeared to work as 'mentors' with second year students. Also in Site B, students were allocated groups of patients but with minimal direct supervision from trained nurses. On one occasion, a student requested supervision when removing a urinary catheter for the first time. The qualified nurse explained the procedure to the student but then told her to do it on her own.

A student commented to the researcher in Site B that she felt learning routines were important as it gave her a framework for remembering things – she felt that nursing should have some routines almost as a safety net so that things did not get missed or forgotten.

In Site E there was a third year student who had previous experience as a health care assistant (HCA) who appeared confident to work unsupervised. This student did not know who her mentor was after several weeks in the ward. She told the researcher: *she is very busy – you feel like you do not want to disturb them.*

Students also learnt informally by observing the qualified nurses, who varied in how well they acted as role models. For example in Site E the qualified staff provided a negative role model by being heard to openly criticise other colleagues (a district nurse and a consultant).

Students reported that their learning depended on their placement as expressed by students in Site B who commented to the researcher:

What you learn depends on where you are on placement and the opportunities there are for practising – eg removing catheters, safely administering drugs through going on drug rounds.

Some verbal direct one to one teaching was observed eg discussing and explaining particular patient care needs and/or diagnosis; preparing medication – although some opportunities to teach were missed. The ward handovers gave the students information about the patients and the care required. No formal group teaching sessions were observed. Students were observed to be undertaking '*all aspects of caring for patients*'.

Clinical and technical procedures

The students were observed removing venflons, disconnecting IV lines, setting up syringe drivers, measuring for 'TEDS' stockings, administering medications including preparing, checking, giving and ordering drugs. In Site B students sought understanding about the drugs through discussions with qualified staff and liaised with the pain specialist nurse on how best to manage one patient's pain.

Drug administration

There were instances in both sites of positive interaction between qualified staff and students during the preparation and administration of drugs. One less positive example was observed by the researcher in Site B when a student nurse asked the qualified nurse why a certain drug was being mixed with saline 'when everything else is sterile water'. The nurse replied: *I don't know, I don't question, just do – but I know I should!*

In Site E, 'sharps': two syringes and a half-drawn cannula and needle were observed lying unattended on a tray where patients and staff were walking past.

Infection control

Infection control entailed adhering to the infection control policy whilst performing care: washing hands; using gel, gloves and aprons; disposing of waste; barrier nursing; attending to wounds applying aseptic principles; disposing of infected materials safely. Staff overall followed these routines.

There were examples of breakdowns in routine hygiene.

At Site E, a patient with MRSA had diarrhoea and there was a patient safety notice alerting staff to the 'minimal handling policy'. The student prepared a mop and bucket to clean the room by cleaning them in the sink where the researcher had earlier been directed to wash her hands.

At Site B a patient called a student as she passed by –the patient asked for a bowl to be removed from her table ...*as there is stuff pouring out of the bottom – it's what the domestic was washing the floor with!*

Risk assessment

Students in Site B were observed assessing a patient for pressure sore risk.

Moving and handling

Nurses were observed assisting patients on and off commodes and assisting them while in bed to move position. It was noted that the 'drag' method of moving a patient had been used and on one occasion a mattress had been moved from one location to another by two students. Issues of staff safety were raised as one of the students involved had mentioned she was suffering from a 'sore back'.

Communication

At each site handovers were observed on three of the four shifts. On one shift at Site B there was a dictaphone recorded handover and catch up from the head nurse. There were also printed handover sheets. Specific instructions and updates were given eg which 'beds' were not to be got up, specimens to collect and medication and pain relief required. At Site E the handover in which the ward manager gave details of each patient, was constantly interrupted by a doctor, a dietician and a patient.

Verbal communication was observed between nurses, doctors, therapists and patients. In Site E the use of humour as a means of communicating was observed between a student and patient who had just returned from theatre on a trolley. *Student welcomes patient saying: so you are coming back to me? Patient replies: I*

always come back to you, Liz. (Researcher notes: *It is clear the patient is one of student's 'own' patients and they have good rapport*). Less good were examples of students talking about personal issues over the patient (although in Site B, the nurse later apologised). How nurses addressed patients was noted and the researcher judged that there were some instances of them being 'over familiar' with the patients. They were also observed in Site B talking to relatives over the phone.

Examples of written communication observed included nursing records and charts. There was a potential breach in confidentiality when notes were left on top instead of in a locked box and a patient report was left in the open for any one to see.

Interprofessional communication observed in Site E included doctors talking with nurses about the importance of documentation as a legal requirement and as a means of ensuring accountability. In Site B during observation one medical team ignored the nurses after seeing patients. In Site E, qualified nurses were overheard criticising an occupational therapist's views on patient rehabilitation and early discharge: *when they stay in hospital they do not improve they just lie there.*

Care and emotional safety

Caring attitudes were observed in both sites in relation to all patients – especially those who were very sick – and sadness at their approaching deaths. Students in Site B specifically asked patients for their consent to a bath or mouth care. One patient's wishes were respected when he declined the offer to have his teeth cleaned by the student, preferring to wait for his wife to do this when she visited.

In Site B the student nurse was seen reassuring a patient who had lost weight. The patient, who had cancer, had requested to be weighed. On noting that the patient had lost weight the student passed this information on to the qualified staff. A discussion ensued between the staff nurse and student over withholding information from the patient about his continual weight loss. The staff nurse advised the student: *...better not to tell him as it will only increase his anxiety...* The student subsequently lied to the patient, telling him an admission weight could not be found in his notes.

In Site E a mature student was able to deal with a patient in extreme distress following an episode of diarrhoeal incontinence. The student worked with a health care assistant to deal with the situation leaving the patient in a clean nightdress and out of bed while they changed the sheets. The student talked constantly and comfortingly to the patient who commented when everything had been cleared up: *I feel human now.* The researcher noted: *the student followed infection control procedures throughout using gloves and apron and disposing of the soiled material in the appropriate bag.*

There was no direct evidence in the wards of Trust policies or procedures or British National Formulary being used in either site as a check list. There was indirect evidence in relation to Trust policies eg wall notices on guidelines (especially in staff rooms). However, a student mentioned in Site B that there was an emphasis on infection control and there had been visits from the Department of Health. Students experienced opportunities and challenges in learning about patient safety. The majority of their learning in the ward appeared to be informal.

Students spent long periods giving direct patient care unsupervised by qualified staff and on one occasion there was apparent unwillingness to directly supervise a student catheterising a patient for the first time. There was the sense that the students learnt

through doing. Qualified staff gave patient information and instructions for their care during handovers and while preparing and administering drugs. The importance of a caring attitude and competent care as integral to patient safety emerged as a component of communication, as well as ensuring emotional and physical safety, which confirmed the insights gained from the interviews with practitioners. However, the practitioners' views that they never left students 'on their own' and facilitated their learning, were not observed in practice.

The Organisational context

At both sites Risk Managers and Nurse Managers were interviewed as representatives of the organisational context. Across the sites key external drivers mentioned included the Health Care Commission, the NPSA, the NHSLA, inspection bodies and more recently the increase in patient choice, and rise in consumerism:

...a key thing which is beginning to drive us now as an organisation... is around patient choice and wanting to say 'come to us because we're safe'. (Interview with manager, Site B).

However, the way in which policymakers have framed patient safety as distinct from staff safety was questioned:

We talk about safety generally, because if you have an unsafe situation for your clinical staff, it is inevitably going to rebound on patient safety. (Interview with manager, Site B)

Structures and processes

At both sites Patient Safety initiatives were implemented via a hierarchy of committees, groups and forums which involved various layers of management throughout the organisation. Profession specific systems for devolving responsibility were also in place or being updated:

Within our practice development and our nurse and midwifery structure I think there's room to look at a patient safety group... I will probably revamp the one that we have at the moment. (Interview with manager, Site E).

Nurses might be part of a Matron's and / or a Sister/Charge Nurses' forums. Another key factor in moving patient safety forward at Site B was how much authority and leadership the senior staff had, at ward or department level:

...the senior people in the clinical environment – that's the consultant, it's the ward sister, it's the matron, it's the senior physio – whoever it happens to be, but it's about them having ownership and leadership... authority to address some of the issues... (Interview with manager, Site B)

At Site E there was an acknowledgement of the need for ward level accountability but as the following quote suggests the transfer of that accountability was still in process:

If you don't get the accountability then you don't get people taking anything seriously. And, yeah, obviously engagement of all stakeholders and that

includes the clinical frontline staff, who often feel that they're removed from things but actually they are completely, you know, they are completely focused because they are delivering the care that creates the patient safety agenda really. (Interview with manager, Site E).

Some respondents viewed the role of the 'link nurse' and senior nurses as key:

The absolute key for me is the senior sisters on the wards: the matrons, the nursing, and what their understanding is, and what they're delivering out in the ward environments. (Interview with manager, Site B)

Also at site B existing posts had been refreshed and new posts created to reflect the organisation's culture of quality, and to push the patient safety agenda forward, while at site E there was a drive to employ nurses in the role of Clinical Governance Facilitators.

Key drivers and initiatives were operationalised locally through protocols and procedures. At Site B material was made available to new and established staff (and possibly students) through study days, induction, consultation, intranet, bulletins, newsletters and the 'cascading' of information. However, some respondents felt that more engagement was needed:

It just goes on the Intranet, and there's a kind of assumption that people will be motivated enough to look at that... well, usually they look after something has happened. So we're looking at how we can come to some kind of launch and publicise things in a much more positive way to bring it to people's attention. (Interview with manager, Site B)

In the Risk Management Policy and Strategy document at Site E there was a statement that any amendments would be communicated through systems in place such as the Intranet, staff bulletins, leaflets and notice boards. The researchers tried repeatedly to obtain policies on moving and handling and infection control but these were not forthcoming, because they were said to be being updated. Unlike Site B where a range of policies were available on the internet, such access was not available at Site E. The drivers for these priorities were reported to come from government, articulated through the local Strategic Health Authority. Risk assessment strategies and incident reporting systems were seen as pivotal, and to make it easier for staff to report incidents – clinical or non-clinical and near misses – computer based as well as paper based systems were in use.

At Site E a quality audit improvement programme had recently been put in place to monitor the quality of nursing care:

And I think the important thing is to say that you can do all these audits and all these risk assessments, but they need to be collated and presented at some forum and it's quite important to do that, and a lot of what we've done in the last few months is trying to make sure that everyone has a reporting mechanism for viewing this data. So it's open and transparent and we can do something about it if we need. (Interview with manager, Site E).

Ethos and culture

At both sites the organisational ethos was perceived as being based on 'looking after patients', and an open 'no blame' culture. Learning from incidents/complaints, underpinned by the risk assessment strategy and supported by training was seen as key:

Years ago there was a shame and blame culture... we've moved away from that to think about if you learn from your instances and create more training opportunities you are actually getting more... from learning from the incident than you are from shooting somebody basically. (Interview with manager, Site E).

However for both sites the move to a culture of learning from incidents was viewed as problematic in terms of report making and feeding back to staff:

It is easier to feed up than down... they participate in incident reporting or in investigations and so on and don't always get the feedback that they would like... And that's obviously not very helpful because it doesn't close the loop for them... (Interview with manager, Site B)

While respondents felt that some groups of staff may still perceive a 'blame culture', they commented on a move towards a 'no blame', open and responsive ethos at both sites. Overall in both sites the vision of an organisation where staff felt safe to report remained problematic.

Learning and training

Another key system for managing patient safety was Induction. Both Sites had 'standard' (Site B) or 'corporate' (Site E) induction that dealt with key issues. A second profession specific induction would take place at directorate, ward or department level. Such inductions were viewed as important mechanisms by which newly qualified staff learnt about the Trust's policies and procedures and individual disciplines received relevant inductions which incorporated key areas.

Another vital aspect for the Site B Trust was to fulfil the mandatory training requirements for staff which had major resource implications:

...from a strategic point of view... making sure that people have access to and participate in key mandatory training... But it's a huge effort to provide the training and then to release people to do that training and to make sure it's competency based. (Interview with manager, Site B).

Training was said to be key at Site E. There was also a new initiative at Site E involving clinical and non-clinical staff being trained together in risk assessment and some felt that there was also a place for Trust staff to be actively involved in teaching students:

What is new in this Trust – I think it is new to other Trusts – is integrating both the clinical and non-clinical people: is integrating the training so when we talk about risk assessments we don't have it separate – 'this is health and safety and this is the patient', we try and bring it together because of the grey areas. (Interview with manager, Site E)

Thus initial and ongoing training were viewed as important factors for the development of the patient safety agenda at both sites. Indeed Site B was developing the use of competency packs for nurses while Site E had identified a training need for student nurses around blood transfusions:

We've just stopped student nurses having anything to do with blood transfusion practically, because we realised that they had absolutely no training and therefore we are going to ensure that they have training.
(Interview with manager, Site E).

At both sites patient safety was viewed as a complicated problem which could be broken down into discrete parts. Methods of dealing with the issues included gathering information, the dissemination of information, and training. The need to improve the reporting systems and loop back mechanisms was acknowledged. There was a tension between creating an open culture and performance management measures to attain a safe environment, primarily for patients, and interaction between managers and frontline staff rather than a top down relationship.

Chapter summary

- Most lecturers struggled to define / conceptualise patient safety as a distinct concept
- Lecturers and students felt that patient safety is not a separate topic but underpins all aspects of nursing programmes
- Regulators, professional bodies and quality assurance agencies are influential in patient safety curricula
- Lecturers value and promote up to date, evidence-based safe practice
- For students, patient safety is learning to deal with real issues for real patients
- The 'safe or 'correct' performance is contrasted with variations in performance in practice
- Many respondents note that theory may be different to practice
- It is the responsibility of students to 'be on the look out' for errors and aware of hazards
- Patient safety involves building trust between nurse and patient
- Students felt they were taught defensive practice – what not to do
- Resource issues, peer pressure and client factors could influence safe practice
- Relationships with the mentor were crucial to student learning: availability, willingness to teach and attitudes to questioning were all important factors
- The mentor relationship affected how confident students felt to challenge unsafe practice in other staff
- Students were very aware that mentors assessed their placements and could pass or fail them
- Placements were important in consolidating learning about patient safety
- Students felt they should be made more aware of Trusts' approaches to risk assessment

- Most learning in placements was informal
- Students would value 'patient safety debriefs' after placements and more support in some clinical areas from practice placement facilitators
- Service users trusted professionals to practice safely and valued confidence in students to challenge unsafe practice.
- At both case study sites the vision of an organisation where staff felt safe to report errors appeared problematic

Chapter 6: Pharmacy

Overview / outlines of sites

There are currently 25 higher education institutions (HEIs) in the UK providing a four year Master of Pharmacy (MPharm) degree, 9 of which have been established since 2003. One HEI also offers the option of a five year sandwich course, which incorporates the pre-registration training year. The Royal Pharmaceutical Society of Great Britain (RPSGB) is responsible for the accreditation of all MPharm degree programmes. MPharm degrees are designed with reference to the RPSGB Indicative Syllabus, which has 51 items under the following broad headings: *The Patient; Medicines: drug action; Medicines: the drug substance; Medicines: the medicinal product; Healthcare systems and the roles of professionals; and The Wider Context.*

MPharm degrees are designed around a framework of 50 criteria as defined by the RPSGB, all of which need to be met apart from one: the use of interprofessional learning, which is recommended. The first five relate to EU requirements; the sixth to minimum entry standards for English Language and Mathematics (GCSE grades A-C or equivalent); 7-31 outline graduate outcomes, and the remainder (32-50) relate to the academic infrastructure supporting delivery. Unlike other health care professions, such as medicine and dentistry which receive clinical funding (band A) from the Higher Education Funding Councils, the MPharm is funded as a science, laboratory-based degree (band B). Consequently there is no formal allocation for learning in a clinical practice setting.

Pre-registration year

In order to register to practise as a pharmacist, graduates are required to undertake pre-registration training. All trainees need to complete 52 weeks of supervised and assessed training in employment and pass the Registration Examination for admission to the RPSGB register. Pre-registration employment can take place in either a hospital or community pharmacy setting. Other employers include primary care Trusts or industrial pharmaceutical companies but the training programme must include six months in a community or hospital pharmacy. Pre-registration training has to take place at a site that has been approved and had their training programme approved by the RPSGB, but these placements are not directly supervised by either universities or the RPSGB itself. Each trainee has a tutor who acts as an assessor of competence with the standards in a series of staged assessments (every 13 weeks) leading to a final assessment at the end of the 52 weeks, to gain registration, although at present there are no formal quality assurance procedures in place to ensure the competence of the tutor to assess. Upon entry onto the register, individuals are awarded the title *Member of the Royal Pharmaceutical Society (MRPharmS).*

Site outlines

Three schools of pharmacy were included in the project, two of which were selected for detailed case study due to their differing histories and characteristics (sites B and C).

Site B (case study)

The School of Pharmacy was established at Site B in 1921. Before receiving university status the institution was a technical college and a polytechnic. Entry requirements are a minimum of 300 points (ABC or BBB) at A Level, which must include chemistry and two other related subjects. Students normally study the equivalent of six full modules each year, but they can take up to eight. Teaching is mostly conducted through lectures, laboratory classes, seminars and tutorials. Problem based learning and other resources such as the university intranet are also used. Assessment include examinations, time constrained tests (some web-based), assignments, multiple choice tests, essays, reports and presentations. There is continuous assessment of coursework and end of year examinations. Students on average attend 25 hours per week; the remaining time (non-contact time) is to be used for directed and independent study, completion of assigned work and background reading. Half day visits to hospital and community pharmacy are organised in Years 1,2 and 4.

Site C (case study)

Site C's school of pharmacy dates back to the 1880s. At site C, the majority of modules are compulsory and the first three years of the course are common to all students, but there is opportunity, in the final year, to select modules to specialise in a chosen area (including microbial disease, immunisation or advanced neuropharmacology, influences on professional practice and cancer biology and therapy). In the first year, as well as core course units, students take foundation courses from mathematics, biology or academic literacy, depending on the subjects they studied at A level. Entry requirements include grades AAB-ABB at A Level, which must include Chemistry, either Mathematics or Biology, and one other subject (preferably a science or English). A variety of teaching and learning approaches are used throughout the programme including lectures, tutorials, practical classes, computer-based and enquiry-based learning sessions, group work. As a formal part of third and fourth year studies, students attend fortnightly clinically-focussed problem-based learning (PBL) tutorials which are run within the hospital setting by clinical pharmacist tutors. Portfolio based learning is also utilised alongside these sessions. The school has strong links to the local NHS, through three local teaching hospitals. Students' knowledge is mainly assessed in end-of-semester examinations by essay-type questions, short answers, multiple-choice questions and web-based assessment. Report-writing skills are assessed through a project and students' practical skills are continuously assessed during practical classes and practical examinations. The final degree mark is based on the results of second, third and fourth year examinations, the fourth year project and extended essay. New facilities and investment have recently been allocated to the school, including specialised aseptic laboratories and a new dispensing suite.

Site D

Site D is a relatively new school of pharmacy established in 2003. Entry requirements include A-level ABB-BBB (Chemistry is required together with one other science subject from mathematics, biology, physics). Teaching comprises a combination of lectures, workshops, practicals and tutorials and also PBL, interprofessional learning and virtual learning. PBL is introduced in the first year and students work within tutorial groups with a facilitator who is a practicing pharmacist. A variety of assessment methods are used within the pharmacy course, including essays, practical

reports, short course tests and examinations. Objective Structured Pharmacy Examinations (OSPEs) and Portfolio-Based Learning and Assessment are also utilised. Across the first and second year, eight practical visits (four in each year) are organised and include: a tour of a large pharmaceutical company; a half-day placement in a local community pharmacy; a visit to a pharmaceutical manufacturer with hands-on laboratory experience; and half a day shadowing a health care professional in one of the hospitals in the region. In the fourth year the visits/placements are slightly longer and include small group hospital placements, shadowing a GP, a clinical pharmacist and a pre-registration pharmacist.

The Academic context

Curriculum documents and course director interviews

The course documentation and the views of the course directors formed the first stage of the analysis of the formal curriculum, to examine patient safety education as planned and intended. All interviewees were pharmacists who tended to be involved in the delivery of the 'pharmacy practice' component of the curriculum, the exception being site C where the course director was a scientist and heavily involved in the delivery of pharmaceutical sciences.

Formal curricula

All three courses had modules with explicit patient safety content, either in terms of session name or intended learning outcomes. Not surprisingly, content related to core topics outlined in the RPSGB MPharm indicative syllabus. Common examples included:

- Drug absorption, distribution, metabolism and excretion and the impact of drug formulation, route of administration, dosage regimen, and disease and patient characteristics
- Microbiological contamination and aseptic procedures in the preparation of pharmaceutical products
- Legislation relating to the sale and supply of medicines
- The application of professional ethics
- Communication skills
- Safe dispensing and prescribing of medicines
- Disease management and care planning, including application of clinical guidelines, prescribing guidelines and medication review
- Clinical therapeutic uses of drugs, including contraindications for, adverse reactions to, and interactions of drugs, and their relevance to treatment.

Several patient safety topics were notably absent from the formal curricula at the sites, including: the epidemiology of adverse drugs events and medication errors; learning and reporting from adverse incidents; root cause analysis and human factors; quality assessment and building a safety culture.

From the course director interviews, the following summarises the findings across all three schools:

- Across all sites the following subjects were highlighted in relation to patient safety teaching and learning: dispensing; prescribing; medicines management; clinical governance; law; ethics; and communication.
- The main methods for teaching and learning about patient safety were lectures, practical exercises and role plays. Interestingly, site D was found to use incident reporting logs during practical classes relating to safe dispensing of medicines:

If there's an error found there's this book they have to go and record the error in, what the error was, who did the dispensing and who did the checking, so that they realise that the responsibility doesn't just lie with the person who's supplied the medicine but it's also the person who's checked it as well. (Interview with course leader, Site D)

- Accuracy checking was routinised through continuous assessment of incorrect or poorly written prescriptions at all sites. Role play exercises involving discussions of prescribing errors with simulated prescribers and counselling simulated patients about drug therapy were employed
- Interviewees at all sites felt that the driving force for patient safety pharmacy education was the RPSGB (in the form of their indicative syllabus), although learning to avoid serious adverse incidents that had previously occurred was also acknowledged
- Definitions of patient safety were mostly 'shared' and confined to drug safety – ensuring that the right patient is given the right drug, at the right time, in the right dose. The role of the pharmacist as a 'safety net' also featured:

...I suppose it's about getting the right medicine to the right patient in the right format, is one aspect. But also it's about... all medicines have a degree of adverse effects; some patients could suffer from those. So in terms of safety, I suppose one is preventing errors and second, monitoring patients. (Interview with course leader, Site C)

- All interviewees pin-pointed specific areas of the curricula, which they felt were pertinent to patient safety. However, several also suggested that patient safety was embedded throughout:

I think probably most explicit in the 'Prescribing' module [fourth year module]. We really give it a name and we talk about it as safety. Other than that, we probably don't use those terms, like patient safety... It's talked in more general terms. (Interview with course leader, Site C)

...there is nothing called patient safety as such. It's more, well it's dispersed throughout the different... the areas I have said... you could have a lecture on drug safety but you would still have to have it going all the way through the degree. (Interview with course leader, Site B)

- Some interviewees felt that links between the pharmaceutical sciences and pharmacy practice components of the courses were not explicit. An interviewee

from site C (with a science background) questioned whether students would link these two components:

...I'm not convinced at the moment that they actually connect the two... we tend to teach very much compartmentalised... and the students actually treat them as compartments and they almost tick boxes. And there's not a lot of cross-fertilisation (Interview with course leader, Site C)

- Site D, being a new school of pharmacy had recently developed a new curriculum, a formal intention of which was to highlight potential areas of integration between the practice and science components
- Common across the sites was the intention for students to learn the technical checking of prescriptions and dispensed medicines in the first two years, with a strong emphasis on the use of reference books to guide this (such as the British National Formulary (BNF), and Medicines, Ethics and Practice).
- In the final two years of the courses more complex critical decision-making about pharmaceutical care was introduced and patient safety learning was said to feature more heavily. This may be indicative of a 'spiral curriculum' whereby later elements build on and are related to existing knowledge, but, as mentioned above, concerns were expressed about linkage between the practice and science components at some sites.
- All sites featured hospital or community pharmacy exposure as part of the formal curricula, but this varied markedly in frequency and scope. All interviewees felt this should be increased as it was 'key' to patient safety learning, but funding such initiatives was identified as a major issue.
- Site B, was the most limited with three hour visits to hospital and community pharmacy sites in years one, two and four:

[Talking about placements] Well, they do nothing basically. In other parts of the country they've been a bit faster off the ground than locally. And for example in [site C] there are pharmacists employed in the big teaching hospitals where their job is really to organise the visits for the students. (Interview with course leader, Site B)

- Site C had fortnightly hospital clinical tutorials in the third and fourth year, involving interviews with patients. Site D ran a half day community visit in Year 1 and a full day community visit in Years 2 and 3, as well as one hospital visit in Years 1 and 2 and two x half day hospital ward sessions in Year 3 and one full day visit in Year 4. Patients were also invited to the university to give lectures about their conditions in Years 2, 3 and 4.
- All sites had strong links with hospital and community pharmacy practitioners who were involved in the delivery of the taught programmes at the HEIs.

Case study sites

Academic observations

Following the curricula analysis and exploration at three sites, two sites were selected for more in-depth case study analysis: sites B and C. This involved observations of six teaching sessions to examine patient safety education as delivered. The course

director interviews and analysis of curriculum documents informed the selection of the teaching sessions observed:

Site B

- *Dispensing examination* (second year prescription checking, dispensing and labelling - individual assessment)
- Prescription writing and clinical management plans (fourth year case based group work)

Site C

- *Orientation to pharmacy practice – dispensing the prescription* (first year lecture with prescription checking exercise – group / individual work)
- *Aseptic dispensing* (third year practical, lab-based individual assessment)
- *Interprofessional studies – Warfarin* (fourth year scenario based group work involving role play with lecturer posing as a doctor - group assessment)
- *Prescribing – patient safety in prescribing* (fourth year lecture with small group role play exercise)

At both sites, sessions focusing on prescribing were observed to be explicitly patient safety focused. The most implicit session observed was a practical lab based assessment at site C which covered aseptic dispensing. Staff running this session relayed information and standards to prevent microbial contamination, but information was not generally related to patients, which resonates with some of the comments from course leaders at this site. During the practical session, there was no discussion of the consequences of contamination other than failure of the assessment.

Informal curricula

In four of the six sessions observed, lecturers often used examples from their own practice experiences to illustrate patient safety issues:

I work in secondary care medical admissions. There's great potential for errors there...this morning I reviewed 26 patients' notes, and would say that 60-70% of these had some problem (Lecturer, Site C)

There were several instances where lecturers highlighted that students would encounter different situations once in practice and would have to use their own professional judgement on patient safety issues:

No right or wrong answer... you need to be pragmatic when writing clinical plans... you need to think outside the box. (Lecturer, Site B)

... Some scripts are for terminally ill patients. Would you be willing to break the law? You may be when you are a professional; if the patient really needs it you can make this decision. (Lecturer, Site C)

The approaches to patient safety varied between the observed sessions. Two sessions at site C emphasised the importance of eliciting information from the patient, demonstrating a belief that patient safety could be increased through effective communication. One of these sessions also emphasised a system-based approach: *Systems can prevent things like this occurring.*

In other sessions, emphasis was placed on rules and regulations to be followed to prevent litigation (as opposed to prevention of a patient safety event): *If an inspector comes you'll get in trouble.* Although a more patient focused justification for regulations was provided by another lecturer: *It's all about patient safety.*

Student focus groups

Students focus groups were conducted with second and fourth year students at both case study sites to examine patient safety education as received.

Formal curricula

Students at both sites identified patient safety elements in their courses, which corresponded with those identified by the course directors, again mostly in the pharmacy practice component. Students at site C mentioned a number of science modules but acknowledged that patient safety content was implicit in these. At both sites dispensing classes and law were highlighted in relation to patient safety learning. The main suggestion from participants about how to improve patient safety education was to increase practice exposure and clinical education earlier in the MPharm course in order to gain experience in real life settings.

Students' definitions of patient safety were similar at both sites, and mostly related to medication safety (as did those of the course directors), although others were mentioned, such as: safe environments, patient/professional relationships, data protection, infection control and safe systems.

Informal curricula

Related to the academic observations, students described the personal anecdotes given by lecturers as memorable instances of patient safety learning. These ad hoc unscripted instances were also witnessed during the observations and could be described as informal learning. The background of the lecturer was described as important and some indicated that they viewed those in practice as role models:

[Name of lecturer] has got loads of stories about things that have gone wrong and how they sort of rectified it... I learnt quite a lot from the stories... the main thing which surprised me was that if the doctor recommends a particular strength, there's so much onus on the pharmacist to spot that and the pharmacist can obviously get in quite a lot of trouble as well if the wrong dose goes out. (Year 2 pharmacy student, Site C)

I think learning from clinical tutors and people who are really in practice is more influential and more inspirational... it's not just like learning from what's in a book – it's from what they are doing and, you know, they're a kind of role model. (Year 4 pharmacy student, Site C)

Summary for the academic context in pharmacy

- Patient safety content was evident in the curricula at all three sites, and included core topics such as dispensing, prescribing, medicines management, clinical governance, law, ethics and communication.
- Patient safety content was reported to be embedded throughout the courses and sometimes implicit, particularly in the pharmaceutical sciences modules.
- There appeared to be a lack of explicit linkage between science and practice modules at some sites, although site D stated that they had made the integration of these aspects a formal intention of their course.
- Staff and students alike, across all sites felt there was a need for greater clinical practice exposure during the courses, to enable students to witness and translate patient safety theory into practice.
- Higher education funding at band B was perceived to negatively impact on the level of clinical practice exposure on the courses, although there were marked differences in the nature and level of placements across the sites.
- The informal curriculum was found to play an important role in patient safety education. Students valued the practice backgrounds of many of their lecturers and the real-life anecdotes used in teaching sessions. The findings indicate that these individuals are often viewed as role models, which suggests that second hand experience may be valued as a result of the limited first hand clinical experience available to many of the students in the MPharm programme.

The Practice context

The data in this section are derived from observations of students' formal practice exposure on the two courses and focus groups with practitioners involved in these sessions. This section also draws on findings from the student focus groups described in the previous section. Graduates of the two courses, undertaking their pre-registration year in either community or hospital pharmacy also participated in focus groups at both sites. One focus group with newly qualified hospital pharmacists was also undertaken at site C.

At site B, two three-hour visits to a general hospital were observed. On both occasions the students observed were 'overseas' students, who were already qualified pharmacists in their own country and undertaking a course to enable them to practice in the UK. The organisation and format of these visits was the same as those undertaken by the undergraduate students. Involved in the focus group were a junior pharmacist who helped with these visits and a senior pharmacist who coordinated visits, but did not attend them.

At Site C, two three-hour clinical tutorials (one third year and one fourth year session) at a teaching hospital were observed. The focus group included one clinical pharmacist tutor who runs the sessions. The other respondent was responsible for summer placements, pre-registration training, and newly qualified staff.

The majority of exposure to the practice context takes place during the pre-registration training year, after graduation from the MPharm programme. A half-day observation in a community pharmacy with a pre-registration student was undertaken at site C in order to provide insight into the nature of pre-registration training and its potential role in patient safety learning.

Observations of formal practice exposure

At site B, both sessions were led by a clinical pharmacist. One session involved a visit to a pre-admission/assessment ward with the pharmacist selecting two patients and talking the students through the patients' notes, drug histories and conditions. Some of the students also had a brief opportunity to talk to the patients individually. This was followed by a visit to the medicines storage area for a discussion with the 'stores' manager. The session finished with the students working through a number of medicine information queries that the pharmacy had received. The second session followed a similar format but did not involve patient interaction on the ward.

The clinical tutorials at site C focused on the management of long-term conditions and were designed to supplement and coincide with learning from university-based lectures. Both sessions observed took place in the same hospital, but differed in approach. The third year session was tutor-led, involved students working through a paper case about cardiovascular conditions and visiting the hospital wards (without the tutor) to interview and review the notes of in-patients with the condition. Two students presented their findings from the patient interviews they had conducted in the previous session, which were assessed by the tutor. The fourth year session involved problem-based learning, with more in-depth focus on a mental health case. Students then interviewed a psychiatric nurse and psychiatric clinical pharmacist asking questions that had arisen during the case review. This session would typically involve interviews with patients but due to the nature of the topic, professionals involved in their care were interviewed instead. In this session the students were based in seminar rooms and did not enter the wards.

Patient safety content

In both of the site C sessions, patient safety arose in discussions related to medication safety, side effects and potential drug interactions. In the year 4 sessions on schizophrenia, discussions also focused on support for the patient and understanding the illness. In the year 3 session infection control also featured.

At site B, there were moments scattered throughout both observations when patient safety messages were given to the students: 'Store manager explains that not all drugs kept are the cheapest, and that some cheaper ones all come in the same coloured box: *Imagine that on a shelf! Pick the wrong box and...! Some of the packaging of the cheaper drugs is bizarre*'.

Day-to-day practice

In the hospital setting, the use of alcohol gel rubs appeared to have become routinised for the students at site C. The tutor did not remind the students to use this prior to ward entry, presumably trusting that this was fully understood. The message was reinforced, however, when asking students to show the researcher where this was

located. There was also a strong presence of NPSA 'clean your hands' posters on the ward.

At site B, the lack of gel rub use on entering or exiting the wards was observed in both sessions. This *may* indicate that this was an accepted practice – at least for the pharmacist running the session. This could have important implications in terms of role modelling.

Overall the students undertaking hospital visits and clinical tutorials at both sites were not heavily exposed to day-to-day working. Consequently the extent to which they would start to internalise everyday practice or cultural norms may be limited. At site C, students had some interaction with pharmacists and other health care professionals, but did not observe them in practice. They also experienced patient interaction, although interviewing patients reflects only one part of the pharmacist's role and other tasks performed were more akin to university based tutorials (eg paper cases). At site B it was noticeable in both observations that no interactions with other professions occurred, except a brief moment when the pharmacist was approached by a nurse on the ward. Students at this site had little patient exposure, with some having none. They did however gain exposure to medicine procurement from the perspective of the pharmacy stores manager.

Student views of formal practice exposure

Students at site C described their clinical tutorials as more effective for learning about patient safety than theoretical learning in lectures:

R2: I think I always remember more what we've done in those tutorials, because it's a real person you're talking to and you can say, "well that's the woman who's been taking steroids for 25 years cos no-one ever thought to stop them, and oh look, she's got osteoporosis." Whereas you sit in a lecture and learn about that and you sort of vaguely remember it but when you're doing it...

R5: It reinforces everything that you learn. (Year 4 pharmacy students, Site C)

Students at site B indicated that their clinical visits were more limited, with some mentioning site C as an example of a course with greater formal exposure. Students at both sites indicated that they would prefer more formal clinical exposure and several compared the MPharm to other health care degrees such as medicine and nursing which have longer formal planned placements.

Practitioner views of formal practice exposure

Patient safety content

The clinical tutor at site C felt that patient safety was not always addressed formally in the clinical tutorials but were *things we may allude to rather than specifically talk about*, but did mention that NPSA alerts were often brought to the students' attention and that the introductory session touched on confidentiality; what to do if the patient is unwell; who to report an incident to; and infection control, but this was not specifically labelled as 'patient safety'. Overall the practitioners at both sites felt that Trust policies

would have little impact on students, although the clinical tutor at site C stated that she might introduce students to a policy if it were relevant to the topic, eg MRSA screening guidance.

Day-to-day practice

Respondents at both sites distinguished between undergraduate practice exposure and that experienced during voluntary summer and pre-registration placements. The lack of shadowing and exposure to day-to-day practice on the formal course was considered a limitation by respondents at both sites:

[Summer placement students] spend a lot of time shadowing the pharmacist just on the wards so they actually see – every time they take a drug history for example – double checking allergy status... you'll see them checking the dose is appropriate, checking for side effects. That's obviously only a small number of students that will have the summer student experience. (Clinical educator, Site C).

...the pre-reg's rotate around...I think that's really useful because if you work with one person all year then you can't help but pick up their habits, and that's not always a good thing. But if you work with loads of different people you think: 'oh, I really like how they do that...' (Clinical educator, site B)

At site B, the pharmacy visits were described as *an artificial situation that is set up for the student visits* and respondents questioned whether the students would have the opportunity to pick-up on the realities of practice during these times. More clinical exposure was seen as crucial to improving patient safety education:

I had a couple of students that went to see a patient quite recently... she told them that her community pharmacy had dispensed her with four times the amount in terms of a dose of one particular medicine, which had then caused her liver impairment ...the students came back to me and they said we've actually seen an example of an error that happened...that will stick with us forever, we'll think a lot about our dispensing and checking in the future. (Clinical educator, Site C).

I think it would actually improve their learning experience if they were exposed to more practical situations... I think it opens up a lot more doors for asking questions and perhaps not just taking the lecturer's word for it... I would say to some of the students: 'do you have any questions?' and you'd just get a load of blank faces back. (Clinical educator, Site B)

Students' views on informal practice exposure

It was apparent that many students felt the need to supplement their formal learning with informal work experience. Students who had voluntarily secured work experience in hospital or community pharmacy during the university vacations or weekends indicated that these experiences were crucial for learning about patient safety:

R5: I learnt more in the summer than I did all last year at uni, just being there for on hand experience. (Year 2 pharmacy student, Site B)

R7: I did my summer placement in the 3rd year. It was only for three weeks in hospital and I think I learned more in that 3 weeks than in my last three years. That was how I felt: that's the impact it had. (Year 4 pharmacy student, Site C)

Through these experiences the students were gaining exposure to health care systems and organisations, customs and rituals and aspects of the profession 'taken for granted'; as such, these experiences could be described as part of a *hidden curriculum*. These experiences were said to cement existing university-based learning and also introduce new learning, such as learning about safe systems and processes:

R2: ...something as simple as keeping the cupboard tidy so that one label doesn't stick to another bottle that you don't even think about... that's not a thing that would come up on the course, that's just something I learned from, like, doing that job. (Year 4 pharmacy student, Site C)

Making, reporting and learning from errors:

R2: You definitely learn from your mistakes! ... the process of trying to fix your mistake was horrendous, and you just felt, 'I'm not doing this any more, I'll be careful next time'... We just have to be extra careful and you have to always make sure that you always report the mistakes you found. Because if you put it in the report then maybe it warns other people as well. (Year 4 pharmacy student, Site B)

Professionalism and 'poor' practice:

R5: I worked under a locum... and the way he advised the patients... I was not impressed at all, because this lady came in and she was depressed. You could tell she'd had a really bad time... she hadn't slept for days; she was really agitated and not happy. And she said, 'I don't know what else to do.' She actually asked the advice of a pharmacist... And he looked at the prescription and he just gave it her. He goes: 'Oh just take a holiday, you'll get over it, you'll be fine.' (Year 4 pharmacy student, Site C)

However it should be noted that not all the students were gaining this exposure; the number of placements was said to be limited and securing a placement was dependent on student motivation.

Observation of pre-registration training

The community pharmacy observation at site C was vastly different to the other sessions observed, as it demonstrated day-to-day practice in a busy chain pharmacy. The majority of the tasks performed by the pre-registration student appeared to be routinised (eg checking prescriptions, labels, stock). Several instances were also witnessed when the pre-registration student was called away from these tasks to talk with patients, demonstrating patient interaction and counselling and also the frequent interruptions to safety related work. Pharmacists were routinely observed asking patient safety related questions: 'Are you taking any new medications?'; 'any side effects?' The pharmacy team gathered at the back of the dispensary for a short team meeting during which individuals disseminated information to the group such as asking people to sign after completing tasks 'because there's been a few mistakes'. During

the observation an incident relating to a missing prescription item was also observed, involving patient, pharmacist, dispensing technician and GP surgery; the cause of this mistake was eventually traced back to the GP not issuing all the items on the prescription.

Graduate reflections on academic and practice contexts

Overall the graduates confirmed many of the findings from the student focus groups – that patient safety was sometimes implicit on the courses; that the clinical tutorials (for site C) were helpful for patient safety learning; that there was a need for more clinical exposure formally on the course. Some were critical of the majority of practical experience being weighted in the pre-registration year and this being separate from the university course:

R3: ...you go to Uni to learn the theory, you go to do your pre-reg, you go to learn the practical. Although there's a little bit of practical dotted throughout the course, it's not kind of like a gradual build up to go to pre-reg, it's like...

R1: Yeah. Just get thrown into it.

R2: It's a total of about nine hours on the... Less than that - eight or nine hours on the wards talking to patients, and then all of a sudden...

R3: You're doing eight hours a day...

(Pre-registration hospital students, Site C)

Others felt that even though they lacked clinical experience on graduating, the pre-registration year served the purposes of bridging this gap. Graduates described differences between education and practice, with the main factors being the learning about systems and processes in the workplace and putting theory into practice – corresponding with the views of the undergraduates. They also felt that they were learning about patient safety through the pre-registration year and commented on the importance of learning through doing. This was also confirmed by the newly qualified staff at site C, who stated that the pre-registration year and first year qualified were the steepest learning curves. They also spoke about the accumulation of knowledge and the difficulties pin-pointing where learning had taken place:

R2: ...it's such a long time ago that you feel like you never use any of your degree, but we must have!

R3: ...I suppose with disease management and all the aseptic type stuff, you do use it: you just probably don't realise you're using it

(Newly qualified hospital pharmacists, Site C)

The newly qualified pharmacists spoke about the reality of practice: how it differs from theory and involves the use of professional judgement, which they concluded would be too difficult to teach entirely at university. Several graduates indicated that the course content was not now relevant to them in practice, but opinions on this tended to vary depending upon the sector they had entered. This demonstrates the difficulties

involved in providing undergraduate education which caters for community pharmacy, hospital pharmacy, research as well as the pharmaceutical industry.

Summary for the practice context in pharmacy

- The findings suggest that patient safety messages are evident in the clinical tutorials / hospital visits at both sites
- Practitioners involved in these visits and tutorials stated that there was a need for greater clinical exposure and acknowledged that these experiences were not necessarily representative of real life practice.
- Similarly, the findings confirm that the majority of practice context exposure takes place through the pre-registration year with some exposure occurring through informal summer placements or work experience for undergraduates.
- As result of limited exposure to the practice context, practitioners doubted whether students would gain much exposure to organisational culture.
- The findings also exemplify the marked difference in frequency and scope of exposure between the two sites. For students at site C Trust, infection control procedures had become routinised, possibly as a result of the frequency of these visits and the instruction given by clinical tutors. Level of patient contact was also noticeably different.
- Informal work experience during vacations and weekends also appeared to form an important part of the patient safety education of the students and can be viewed as a hidden curriculum. These experiences offer learning about safe systems, how organisations function, risk management and professionalism - factors which students felt were not adequately covered on the MPharm course. However, as these experiences are informal, students could also potentially pick up poor practice or 'bad habits' through this exposure.

The Organisational context

Organisational documents

Fifteen documents across the two sites were examined:

- *Admission, Transfer and Discharge Procedure* (site B)
- *Whistleblowing Policy* (sites B and C)
- *Moving and handling policy* (sites B and C)
- *Hand Hygiene Policy* (site B)
- *Infection prevention and control* (site C)
- *Medicines Policy* (site B)
- *Pharmaceutical care standards* (site C)
- *Incident reporting policy and procedures* (site B and site C)
- *Quality and Clinical Governance Presentation used at Induction of new staff* (site B)
- *Induction policy* (site C)
- *Complaints policy* (site C)
- *Risk management and safety strategy* (Site C)

In several of the documents examined, the importance of establishing and maintaining an appropriate culture was highlighted. For example, incident reporting policies at both sites highlighted the importance of cultivating a no-blame, learning culture:

...a positive and non-blaming incident reporting culture is pivotal [and] will enable us to learn (site B).

As a learning organisation the Trust is committed to developing a more open culture... When an adverse event occurs, the important issue is not who is to blame, but why did the systems fail and what factors helped to create the conditions in which adverse events occurred. It is important that the organisation and individuals involved learn from the event. (Site C)

Pharmacy-specific or related policies tended to focus on accuracy and checking. The Medicines Policy from site B stated that (among other things) it aimed at:

...safe administration of the correct dose of the correct medicine, by the correct route, at the correct time in a correct and legal manner to the correct patient (Site B)

Use of the word 'correct' suggests a level of exactitude and accuracy (and potential for error) which is not visible in many of the other policies and procedures. Similarly the Pharmaceutical Care Standards from site C was heavily focused on safety checking:

Check dose is correct...Check patient understands...Check TTO against Cardex... (Site C)

This document however, also stressed the importance of professional judgement, acknowledging the realities of practice and the limitations of written procedures, which was not always evident in other documents:

The 'RACE' model is provided as a template but individual pharmacists will develop their own system.

These are intended as a guide rather than to replace the pharmacist's individual professional judgement. (Site C)

Organisational interviews

Four interviews were conducted in total. At site C Trust the Head of Clinical Governance and Principal Pharmacist were interviewed. At site B Trust, the Head of Clinical Governance and Risk and a Pharmacy Manager were interviewed.

Interviewees at both sites stated that the organisational approach to patient safety comprised a number of factors:

- Incident reporting systems – both sites used online reporting systems. Site C had used this for over 5 years. Introduction to the systems featured as part of the induction process for new staff at both sites. The Head of Clinical Governance at site C highlighted some of the limitations of incident reporting systems generally:

Even though that doesn't, or won't control outcomes of care, it will tell us if there are particular failures within certain services that need to be addressed that are high risk...what you see in an incident reporting system is far removed from what the root cause often is.

- Root cause analysis – in order to address some of the limitations of incident reporting, site C had introduced root cause analysis:

We've also tried to work out the way in which the organisation learns and responds to these events, and so our challenge has been to set up a framework that would allow us to understand the root cause of failure.

The Head of Clinical Governance and Risk at site B was also involved in the training of senior staff in root cause analysis.

- Staff training and assessment – inductions for new staff were pinpointed as being patient safety focused at both sites. Site C respondents spoke about both mandatory and ad hoc training related to patient safety. Engaging staff in mandatory training was however identified as problematic. The principal pharmacist at site C commented that much of the mandatory training was driven by the need to satisfy the NHS litigation authority:

One of the drivers for the Trust is the NHS litigation authority: it's like insurance. We pay an insurance premium and if we can show that we're as safe as possible we pay less of an insurance premium. So there are different levels. So we're currently at level two, which is very good and there's a level three – which is the best – and we're currently trying to go for level three. But what that involves is needing to make sure that people have done all the necessary education.

The Head of Clinical Governance also stated that in the future there was a need for training to extend beyond learning about systems and processes:

I think in the ideal world I would like to be able to describe to you a situation where that training is about service improvement. So the training we'd be delivering is the sort of training that changes practice and changes behaviours.

- Policies and procedures – Many policies and procedures were identified which had relevance for patients' safety:

The problem is that there are lots of policies and procedures about safety.
(Principal pharmacist site C)

At site B the Head of Clinical Governance and Risk stressed the rigour of the Trust's policies, the approach to validation and the accessibility of these policies to staff. Interviewees at site C, however, pragmatically acknowledged the limitations of such policies:

...this is just a piece of paper, and a piece of paper on its own won't change behaviours and how people see things. But we have them there and we're working hard to try and put them in place so that we can control the quality of care.

- Devolved responsibility – interviewees at both sites spoke about the importance of directorates:

So the key is about engaging people and then making it their own business and them owning their own risk... for that directorate to say, 'It's our risk, we own it, this is what we need to do to prevent it from happening, to limit the risk' and I think that's the most important thing that they're trying to do at the minute. (Site C)

The Head of Clinical Governance and Risk at Site B stated that there was a lot of patient safety information available in the Trust but:

...how it filters down to the staff within the wards – and therefore to the student – depends a lot on what happens internally in the specific directorate.

- Influences – at both sites the DH, NPSA and professional bodies were identified as major influences on patient safety within the Trusts. At site C the management, particularly the Chief Executive and clinical leaders were said to be influential, as was 'fear':

The key influence, I would say is fear and that's multi-stranded. It would be fear of blame, embarrassment, shock, fear of harming patients, fear of prosecution, fear of losing your job, going to the GMC or the NMC or the other regulatory body.

- Culture – Interviewees at both sites spoke about developing a safe, open, learning culture. The Head of Clinical Governance and Risk at Site B spoke about the Trust's approach using 'safety champions' to influence others:

...we're looking for safety champions. That works on the 'tipping point' philosophy for change management: we've done a lot of work with that and we feel that following the tipping point process we need people in there whose behaviour will change that of others and influence others.

The Head of Clinical Governance at site C was more sceptical about an organisation's ability to define and change culture:

...pinning [culture] down and then changing it, and by definition moulding it into something else, is a really abstract thing to do, but I think, by and large, our culture is one where people are willing to challenge, which I think is really important: open with each other, open with patients... acknowledges its shortcomings. I think it's got some maturing to do in that it needs to be more open about what it needs to do to resolve issues, and perhaps the culture needs to be more rigorous about getting to the safety priorities and seeing demonstrable improvement on them. So I would say we're doing some things really well but I also acknowledge whatever culture is it will have to change going forward.

Summary for the organisational context in pharmacy

- The previous two sections have demonstrated that undergraduate students on both courses would have limited exposure to organisational culture.
- At both organisations, unsurprisingly, patient safety was a high priority.
- Strategies and approaches to patient safety were similar, although slight differences were apparent and site C appeared to have a more holistic approach to patient safety.

Chapter summary

The findings from this chapter indicate that pharmacy students highly value the practice context for learning about patient safety. Informal learning from teaching practitioners was assigned credibility by the students, indicating the importance of role models in practice. 'Ad hoc' voluntary work experience was another important factor which was said to compensate for limited formal clinical exposure and under-addressed patient safety elements such as systems and processes and professionalism. In the academic context, patient safety content was often described as embedded throughout the curricula and particularly implicit in the pharmaceutical science components. Across the three courses examined, core content was often similar, but several patient safety topics were notably absent, including the epidemiology of adverse events and error, root cause analysis and human factors. Similar findings emerged from a study in the USA (Johnston and Latif, 2002) which identified a lack of standardisation concerning medication error curricula across schools of pharmacy, with some failing to include components such as human error, medical error and root cause analysis which the authors classified as core domains of medication error education.

Reference to the organisational context was also absent from course content and exposure to this during formal planned visits and tutorials was limited. The majority of this learning was weighted in the pre-registration year after MPharm graduation, with some students gaining exposure to organisational and practice contexts through their voluntary work experience. Funding for formal clinical exposure was a major issue affecting the schools, but our findings demonstrate the marked difference in frequency and scope at the two case study sites.

Findings from a review of UK schools of Pharmacy in 2004 (Wilson et al, 2005; 2006) resonates with our findings. The authors found that formal placements varied across the schools and that students wanted these to be increased. The RPSGB accreditation process was found to be the main external driver for curriculum design, with little evidence that changes outside the sector of pharmacy were a driver, leading the authors to conclude that pharmacy education development was insular from other health care professions. They also found that in most schools the main emphasis of the MPharm was science rather than practice or clinical skills.

In April 2008, the government's pharmacy white paper (DH, 2008) acknowledged limitations in undergraduate education in relation to the '*opportunity for undergraduate pharmacy students to develop throughout their education a professional, patient-focused, clinical approach to practice*'. To address this, the government has called for

'meaningful clinical context and experience throughout the undergraduate programme' and aims to achieve this through the potential integration of the pre-registration year into the undergraduate course. The findings from this chapter are particularly pertinent in relation to this emerging pharmacy policy and could help to inform ongoing discussions in this area.

- Schools of Pharmacy should ensure that patient safety content runs throughout the MPharm course and in particular ensure that students gain early exposure to patient safety content.
- There is also a need to ensure patient safety learning is not too embedded or implicit so that it becomes lost, especially in the pharmaceutical science components of the curricula.
- Similarly, compartmentalising of patient safety is not recommended and is contrary to the role of the pharmacist. A spiral curriculum which sees integration between pharmacy practice and the pharmaceutical sciences is supported.
- In relation to the academic formal curriculum, areas to be addressed in relation to patient safety include a focus on the epidemiology of adverse drug events and medication errors; learning and reporting from adverse incidents; root cause analysis and human factors; and building a safety culture.
- Using teaching practitioners and clinical tutors on the courses can be seen as a strength to build upon in relation to patient safety learning. Students valued learning from these individuals; assigned them credibility; and viewed them as role models. It is crucial that these individuals understand how they can help students learn about patient safety and are given sufficient opportunity to do so.
- The shadowing of pharmacists and other health professionals was distinctly lacking during the clinical visits and tutorials at both case study sites. The opportunity to observe and learn from those in practice settings should be exploited wherever possible.
- On the whole, the findings support the need for greater and more sustained clinical exposure throughout the MPharm, to enable linkage between theory and practice.
- The level of clinical exposure on the MPharm appears to be patchy across HEIs, as evidenced by the difference in frequency and scope across the sites. A recommendation would be to aim for greater standardisation in levels of clinical exposure across the schools.
- Students should have the opportunity to regularly meet and interact with patients. To increase exposure 'expert patients' could be utilised for patient safety learning in university based sessions.
- NHS risk management and clinical governance expertise was rarely utilised in pharmacy education. Building upon existing links between universities and NHS Trusts, managers in patient safety related roles could be encouraged to play an important role in the education of MPharm students.
- We have no evidence that greater clinical exposure would lead to the formation of safer practitioners, although it was clear that practical and applied methods

were viewed as more successful by students in relation to learning about patient safety.

- Higher education funding is clearly an issue in relation to clinical exposure on the MPharm course which needs to be addressed.

Chapter 7: Physiotherapy

Introduction

This chapter addresses the ways in which physiotherapy students learn about patient safety, and some of the issues which affect the teaching, learning and practice of patient safety in academic, organisational and practice 'knowledge' contexts. Across the UK there are 37 institutions offering Physiotherapy degree programmes, with full and sometimes part time options (for BSc Honours) and accelerated forms. The latter are usually for graduate entry or equivalent and offered at Masters level. In this study, our focus was on full time undergraduate provision as this is the main mode. In most cases the award of BSc(Hons) follows completion of a three year course. Every physiotherapy student completes 1,000 hours of clinical education, usually made up of five or six different placements. All graduates are registered as physiotherapists with the Health Professions Council. In addition, where programmes are approved by the Chartered Society of Physiotherapists, graduates are eligible to seek status as a chartered physiotherapist on qualification. Two Physiotherapy degree programmes were included in our sample, both of which were selected for detailed case study (sites B and D)

Site outlines

Site B

Site B offers a 3 year full time BSc (Hons) Physiotherapy course which has been established since 1990. Entry requirements are 320 UCAS tariff points to include a science or health care subject, or (Scottish Highers) Grades ABBBB at Higher level or Grades ABB at Advanced Higher Level, to include a physical or behavioural science.

The course reflects the Government's commitment to interprofessional learning in health and social care. Clinical placements occur in all years and are usually between two and six weeks duration. The course that was studied has now been revalidated with core professional skills and collaborative working running through all three years of pre-registration physiotherapy, occupational therapy, nursing and midwifery curricula.

Year 1 serves as a foundation year in the core areas of professional practice. Musculoskeletal, cardio-respiratory and neuromuscular physiotherapy are studied while students also develop therapeutic skills relevant to physiotherapy. Broader key health care skills such as team working are developed alongside other health and social care students. Year 2 further develops core physiotherapy skills and provides a focus on physiotherapy management. It also contains three clinical placements and an elective placement, as well as interprofessional modules. The final year focuses on integrated clinical reasoning and the contribution of physiotherapy in health care, in relation to individual practice and as part of a multidisciplinary team. Students complete a research project and modules developing more advanced levels of physiotherapy/health care practice.

NHS placements used include several in District General Hospitals and tertiary care centres, as well as specialist outreach and intermediate care services. Placements take place in a range of Trusts in the local area, serving urban, rural and commuter

populations. The area has pockets of significant affluence, but also experience of considerable deprivation. The age profile of the area shows a higher proportion overall of people aged 65-79 compared to UK norms, and a greater proportion of people aged 16-24 in the city. The area is statistically less ethnically diverse than the UK as a whole, though some shifts have taken place since 2001 probably attributable both to migrant workers and asylum seekers.

Site D

The course at Site D is a 3 year BSc (Hons) course in Occupational Therapy and Physiotherapy which has been running since 1993. Entry requirements are typically BBB for physiotherapy and BCC for occupational therapy. It is a modular, credit based course with some of the modules being studied by occupational therapists, physiotherapists, and speech and language therapists together.

Lectures, practical workshops, seminars, and group work are all used for learning and there is an emphasis on problem solving and the use of reflective practice and portfolios. Approximately a third of the course is spent on practice placements of 2 – 8 weeks duration each in a wide range of community, acute health, and social care settings. Assessment takes the form of written tests, fieldwork, portfolio reflection, presentations, and workshop practicals.

The total number of occupational therapy and physiotherapy undergraduate students is 200 and there are 41 members of staff. The School is part of a Faculty of Health which also includes medicine, nursing, and psychology education. There is a strong emphasis on interdisciplinary working and teaching, with compulsory interprofessional learning between the four health student courses in the first two years of their education.

The NHS context of the school is a rural area with large market towns, a dispersed population with pockets of deprivation, a relatively ageing population with smaller than UK average ethnic mix (though rapidly increasing in numbers and diversity of national backgrounds, with large influxes of migrant workers).

The Academic context

We examined Patient Safety education as planned, delivered and perceived within the academic context of the two pre-registration physiotherapy courses. In site D, because of the integrated nature of the course, we were able to explore the application of a generic rather than a specific PS curriculum.

Education as planned – the curriculum

In initial contacts with course directors or equivalent, relevant curriculum documents were requested. The material looked at from each site was as follows:

Site D	Revalidation submission 2001	Student handbook years 1, 2 and 3 (paper and electronic)	Placement educators' handbook (paper and electronic)
Site B	Programme specification / course handbook	Module descriptors	Supplementary document presented at validation

Each document was searched for occurrences of the phrase ‘patient safety’, and for other words which the team felt were relevant. However, the ‘safety’ vocabulary used in these documents focused principally on words such as ‘safe’ and ‘risk’.

Courses	Sites		Total	Mean
	B	D		
Adverse			0	
Critical			0	
Incidents				
Error			0	
Failure			0	
Harm			0	
Mistakes			0	
Near misses			0	
Negligence			0	
Safe	13	18	31	15
Serious			0	
Significant events			0	
Risk	2	9	11	5.5

Documents analysed in relation to physiotherapy discussed a range of topics relating to safe and effective professional practice. For both courses examined, the relevant material identified was quite limited. In Site B documentation, patient safety was mainly implicit in learning outcomes for modules at all stages: [students] ‘*will implement safe, effective and efficient physiotherapy treatment programmes in response to individual need*’. Communication with colleagues was related to safe practice. Clinical educators were expected to assess ‘safety and competency to practice’ at a threshold level. Documentation from Site D highlighted the importance of safe practice and risk assessment in all years, principally in the context of professional development. Critical incidents were identified as an important strategy in monitoring and learning from practice.

Education as planned – the course leaders

Four interviews were undertaken with course leaders across the two sites – 3 with physiotherapists and 1 with an occupational therapist.

Defining patient safety

All interviewees viewed patient safety as pervading the whole practice of physiotherapy and gave broad definitions which included ensuring high quality care as well as minimizing harm and errors. In addition to physical safety, psychological, social, cultural and spiritual safety were also mentioned:

I’d say patient safety is ensuring that the patient has the highest quality of service provided to them, that they’re physically safe when whatever is being done to them is being done to them, that the person or the health care professional actually, doing what it is they are doing to them, they are qualified to do that. ...Safety is more than physical safety as well, its safety in terms of, that they’re ensured confidentiality and all of those things around their personal safety and safety in terms of their psychological or mental health that they are

secure within what's happening to them, not being made vulnerable in any way psychologically. (Interview with course leader, Site D)

Intentions of patient safety education

Following on from the definitions of patient safety as integral to the whole of physiotherapy practice, respondents said that learning about patient safety was found throughout their courses. They perceived the intentions of patient safety education as concurrent with the course aims of producing competent professional practitioners and relating to knowledge, decision-making and attitudes as well as to technical skills.

However there was some concern that compartmentalising patient safety elements would make it more difficult for the students to integrate their learning in practice and thus undermine professionalism:

To me professionalism is about the making of decisions, is the integration of all the information that you have got and being aware of all the legislation that supports a particular client group, the contra-indications to that client group. So it's all in the reasoning process, and to me that's about being a professional... so I am not sure that there is a benefit. You can move it in two ways: you can give a student all the single lectures on all the health and safety stuff that you need, or you can say: right, it's integrated and by the time they reach the end of the programme they will have considered the contra-indications, or different conditions and all the different modules, so that there in practice it's something that they think about all the time, it's not confined to one bit of practice.

(Interview with course leader, Site B)

The view of patient safety education as being integral to all teaching and learning made it difficult for the interviewees to cite specific topics but (when prompted), manual handling and risk assessment were common topics. Therapeutic manual handling skills are fundamental to physiotherapy practice and practitioners are liable to cause harm if they do not perform these skills safely. Other topics mentioned were equipment, falls, communication skills, child protection and hand washing.

Student safety was often mentioned alongside patient safety, in particular lone working because home visiting is a key part of practice:

It's about protecting the student as well as the patient. (Interview with course leader, Site B)

Translating intentions into practice

Respondents felt that learning in relation to patient safety was likely to be more evident in practical sessions and on placements. In particular at Site D 'safety' was an explicit component of placement assessment and students would fail the placement if they failed on 'safety'.

Safe technical skills are reported as being taught by demonstration, practice and assessment:

In the first year they do a formative practical assessment to ensure that they can safely do certain skills before they go out on their first placement (Interview with course leader, Site D)

Respondents at Site B were feeling under pressure to introduce specific patient safety teaching – but this was not so at Site D.

At Site D the course is inherently interprofessional and physiotherapists spend considerable time learning with other professions, with core teaching in common with OTs, and also the interprofessional taught component. Respondents at Site B were feeling under pressure to introduce specific patient safety teaching: an interprofessional module has been introduced, with specific patient safety content

Influences on patient safety education

Course leaders interviewed reported that patient safety had always been an integral part of their course and was not subject to recent influences. However they cited the media and fear of litigation as reasons for increased recording and reporting of incidents for the protection of students as well as patients.

Education as delivered: The focus groups

Focus groups were carried out with students in their second and third years of the degree programmes and with newly qualified physiotherapists.

Views of Patient Safety

Students appeared to progress at different stages in their understanding of ‘patient safety’. They moved from a simple understanding and absolute concepts (mirroring concern with pass/ fail assessment) to seeing that rehabilitation needed an element of risk, and that they would need to balance this, knowing their own limitations and knowing the patient – weighing up the risks and benefits.

In year 2, in general patient safety was said to encompass *everything we do with patients keeping them safe physically but also mentally* (Second year student, Site D) and avoiding mistakes that could cause a patient harm. It applies in all settings:

It's about making sure that that person in whatever setting – whether it's a care home, whether it's a hospital, or whether it's in a GP surgery – wherever that person is, is safe (Year 2 physiotherapy student, Site B)

Specifically, moving and handling was mentioned (mostly in relation to staff safety); keeping up to date; and avoiding contraindications when undertaking interventions. Students at this stage recognised that patient safety went beyond physical safety: Patient safety was not only about safe direct treatment or care but also about promoting safe behaviour by the patient:

It's about while you're with a patient in a consultation and also about helping them to be safe while you're not there (Year 2 physiotherapy student, Site D)

Good communication, both spoken and written (in the form of information leaflets) was seen as important, and students linked this to the therapist's responsibility towards the patient when in their own home. Students appreciated that a therapist often has to say whether they think a patient is safe to be discharged, and must identify and communicate all potential risks. Even at this early stage the students were aware that patient safety was a complex concept involving professional judgement. Students show an ability to weigh two different thought through ways of working:

I think it comes to having to weigh up both views and deciding which you feel happiest with. (Year 2 physiotherapy student, Site D)

In year 3 students were increasingly aware of the complexity of patient safety:

You can't just define patient safety in one sentence. (Year 3 physiotherapy student, Site D)

They mentioned the whole environment and feelings of safety for staff and patients, with more discussion of risk, raising issues around equipment safety, safety of interventions with regard to contraindications, and protecting patients from others.

Students indicated that they needed to consider safety in a variety of contexts – as in patients and in the community. They noted that it applies to the patient's total care not just their own intervention:

Protecting from harm whilst they're in your care. (Year 3 physiotherapy student, Site B)

Safety was not just about physical welfare. Psychological wellbeing was also recognised as important:

Physical safety or emotional type safety. (Year 3 physiotherapy student, Site B)

Staff safety was mentioned in relation to needle stick injuries and manual handling. Students were aware that professional judgement is needed in relation to patient safety because protocols for procedures are not always black and white and therapists will often have to accept a small amount of risk in order to help a patient to progress with rehabilitation.

If they are denied all risks then what you would be doing probably wouldn't be effective and you wouldn't see the results. Even if it's just progressing someone from like a frame to a stick there's always a small risk involved (Year 3 physiotherapy student, Site D)

Year 3 students recognised the importance of training and competence. Students also noted that safety may be individual to the patient and that risk assessment, and learning to weigh up risks, was a critical element of practice:

Because what's normal for one person isn't normal for the next. (Year 3 physiotherapy student, Site D)

Students increasingly recognised that patient safety is intended to become second nature. From their experience on placements, year 3 students also appreciated the systems constraints associated with safety, and the impact on colleagues from other disciplines.

It was also inferred that good communication with patients but also carers would improve safety:

You also have to make sure they're gonna be safe, say if you're giving them something to do like exercises or something at home. You have to make

sure they're going to be doing them safely and make sure that they do understand what you're asking them to do; make sure you're giving them information that they can understand, so they're going to be safe when you're not there and pass things on: get the carer involved to make them more safe. (Year 3 physiotherapy student, Site B)

The newly qualified practitioners mentioned many of the same areas, but also included 'all of the acts' meaning official regulations and being *up to date with the policies* (NQ staff, Site D) which the students had not mentioned. A major focus within Trusts was manual handling which was reflected in their responses:

In addition to the legislative context and its implications, they were aware of the importance of record keeping. Beyond the necessity for recording clearly, newly qualified staff were aware of the demands of the culture in which they worked: that they should demonstrate safe, justifiable and evidence based practice. Newly qualified staff also appeared to be more conscious of the need to develop effective relationships with patients as part of making them feel safe:

You need to be in a situation that you can transmit that to the patient, that what you're doing is safe, and they can trust you with that. (Newly qualified staff, Site B)

Education as experienced

Students stated that they learnt about patient safety all of the way through the course and that safe practice was 'drilled into them'. However, it wasn't always perhaps explicit, or something that needed to be formally learnt. Much of the time the students were talking about the learning that they had undertaken in the practice context – formal and informal – when they were on placement, rather than the more formal learning on campus. Assessment was highlighted as important on campus in driving and consolidating learning about patient safety. At both sites, a pass/fail examination was a critical gateway to practice:

I think that was a big shock. When you think of everything else that you have to go through... and that to me – I mean, I did speak to colleagues about it and I was, like: I can't believe I might not be in year 2 because of health and safety! So that was a massive learner for me. (Year 2 physiotherapy student, Site B)

All students mentioned learning from their peers and from university staff and placement supervisors. Students reported learning from their peers in lectures where they had demonstrated skills and been criticized by other students.

In Year 2 on both courses there was a sense that more visible teaching about patient safety was occurring in university settings. University based learning was seen as providing the building blocks from which professional competence could be constructed in the practice setting – or as one student put it – acorns, to grow into oaks. Placements were an important locus for learning – for example to clarify the management of someone with complex problems, or more generally, learn what *not* to do! In placements, several features were highlighted which facilitated learning. Firstly, placements generally provide an induction which encompasses safety issues. Secondly, in placements teaching is generally one to one (in contrast to some other

disciplines) so that students have close supervision in learning new skills. In addition, knowledge can be applied systematically to real patients. As well as reality, repetition can assist learning. Some students in Year 2 (for whom the practice setting was still not very familiar) said that they had seen some evidence of different messages from theory and practice in relation to handwashing and watches:

I wore a watch on placement because you need to keep a check on the time and a couple of times I did forget to take it off when I was with a patient, but I noticed that some of the other physios and other staff did actually wear a wrist watch. (Year 2 physiotherapy student, Site B)

Newly qualified staff reflecting on these discontinuities focused more around the need to learn to operate in a flexible, adaptable way. Students and newly qualified staff drew a distinction between role play and the reality of practice:

It's not real until you go on placement, and then you're like: oh my God, I can't get this person up! And that's when it really sort of... you know, there's only so much you can take from a seminar, you have to be actually doing it to realise how... (Year 2 physiotherapy student, site B)

Perhaps, importantly, memorable learning is experiential – and thus in practice. Some students were persuaded that the greatest learning might be found when things go wrong.

Reflection on incidents and actions was also an important element of learning. Newly qualified staff felt that not only was it helpful to talk with patients, but that if students were working with 'expert' patients, the students could gain from patient feedback. For both sites 'safety' was a key pass/fail criterion of the placement assessment. However, some students felt that there was a degree of tension between learning from their placements and proving that they were competent enough to pass the assessment.

Role models

Educators on placement were described as role models (both good and bad). The way they dressed, the way they behaved and the way they taught could all influence students' learning:

And I just learned so much more from him, because he was so methodical and he was really precise about what he did and he really thought about everything. Whereas she came in in a scruffy tracksuit, tea spilt down her t-shirt, scruffy pair of trainers, and equally I felt like that was the way she dealt with things... that really sticks in my head as a learning experience. (Year 2 physiotherapy student, Site B)

With some educators there was mutuality in learning. Some students described how they had witnessed poor role models. For some, it seemed that rather than blindly following, they might inwardly criticize these. Challenging or even questioning apparently poor or idiosyncratic practice was seen as hard. Educators have more experience:

You can't really say anything because you're going against somebody who's qualified, like, for 30 years or something and they're still doing that old style. (Interview with course leader, Site D)

Some educators may be perceived as more open to mutual learning than others. There is also the student's continuing concern with passing exams, and the power thus mediated by the educator:

You don't feel inclined to go: 'well we haven't learnt it like that. Why are you doing it that way?' because you do feel like you're just there and you need to pass and if you're going to be asking difficult questions you think you might rub them up the wrong way and end up not being... (Year 2 physiotherapy student, Site B)

It appears that clinician educators, who play a key part in patient safety education, need to be first-rate in their techniques and genuinely open to challenge from novices. Students need to be empowered to question and 'challenge' unsafe or different practice and question procedures and processes without fear of being penalised. However, students commented that such problems are not common. One mechanism for overcoming the difficulties of challenge might be in developing the skills of service improvement – changing behaviour from 'below' using models that empower individual practitioners to reflect on practice and change others. Students also said that they learned from patients and interprofessional teamwork on placement.

Competence and risk

All of the students and the newly qualified staff said that learning to conduct procedures competently, being aware of contra indications and being able to assess the possible risks helped them to ensure patient safety. Physiotherapy students often reported attending training in placements. Training could cover the physical environment, or be more focused around for example infection control.

Year 3 students emphasized learning to be competent and to identify contra indications at university in a relatively controlled environment. Competence is a basic requirement, for example, in relation to electrotherapy before moving to real risk management:

For example when we were using ultrasound devices and pieces of equipment like that, it would very much be the first thing to understand what the equipment was, how it works and then contra indications and questions you'd have to ask, and then when we do practical sessions that's what the lecturer will be looking for: that we'd gone through – that they'd seen us go through – the contra indications, maybe done a sensation test. (Year 3 physiotherapy student, Site D)

The students felt that they needed to be able to judge their own competence, and would gradually build up experience about how far they could ignore cautions for specific techniques:

That's the thing – knowing your limitations and potential risks (Year 3 physiotherapy student, site D)

Teaching in relation to risk assessment worked slightly differently for the two courses. Students at site D could not recall being taught about how to formally assess risk via checklists, forms or graphs, although they acknowledged teaching about continually assessing the risks inherent in physiotherapy treatments as incorporated in an ad hoc way into placements. At Site B risk assessment was explicitly done under supervision in placements in earlier years, then delegated to the student in year 3. The integrated approach to patient safety education was largely adopted by both courses, with no specifically labelled modules. However, students at Site B identified an interprofessional module focusing on service improvement related to patient safety as generating more reflection on the issues involved.

Newly qualified staff stressed learning about contraindications, and some teaching of risk assessment at university which was reinforced on placement. They saw learning about evidence based practice as part of the process. They emphasised the importance of risk-taking in clinical practice:

I don't think I've learnt any more, but I think I've become more confident since I finished uni and I don't, like, think about it massively now – it's just a little bit like driving a car: you don't really think about it, do you, after you've done quite a lot of it, and I trust my own judgment a bit more now. When we were students I'd be scared to stand a patient because of what could happen, things like that, but you've got to take the risks – well, not massive risks, but you have got to take risks. (Newly qualified staff, Site B)

Evidence based practice

Newly qualified staff also talked about the use of evidence in relation to safe practice, and the need to be seen to practice in an evidence based way. They identified the need to modify 'the correct' or 'standard' way of doing things for ease, or, in particular, to do 'what's best for the patient'. Sometimes 'what's best for the patient' might also reflect the need for the practitioner to protect him or herself. However, in some cases the standard way might be appropriate, yet not used. Dealing with colleagues whose practice is perhaps less up to date is an important challenge in managing the environment as a practitioner, and in particular, how to lead change.

Themes and topics: Manual Handling

Manual handling was identified in the literature review (Chapter 2) and in curricula examined (Chapter 4) as a key area for physiotherapists in achieving patient safety. At Site D students said that manual handling had been taught at the beginning of the first year, with theory on campus and a practical session in the nursing centre, where the lifting equipment was available. The theory session was felt to have been too long as a lecture block. Students suggested that it could have been broken into two sessions. They had also been taught at university about the safe use of other equipment. At site B, year 2 students who had recently been out on placements noted the difference between classroom based learning during year 1 and the application of theory in the practice setting:

When you're at uni and you're practising something for half an hour and you're maybe just doing it a little bit that's different from when you're actually working and you might be adopting that same position ten, twenty, thirty times a day... (Year 2 physiotherapy student, Site B)

Site D students also felt that they had learnt more about manual handling when on placement. They talked about ‘ticking the box’ in the university setting:

Everyone sort of had one practice and that was supposed to tick the box.
(Year 3 physiotherapy student, Site D)

One student had since had manual handling training in another Trust and noted that without that experience she had not been able to recognise either her own limitations or those of the training. At site B, students noted the importance of assessments in encouraging them to learn:

We actually did have practical exams, though, on [moving and handling], which made you – forced you, I suppose, and rightly so in some ways – to look at what you were doing. (Year 2 physiotherapy student, Site B)

Looking back, newly qualified staff felt that they had lacked confidence initially, but that over time repetition in practice helped in building confidence. Anxiety was identified in relation to their own capacity to keep the patient safe as well as passing assessments.

Themes and topics: Infection Control

Another area of great importance for the NHS in considering patient safety, and highlighted in some curricula (Chapter 4) was infection control.

Year 2 students from site D could remember a lecture that they had had on infection control that also included a practical hand washing session for some of the students. Some had attempted the NHS on-line training. Students felt that the lecture had impacted on their behaviour. Other students felt that they could influence their educator’s behaviour. At site B year 2 students noted that they had had more teaching in placements, related to specific situations, than they could recall in the university.

They went on to indicate that they had had some formal input on specific infections during placements – but as students indicated elsewhere, the pattern of placement experience was relatively ad hoc. Year 3 students did not mention infection control until prompted at either site. Students noted differences in the culture of placements:

I’ve been on placements where – particularly community placements – where I went and bought myself hand gel because my supervisor wasn’t very fastidious about cleaning hands between patients. (Year 3 physiotherapy student, Site D)

Newly qualified staff at site D thought they had had a lecture on infection control but emphasised that it was reinforced on placement. Newly qualified staff at site B referred only in passing to ‘*hygiene in the workplace with washing your hands and things*’. (Newly qualified staff, Site B)

Themes and topics: Communication

The importance of effective communication was another area emphasized in curricula (Chapter 4) in relation to patient safety. However, learning about communication was mentioned only briefly by students. To some extent it appeared to be understood through experience. In considering definitions of safety, year 2 students at site D commented:

A lot of the time patients get so much information they're just bamboozled and they just can't take it all in, so it's making sure... I think leaflets or giving something in writing to go back to is another way to make sure they're safe.
(Year 2 physiotherapy student, Site D)

However, this was not perceived as a topic which had been taught explicitly. (though it had been observed).

Perhaps it was an area whose relevance to patient safety was only understood as students made the transition to practitioners. The newly qualified staff talked about learning to communicate safely both orally and in writing. This was taught in lectures and practical sessions at university and was reinforced with practice on placement. Newly qualified staff recognised the potential penalties of failing to communicate effectively through records. Again, classroom learning was felt to be reinforced in placement experiences:

There was a lot, wasn't there, and then again placements reinforced that as well because you were always writing notes on placement and the supervisors were giving you advice and counter signing everything you write so... (Newly qualified staff, Site D)

Themes and topics: Drugs

While the management of drugs (which was seen as another significant topic area in other professions' curricula) is not a major area of competence for newly qualified physiotherapists, it appears that it still forms a part of students' learning – principally being aware of the implications of specific drugs for exercise or other treatments.

Variation in Experience

Not all students receive the same classroom curriculum at the same time because of timetable and grouping issues – but they may all do so by the end of the course. However, some students noted differences of approach between tutors. A second year student who was reflecting on this felt that it had affected colleagues' success in an examination. Another variant is the placement location – the experience which it can offer – and the quality of the supervisor. Newly qualified staff at site B felt that there was some imbalance in the learning available from placements.

Nevertheless, the group recognised some of the constraints on the university and discussed the potential variety of patient types in individual placements. They suggested that a major factor in the quality of placements in relation to patient safety was the attitude of educators and the relative density of staff.

Students at this level were also becoming aware of the diversity between individual hospitals and Trusts, although still – perhaps naively – assuming that there should be consistency of practice. The degree of supervision available or accessible, particularly to more senior students, was also seen as an issue.

Overall however, newly qualified practitioners could reflect that the range of material which was taught in the classroom, not all of which they had the chance to gain experience of in placements, might be of value when moving to other areas or Trusts to work, or perhaps reflect new directions in practice.

Interprofessional learning and working

Effective interprofessional working has been proposed as a key element of achieving high quality safe care for patients. Both courses, though differently constructed, had a significant interprofessional dimension. The curriculum documents indicated a number of ways in which interprofessional learning might be linked to patient safety. Classroom based opportunities in particular could be seen as 'boring'. Students felt that some groups engaged in interprofessional learning (IPL) more than others.

Learning about other professional contributions could take place in a variety of ways during placements. Students are familiar with the work and training of other professionals and the need to work closely with other staff – particularly nurses. An important element for students and for patient care is in the development of effective interprofessional communication. This was specifically addressed in the classroom, but also evident in placements.

In effective teams, communication is very strong. Where communication is not good, the patient's experience and rehabilitation may be compromised:

Therapy comes along and says: oh get up you can do it, and we'll take half an hour but we'll transfer you onto the chair and you can go on the commode and we'll do it. And then they do that once in the morning and then you come along the next day and the patient says: oh no, last night they hoisted me! And that's no united front. And so patients get confused as to what's safe because the nurses are saying: oh we must hoist you. So they're thinking: I must be hoisted I'm not safe enough to transfer myself (Year 3 physiotherapy student, Site D)

Where patients get conflicting advice from teams they may feel very unsafe. Willingness to be proactive in communication with other team members can also be important in designing and delivering appropriate treatment interventions. It may be that shared management of risk makes professionals feel safer, but as seen above, patients may also feel safer when a team is communicating well. At both sites it was recognised that workforce constraints impacted on the ability of other disciplines to collaborate, though leadership and culture were also identified as important:

I think the big barrier to patient safety is lack of staff. And if you see someone positioned or slumped in a chair and you know that it's not comfortable for them and they need to be hoisted and re-positioned in the chair, and no-one's around to help you, then what can you do? (Newly qualified staff, site B)

Newly qualified staff viewed this dilemma from a fresh perspective – highlighting the relative inexperience and lack of training of many of those with whom they were working – and their need for training:

Where I work now is a rehab centre for people with spinal injury and brain injury and it's so short staffed. We've got a lot of new staff who don't really know a lot about manual handling and I think the physios seem to get a bit exasperated that they don't get a lot of help. But I think it's just that the people who work there don't understand how important it is to position

people correctly, and they just need the right training really. (Newly qualified staff, Site B)

Students' learning about patient safety was influenced by their tutors, their practice supervisors and the patients that they met. After qualification workforce issues, Trust and wider national policies and regulations were also influential.

Good, bad or indifferent learning?

The question asked (see Academic context interview guide) assumed that students can identify what they have learnt and why. However, in many of their answers, respondents cited specific examples. In most cases the students referred to practice placements. For some students, a particular placement – and the patients encountered – had generated significant learning:

If you're getting them up for the first time that's a huge responsibility in terms of thinking about you keeping them safe, really. (Year 2 physiotherapy student, Site B)

In practice situations, students build up a portfolio of examples to draw from in future practice (as for example Fraser 1999). Small teaching groups and opportunities for one to one teaching were also appreciated. Reflections with peers were valued. Exams and assessments were also described as effective in motivating learning:

I: Which do you think have been the most successful in helping you to learn about patient safety?

R: The xx exam! (laughter) (Year 2 physiotherapy student, Site B)

Asked what could be done better, the issue that most of the students – particularly at site D – agreed about was that for manual handling they would like to see shorter theory sessions more practice. with real patients and repeated sessions – before & after placements. The level of teaching could be reviewed, and the topic made interprofessional given the real world environment in which students found themselves.

Clearer criteria for assessment of patient safety in placement were requested – possibly to incorporate one or more examples from practice. Students also suggested that greater involvement of 'real world' practitioners would enhance their confidence in the teaching they received. Better knowledge about infection control (of the sort which some students had accessed through Trust programmes) was also felt to be desirable at site B. Year 3 students at site D requested more teaching on risk assessment and resuscitation. Everyone responding felt that greater direct involvement of patients in the education process would be valuable.

Unemployment and patient safety?

At the time of this study, there was significant difficulty for physiotherapy graduates in finding jobs. Two newly qualified practitioners who were unemployed at the time of interview (10 months after graduating) were asked how they were seeking to maintain their skills to practice safely. Both had paid to attend workshops and training events. Other respondents who had found jobs after a long gap suggested a need for local update training in manual handling in particular.

Education as delivered: The patients' perspective

Interviews with patients involved in the design and delivery of the physiotherapy programmes were carried out to determine their views about patient safety and how it was learnt. The patients immediately thought of infection control as essential to patient safety, having heard about it in the media. However, they expected that professionals had been trained not to undertake potentially unsafe actions. They also referred to the patient's own responsibility not to take unsafe actions:

They never put me in a situation where I could fall over or do anything even the first time I stood up. There was plenty around me to make sure that I didn't do anything that I'd fall over and hurt and they wouldn't give me a crutch or walking stick... they convinced me that yes I can do this and the rest is sort of history and such, but they never left me in a position where I felt physically vulnerable, no. (Patient focus group, Site D)

Patients thus perceived their safety as a matter for negotiation between them and the relevant professionals. They also emphasized the importance to patients of 'perceived safety' – of 'feeling safe' – and good communication was thought to be key to this:

... from my point of view – I know everybody's different – but I'd much prefer somebody to say to me: I've never heard of it; I don't know what it is: I'll have to go and find out. (Patient focus group, Site B)

Comparisons

Physiotherapy students and patients define patient safety as covering all aspects of practice, in particular in being aware of possible contra indications to treatments and patient's psychological as well as physical safety. The nature of their work means that definitions include safety in the community and the need for professional judgement in balancing the risks and benefits of rehabilitative treatments. As students move through the course and qualify they appear to recognise that decision-making about safety will involve power sharing with patients, and are more aware of systems within a model which has become more clearly articulated. Staff safety is seen as closely related to patient safety, in particular in relation to manual handling techniques. Year 3 students and the newly qualified appeared to be more aware of official systems and constraints in practising safely.

The Organisational context

Many of the policies and procedures examined focused more on *how* things should be done – procedures – than on *why* they might be necessary. Moving and Handling Policies examined focused primarily on 'risk'. Operational Policies and Procedures for reporting and management of accidents and incidents suggested in one case that incident reporting 'will enable us to learn', and set this in the context of both impact and likelihood of recurrence.

Systems within the Trusts could be streamlined to meet the needs of students and new staff. Effective dissemination of information about patient safety incidents was seen as challenging on the ground. Telephone 'hot lines' were established in some sites in an attempt to make reporting more straightforward; there was also a recognised need in most sites to improve feedback about safety incidents to staff. In one site, since in physiotherapy newly qualified staff are often on rotations, the

physiotherapy manager reported that the Trust had responded to their needs for updating on policy and guidelines:

So when somebody rotates say from here... they might go from here to, I don't know – cardio thoracic unit at (another hospital within the Trust) so...we've developed, like, a brief rotational checklist. (Interview with manager, Site B)

Interviews referred to a variety of topics being covered, including raising awareness to Trust policies, procedures and guidelines; moving and handling; infection control; risk management; and incident reporting. Not surprisingly, induction sessions heavily focused on what is expected of the individual working within the organisation. At most sites, material was also made readily available to new and established staff on the Trust intranet. However, at some sites it was unclear whether students could access it:

To be honest I don't know whether they [students] get access to this as part of their attachment. But there wouldn't be any problem with them saying to a member of the qualified team on the ward: 'can I see that?' and actually the qualified staff would point them in that direction. (Interview with manager, Site B)

Training in risk assessment was largely targeted at more senior personnel.

The Practice context

Previous sections have emphasised the importance of learning in the practice context. This study sought to examine the influence of practice culture on learning, and on the application of learning by students and newly qualified practitioners. Observations were undertaken in practice (two at site B and three at site D). Focus groups were also undertaken with clinicians, including clinical educators at each site, to explore what they saw as key influences.

Focus groups: The clinicians' view

Focus groups with clinicians at both sites generated several themes for consideration.

Learning patient safety: Classroom or practice?

At both sites clinicians in focus groups felt that some basic patient safety was learnt at university, in particular manual handling, but that the clinical placement was where most was learnt because it is a 'real' situation. In part this was perceived as about the physical prompts available. Other respondents noted (as did students themselves) that practicing with able-bodied student colleagues does not present the same challenges as practice where patients may have a variety of limitations:

Yes and practicing on a super compliant colleague is not the same as practicing on somebody who's confused and agitated post stroke or procedure or whatever, who's decided to climb out of bed (Practitioner focus group, Site D)

This was highlighted as a key area in which theory was built upon in practice. Another dimension in the application of theory in practice was described in relation to students

learning basic theory in the classroom, with fairly clear parameters for action and then learning in practice to mediate that, gradually developing clinical judgement. Whilst at Site B all focus groups and observations took place in an Acute Trust, at Site D participants in focus groups came from acute settings but noted that many physiotherapy placements are in the community where different safety issues come to the fore in people's homes and with less acutely ill patients.

Learning patient safety: the components

Focus group respondents emphasised that safety is an integral part of physiotherapy work and training (*sic*) and that observation, clinical reasoning and risk assessment were the key elements of that training related to patient safety. They stated that students learnt from direct teaching by supervisors, by observation, by working with their supervisors and also by working alone with selected patients. Clinical reasoning was described as being developed by students when challenged about the reasons for their actions:

I remember we had students and they did exactly the same thing with one patient as with another one. They wouldn't have done that patient any harm, I think it was on HDU and they were going over an assisted cough and I said why were you doing it here, why was it applicable? Because they weren't thinking what the problems of that individual patient were – they were just spraying all the... everything they knew at the same situation somewhere else. So it was a case of going back: why are you doing everything?
(Physio/OT practice staff focus group, Site D)

Clinicians were conscious of the tension between their responsibilities as clinicians, and as educators:

Your role [as a physiotherapist] is to maintain a safe situation and it's how much leeway you're prepared to give in order to do that (Physio/OT practice staff focus group, Site D)

Students were described as learning how to assess risk by learning from the clinical educator or tutor. The model of close 1:1 or 1:2 supervision was felt to allow students to learn safely from small mistakes and to discuss situations where safe practice was debatable or required careful judgement. Clinicians talked about the importance of risk taking for physiotherapy practice. The importance, ultimately, of listening to the patient is also evident.

The mechanism for learning was identified by another respondent as being about facilitating students' reflection. The importance for students of being able to talk through their experiences and ideas with other staff, particularly more junior colleagues, was drawn out. How far other disciplines might be involved in facilitating the student's developing awareness of patient safety was seen as, at least in part, dependent upon the nature of the practice environment.

Echoing some of the views of students and newly qualified staff, there was a perception that some elements of practising for 'patient safety' are innate – perhaps even 'common sense'. Although some felt that it was removed from students by the education (or as they described it, training) process, others saw it as something within students to be valued and nurtured:

I mean you would hope that if they saw a spillage of water on the floor they would do something about it out of sheer common sense. Because common sense in a student is vastly important. (Practice staff focus group, Site B)

Assessing safe practice

In the academic context focus groups, some students had felt that if they asked too many questions in order to be 'extra safe' they might be marked down for lack of confidence. Clinical staff appeared more concerned about those students who were over confident:

I think it's much easier to make somebody who's less confident, competent than it is to rein somebody back who's over confident. (Practice staff focus group, Site B)

These practitioners recognised that their own experience of safe practice had built up over the years and it was this mature judgement that students also had to acquire. Some commented that when they had trained there were more opportunities for them to practice on patients, which was good training for them but maybe not completely safe for the patients.

Observation in practice

At site B, each physiotherapy observation took place over a single shift in hospital – one in HDU and neurological wards and one in ITU and respiratory wards, including a session in the hospital's gym. The physiotherapist teams and students attached to each were observed. At site D, three sessions were observed. There appeared to be several common themes arising:

Patterns of working

In both units, physiotherapists seemed to work primarily as a physiotherapy team, moving between units and wards with relatively limited contact with OTs and nurses. At Site D in all 3 physio observations the student/s were working closely with the physio tutor – observing, discussing patients/ notes/conditions, working together, working under supervision, working alone in the bay with the tutor outside the curtain or nearby at the desk. On all 3 wards working with other physios in the team was also seen – and a few examples of working with nurses, doctors and OTs

In site B, when the medical round was in progress on HDU, a physiotherapy student commented: '*we have to stay quiet when the ward round is in progress*'. Students engaged with patients after all the doctors had left the unit. The senior physiotherapist appeared to be regarded as a role model. After initial discussions, the senior left the rest of the team, including students, to get on:

I'm just going round the corner if you need me (Observation 1, Site B)

Moving and handling

Moving and handling was seen as the core work of physiotherapists. Students appeared to be involved in all aspects, often independently. The tasks undertaken included getting patients up, and beginning to get them moving again after illness or surgery. When patients were being discharged and going back to everyday life, including work, contacts could also provide opportunities for communication of

messages about safety after discharge. During moving and handling of patients, explanations were given by students, and they checked and rechecked for pain and anxiety.

Infection control

The influence of concerns about infection control was obvious throughout the physical contexts examined, with the pervasive presence of hand rubs, posters and aprons (*Every room/ward has a gel dispenser and aprons outside and there are multiple notices*) and in the HDU and associated wards, staff were very conscious of practice being monitored (*'infection control inspectors on ward'*).

The students appeared to follow the infection control guidance which was visible, using aprons and gloves, and keeping stethoscopes clean or specific to patients. However, safe practice – though seen as important by students – was not absolutely second nature. At a later point the observer becomes a participant when a student is helping a patient to walk:

Student (m) asks me to get him an apron which I get and put on him. Senior physio says: "too late for that I'm afraid" (looks a bit [angry]) (Observation 1, Site B)

The student had not complied with infection control policies at the most basic level.

Communication

Communication (and lack of it) by students about patients and their management and care was observed with patients themselves, OTs, nurses, doctor and health care assistants (HCAs). The area of communication most often mentioned by students in academic context focus groups was the importance of explanation to patients of how to undertake exercises, or how to use equipment. This was not always seen in practice.

However, in most encounters, communication was thorough, addressing explanation and checking for indications of problems or risks. Students were observed paying attention to effective communication with patients:

Student asks patient question from behind desk; patient obviously does not hear (or understand?). Student moves over next to bed to repeat question. (Observation 2, site B)

As well as positioning, students were also aware that they needed to pitch messages appropriately for patients, commenting:

It is interesting how what you learn becomes 'second nature', and you need to be careful how to pitch advice to patients. (Observation 1, Site B)

Communication with other professionals is also seen as a key part of patient safety. Communication by students with nurses took place frequently, for example to discover how patients were progressing. Communication with other professionals could be both written and oral, and was often two-way:

Student (m) goes to nurses' station to look at notes; Sister asks him about patient 3: whether he has noticed any difference? They discuss the patient and whether she could have had a small stroke. (Observation 2, Site B)

Students noted that written communication beyond the physiotherapy team was not always effective. Previous studies have indicated that organisational arrangements such as shared or unidisciplinary notes can affect levels of communication.

Medicines management

The prescribing, administration and management of drugs are relatively peripheral to the work of a student or newly qualified physiotherapist. One use of patient controlled analgesia was noted, in a patient who was being assessed by a student (Observation 1, Site B). In this instance the main concern appeared to be to ensure that no leads or tubes were disconnected in moving the patient. In addition to occasional checks for pain during exercise, there was also occasional discussion of pain management. However, students observed had no involvement in decision-making about this.

Clinical procedures

In every profession, patient safety requires that newly qualified staff are competent in undertaking specific clinical procedures. During observation sessions, physiotherapy students were seen undertaking assessments of various sorts and listening to chests. During observation in the gym, the possibility of using some different equipment was raised, but not followed through.

Learning in practice

An important consideration for learning in practice is who students learn from. In discussion during the observation, students reported that they *would talk to nurses mainly and would ask them things*. For one student, the *clinical educator is the first port of call but nurses are usually there and easy to access*. This student reported that interactions with doctors tended to be more 'social'. When discussing patients with clinical educators, students were guided about appropriate management as well as the underlying mechanisms of disease.

Challenging the status quo

During observation there were instances of students witnessing possible threats to patient safety – for example placing a catheter bag on the floor or the bed. There seemed to be reliance upon checking procedures, and, for students, on the views of the educator and of other professionals. Students earlier highlighted the capacity of students and newly qualified practitioners to challenge the prevailing culture, or individual colleagues' practice as important. During one observation session, the observer talked with a student whilst waiting to see the next patient, and recorded the following:

As student did not feel confident to challenge unsafe practice – especially in first and second years – now feels she has more experience and would perhaps say: 'could we not try...?' (Observation, Site B)

Chapter summary

- For both courses examined, the curriculum material identified as directly addressing safe and effective professional practice, was quite limited. One site had more explicit references than the other, located in the area of professional development.
- Patient safety is seen as pervading the whole practice of physiotherapy. It is defined as about physical and psychological safety and ensuring high quality care.
- Learning about patient safety is felt to be integrated throughout courses. Students stated that they learnt about patient safety all of the way through their courses.
- Learning in relation to patient safety is more evident in practical sessions and on placements.
- Students moved from a simple understanding and absolute concept of patient safety to seeing that rehabilitation needs an element of risk.
- Students and newly qualified staff said that learning how to conduct procedures competently, being aware of all of the contraindications and being able to assess the possible risks, helped them to ensure patient safety.
- Assessment is important in university in driving and consolidating learning about patient safety.
- Students valued learning to be competent and to identify contraindications at university in a relatively controlled environment.
- Opportunities for interprofessional work focusing on service improvement related to patient safety generate reflection on the issues involved.
- Students suggested that a major factor in the quality of placements in relation to patient safety was the attitude of educators and the relative density of staff.
- Educators on placement are seen as role models (both good and bad). The way they dressed, the way they behaved and the way they taught could all influence students' learning.
- Clinicians believe that students learn from direct teaching by supervisors, by observation, by working with their supervisors and also by working alone with selected patients.
- Safety is seen as an integral part of physiotherapy work and training by clinical educators who feel that developing observation, clinical reasoning and risk assessment are key to patient safety.
- Clinicians are conscious of the tension between their responsibilities as clinicians (keeping patients safe), and as educators (allowing students to learn under supervision)
- In practice situations, students build up a portfolio of examples to draw from in future practice.
- Whilst students often lacked confidence initially, over time, repetition helped build confidence

- Students need to be empowered to question and 'challenge' unsafe practice, procedures and processes without fear of being penalised.
- Newly qualified staff were aware of the need to be seen to practice in an evidence based way, and the need to modify 'the standard' way of doing things to do 'what's best for the patient'.
- Variations exist in students' experience, in approach between university tutors, different placement locations – the experience each could offer – and the quality of the supervision available.

Chapter 8: Organisational context/ Stakeholder perspectives

Introduction

The aim of these interviews and of the documentary analysis was to gain a view of each organisation's culture and approach to PS in normal working – into which students are placed. Interviewees across all the sites expressed the view that patient safety had become a higher priority for the Trusts in recent years. In a few sites, strong leadership within the organisation (particularly Chief Executive and Board engagement) was perceived to be an important driver in raising the focus on quality and safety agenda.

Overviews

Priority and a 'no blame' culture was commonly described. Site C acknowledged difficulty as the topic was so broad and there were other priorities. A physiotherapy lead at Site B said the organisational engagement was not profession specific enough. In the main the researchers appear to have captured the espoused view of the organisational culture from senior managers who are 'on message'.

The Trust takes the issue very seriously ... We've been developing and progressing systems in the patient safety arena constantly.

Web based dissemination of information was common to all sites, with particular strategies used at each: teams (A); champions (B); newsletter (C&D); facilitators (E).

Structures

Structures for patient safety appeared complex. Hierarchical committees with risk managers and well structured reporting systems are common. However, the head of clinical governance interviewed at site B mentioned that culture was more important than structure. In site C the respondent talked about engaging staff but this did not come out as a common perception. It appeared that to most of these managers the structures are paramount – perhaps because this is a developing area.

Priorities/new developments

Respondents noted that patient safety had become higher priority recently. A number of new developments were seen as emerging from this within Trusts: specifically, lean engineering (A); root cause analysis (A); new documentation (B); prescribing (from pharmacist leads in B, C & D); violence (from quality manager in B); protected meal times (E); hand hygiene (B); and empowerment (B).

Systems

Systems mentioned as utilised at all sites included incident reporting, risk assessments, meetings. Specific elements included audits (B, D & E); case note review, safety notices, surveys, (A); root cause analysis (A & B); and care pathways (C). These systems may also be in use in other Trusts but were not mentioned by interviewees. Overall systems were generally perceived as working well. Nevertheless, some respondents felt that more engagement was needed:

We need to move to a much more interactive way of distributing them [policies].

Perceptions of staff views

There was felt to be some resistance to reporting (A, B, C, D) and perceived desire for more feedback (B, E). In some places medical staff were seen as less engaged in reporting (A, D, E). Interviewees appeared less confident in answering this question suggesting perhaps that many may have little actual contact with the 'coal face'.

Influences

Factors identified as influencing patient safety included: patients (A, C); leadership (A); people (A, C); publicity (A); training (A); the profession (A, C); insurance (B, C); the Department of Health (B); NPSA (B, C, E); NHS Litigation Authority (B); litigation/fear (C, D); learning from incidents (D); the Strategic Health Authority (E); and inspections (B). Inspections were highlighted by several respondents as an important driver for good practice – but not always as a positive force:

We're inspected to bits and, um, I suspect not all of that inspection process is actually constructive – it's about passing the inspection rather than improving the patient safety, and some of it is just so, kind of, paper bound, that ... you're forgetful why you are doing it!

Key areas mentioned across sites

A majority of sites are now using online reporting systems, although a handwritten report system was still used in some sites. Site C had used an online system for some time (over 5 years). Incident reporting was a key feature of the patient safety agenda within the organisations with the stated intention that learning should take place from untoward incidents to avoid repetition. Across sites, all recognised under-reporting as an issue:

I would be dishonest if I said that every member of staff that worked for the Trust felt that the incident reporting system was a good thing because I think that some of them feel that when they report an incident it goes into a big black hole and nothing is ever done about it.

Some interviewees referred to unawareness among some staff relating to some of these systems. There were suggestions that sometimes individuals are confused as to what to report or too busy to report. On the whole, students were not engaged and it was felt may not even be aware of incident reporting schemes – if they were aware, they may not have access to systems in the Trusts. They were also not routinely targeted for training about systems. Several sites were moving to be a 'paperless organisation' with regard to risk management policies/procedures, reporting system online, etc.

There were also some problems for other staff members about awareness of online policies:

Actually strangely enough it tends to be senior managers and clinicians who ring in and say: 'have we got a policy on such and such?' I'll say 'yes, if you go onto the website and just key in the word you will find it'.

Effective dissemination of information about patient safety incidents is challenging on the ground. Telephone 'hot lines' had been established in some sites in an attempt to make reporting more straightforward. There was also recognised need in most sites to improve feedback about safety incidents to staff – in some sites, new initiatives had been introduced such as an annual visit by the risk manager to clinical areas to review reports, regular newsletters across organisation, but impact was unclear.

The problem is with all these changes to policies to do with safety is there's so much information that everybody's getting swamped.

Prevailing organisational culture was also perceived to be a key determinant of incident reporting. There were several comments that medical staff were less likely than other staff groups to report safety incidents:

I would say the medical staff are more cynical, I think the nursing staff and the allied health professionals are much more in tune with them and I think they feel that they're there to help them rather than hinder them but when I say the medical staff are more cynical, I think a lot of the time the medical staff think, oh here's something we've been told we have to do and they don't necessarily initially see it as something that will benefit them or the patients

Sites A and C questioned the value of a reporting system when used in isolation. They were pushing to introduce more detailed case note review and use of 'trigger tools' alongside incident reporting. This was largely driven by the need for more detailed understanding of root causes of failure and '*making the data from incident reporting schemes more meaningful.*'

Training on how to conduct root cause analysis was being rolled-out across sites. The target groups were generally senior staff members (often identified as '*safety champions*' within the organisation). There were some suggestions that they may include more junior staff in future, but they foresaw capacity issues:

We've spent a lot of time training senior staff in root cause analysis... So I think at present we're probably up to about 290 senior staff, and when I say senior staff I mean matrons, directorate managers and consultants, in effective incident investigation using root cause analysis.

Root cause analysis [training] isn't mandatory but it's something that we're introducing and we're starting with senior staff first of all but gradually we'd like to cascade that throughout the organisation because whilst you might have a junior member of staff who would not necessarily lead the investigation on a particular incident the actual principles of root cause analysis can be applied to a whole range of circumstances in terms of what you do in your working practice so it's a good discipline, it's a kind of a structured way of thinking about an issue or a problem.

Across the sites, there was a major push to encourage a more 'systems based' approach to understanding error.

In terms of risk assessment and management, it was seen as a key activity across the sites leading to the development of local and organisational risk registers:

I think risk assessment, first and foremost, is really important. It is a skill and I realise it's hugely subjective and loaded with emotion, but if it's managed properly it can be very helpful at shining a light on where your problem areas lie.

There was considerable discussion about how risk assessments feed into corporate governance structures and prioritisation for planned safety activities within sites. Training in risk assessment was again largely targeted at more senior personnel.

Induction training programmes for new staff members were provided across all sites. Interviews referred to a variety of topics being covered, including raising awareness to Trust policies, procedures and guidelines, moving and handling, infection control, risk management, incident reporting. Not surprisingly, induction sessions heavily focused on what is expected of the individual working within the organisation:

All staff – be they nursing, medical, physio, whatever – have a 20 minute induction programme that stresses their... the individual employee's place in governance and patient safety.

There is then often specific training geared to the area in which they are to work and this may be followed by ongoing training:

They have a session about risk at induction and then within the local induction, certainly for pharmacy, for pharmacists in particular, there's a set of standards about what's expected of pharmacists, so that we can provide safe and effective treatment.

There was a suggestion that engagement of staff with ongoing (Trust-led) training whilst in post may be more problematic:

They're supposed to be mandatory, but they're still difficult to get people to go on them. Unless you've just started in which case you have to go on it, but once you've been there for X number of years, you know, people find other things to do.

Some sites were thinking about different approaches to the delivery of training, notably site A with the development of e-learning packages on risk assessment, incident reporting, root cause analysis, and working with information systems.

Students were generally not engaged with the corporate induction programme, and there were suggestions that they were likely to be unaware of some of the systems and policies in place.

No I wouldn't have thought they would have shown them [students] the risk register. I wouldn't have necessarily have thought they would have shown them in that instance the incident reporting book. I would have hoped they would have had the conversation with a member of staff to say if something happens that you're not sure of please come and tell me about it and then they would have gone through it.

To be honest I don't know whether they [students] get access to this as part of their attachment. But there wouldn't be any problem with them saying to a member of the qualified team on the ward: 'can I see that?' and actually the qualified staff would point them in that direction.

There was evidence of attempts to engage medical students with the risk management team at Site C, but this did not appear to be common across the sites:

We've made a bit of a good push at tapping into that, into the student body as they come through the organisation. And I give them all sorts of talks and I go into a bit more detail about the cause of adverse events, why things go wrong in healthcare, what do we do about it. I talk to them about all sorts of things, including fortress mentality.

Elsewhere, some training sessions had occasionally included some students, but this did not appear to be routine activity:

I also – again because of my personal history – do a session on what I call 'defensible documentation' – it's basically about quality documentation, and I've trained several hundred staff on that subject including student nurses.

Looking to the future, there were some suggestions that respondents would like to see training more focused on service improvement:

I think in the ideal world I would like to be able to describe to you a situation where that training is about service improvement. So the training we'd be delivering is the sort of training that changes practice and changes behaviours, so it would be service specific or condition specific training and I don't think we're penetrating into that at the moment. I think that's what, you know, the future needs to be like that.

Site A expressed interest in getting staff trained in "lean process engineering". Others also suggested that learning was possible from industry, particularly focusing on communication strategies:

And using some work that originated in Formula One racing pit stop changes: how you can change your car's tyres etc in seconds and a very complex thing and everything is done safely, and how they do that. So it's communication channels, and we're looking to see whether we can implement that type of system in things like handovers to ITU. So when the patient comes from theatre into ITU and then from ITU into HDU or onto a general ward, the way the information is communicated.

The precise roles, experience and status that these managers have appears significant in the responses that they give – some have more of an overview of the whole organisation's structures and some have a much more limited understanding. However taken together they do give some indication of Trust approaches and the similarities and differences between them.

Perceptions of patients

Patients are able to identify safe and unsafe behaviours, and are keen to be involved in education for cultural change. Patients in focus groups were aware that organisational culture can either support or work against safety. They gave many examples of how they could judge this from watching how staff communicated, and whether they took responsibility to help people even if this involved extra effort and time. They offered specific behaviours which they identified with unsafe practice:

- lack of care (eg mouth care)
- lack of attention (not explaining things)
- staff not focusing on patients (being distracted by use of mobile phones)
- lack of finding out necessary background information (not reading specific instructions, not reading clinical background)
- Missed diagnoses – with chronic suffering and disability as a consequence
- Poor hygiene – clothes, hands, tidiness
- Lack of stimulation and emotional care
- Overprescribing of drugs
- Violations – of rights, choices, respect

Patients also felt able to recognise positive behaviours as a proxy of safety:

- Being patient centred – relating, informing, encouraging questions, supporting
- Fully informed consent as a *sine qua non* of safety
- Protective routines (eg fixing times to check things)
- Continuity of relationships as a prequel of good care
- Correct diagnosis
- Being protected when vulnerable (psychosis, head injury, having an operation)
- Being pushed to get better by someone who they can trust
- Humility, seeking advice, accepting questioning (from and by all)
- The students themselves – because positive and interested

Patients tended to assume that a safe clinical environment was also a good learning environment. They saw students as a force for improvements in practice, who deserved good supervision and who could bring new knowledge and challenges, but who needed time to reflect on problems and learn from them. They identified with the students as being at the bottom of the hierarchy, and shared concerns about how to challenge staff about problems. They accepted a degree of risks with novices, providing they were fully consented and the learners were supervised. They supported a strong role for patients in patient safety education, through all aspects (curriculum development, lectures, seminars, clinical visits). Their main motivation was to give back, to inform, to speak on behalf of others: to make examples real, broaden experience, encourage and support students, convey patient wishes in ethical dilemmas, and to show patient needs and patient expectations.

Chapter summary

Interviewees across all sites said that patient safety had become a higher priority for their Trusts in recent years. Incident reporting was a key feature of the patient safety agenda within the organisations examined. Some staff were confused about reporting, or too busy to report. On the whole, students are not engaged and may not even be aware of incident reporting schemes. If they were aware, they may not have access to systems in the Trusts. Students are also generally not engaged with Trust corporate induction programmes. Some Trust training sessions occasionally include students, but this did not appear to be routine.

Section C: The implications

Chapter 9: Emerging themes and discussion

Across professions: contrasts and common threads

Definitions and curricula – embedded or separate?

Most course directors and lecturers struggled to define or conceptualise patient safety as a distinct concept. Definitions were shaped to some extent by the professional group involved. For physiotherapists it was defined as about physical and psychological safety and provision of high quality care. Both lecturers and students across all disciplines felt that patient safety was not in practice a separate topic but underpinned all aspects of the various programmes, just as road safety was implicit throughout the process of learning to drive. Even in pharmacy, where the idea of patient safety was well defined, patient safety content was described as embedded throughout the curricula and mainly contained in the pharmaceutical science components. Regulators, professional bodies and quality assurance agencies were all seen to be influential in patient safety curricula for each discipline. For example, the RPSGB accreditation process was found to be the main external driver for pharmacy curriculum design. As judged against the patient safety literature, there were identifiable gaps in core curricula across all disciplines. However, it was generally agreed that moving to a curriculum where patient safety was regarded as a 'topic' or 'module' was inappropriate: patient safety is a result of many aspects of clinical learning, not a stand-alone theoretical concept. The tension between the need for an explicit curriculum and clear applications in multiple practice settings could be addressed by having more explicit content and outcomes for patient safety.

Learning in the university: reflection, drive and control

The university setting provided a relatively controlled environment for students from most groups to learn to be competent practitioners and to assess risk or contraindications. In this setting assessment was particularly important in driving and consolidating learning about patient safety, although it also featured in practice. Reflection on action – encouraged in a variety of ways – appeared to be another important tool in enabling students to learn about safe practice. Interprofessional work, and opportunities for service improvement, appeared to enhance this.

Real or ideal?

Learning in relation to patient safety was more evident in practical sessions and on placements. These were seen as an opportunity to consolidate classroom learning. Students generally viewed patient safety positively. Some described it as learning to deal with real issues for real patients. Safe evidence based practice was valued and promoted by academic staff and newly qualified staff in all disciplines. They indicated that resource issues, peer pressure and client factors could all influence safe practice. However, many respondents also noted that theory may be different to practice. Some respondents highlighted that in their

experience 'the' safe or 'correct' academic performance could be contrasted with variations in performance in practice. The question arises, are universities teaching an idealised form of practice? Are they really teaching about real issues for real patients? For pharmacy, 'ad hoc' voluntary work experience is said to compensate for limited formal clinical exposure and under-addressed patient safety elements. However, rapid change is occurring in this area.

Role models and relationships

Role models in practice were highly valued by all groups, and learning in the practice setting was mostly informal. The way mentors or educators behaved and the way they taught could each influence students' learning. The relative density of staff in a placement could also affect opportunities for informal learning. Relationships with the mentor or educator were critical to student learning. Factors identified as important included availability, willingness to teach and attitudes to questioning. Students were generally very aware that mentors or educators assessed their placements and could pass or fail them in relation to safe practice. Clinicians were conscious of the tension between their responsibilities as clinicians, and as educators. The relationship with mentor or educator also affected how confident students felt to challenge unsafe practice in other staff. Students need to be empowered to question and 'challenge' unsafe practice, procedures and processes without fear of being penalised.

Patient centred learning?

Patient safety involves building trust between professional and service user. Meeting with patients and learning (formally or informally) about their experiences and concerns was seen by students in all disciplines as greatly enhancing the relevance of teaching. Service users trusted professionals to practice safely and had confidence in students to challenge unsafe practice. They say that PS is being able to trust the staff – and communication is therefore important.

Organisational safety

The aspiration of organisations where staff feel safe to report errors appeared problematic at several of the study sites. Students across all disciplines did not always have access to policies and guidelines, and felt they could be made more aware of Trusts' approaches to risk assessment. Moves to electronic access for staff appeared to have created some particular barriers. However, these may be overcome soon when the 'N3 Gateway' is fully operational.

Student experience

Significant variations exist in students' experience, encompassing approach between university tutors, different placement locations – the experience each could offer - and the quality of the supervision available to them. Students would value 'patient safety debriefs' after placements and more support in clinical areas from practice placement facilitators.

An overview of educational issues

This study has been about education. Respondents highlighted some key areas as potential places to maximise the impact of educational opportunities for patient safety. A very hectic clinical environment in secondary care can mean that learning

opportunities are missed. Attention needs to be given to increasing staff's time and resources for close supervision, small group teaching, and discussion of safety issues. Students were not taught about how and why errors arise, nor how they can act early to prevent these. Respondents suggested that we need to show links and contrasts between ideal practice, and complaints or errors. They felt that giving plenty of examples, and role-modeling of transparent learning from mistakes was important. Discussion of how to address safety concerns is also vital. Assessment looms large for students, but there was some concern to avoid over-emphasis on exams and medico-legal problems, which it was felt may distort student motivation. It was felt to be important to build and maintain excellent patient commitment to student learning, emphasizing safety issues. Mechanisms suggested to facilitate learning for patient safety included more focus on significant event analysis to enhance reflection, building in service improvement initiatives with a patient safety focus and providing opportunities for students to learn when to call for additional help.

Limitations and strengths

The strengths of this study methodologically are that a large amount of data was collected on the same issues from multiple sites and sources, using an agreed set of methods and working to common topic guides. The study design drew on educational theory to structure analysis on several levels: by course, by profession and across professions. All researchers and site leads contributed towards the design of common data collection instruments and analysis frameworks, which all went through several iterations before use.

In order to enhance the rigour of the study and avoid major variation in practices, the following procedures were employed:

- Common sampling methods
- Interview schedules were piloted
- NVivo software was used to facilitate review of coding
- Raw data was generally reviewed by more than one researcher;
- Data collected and analysed at one stage was iterated into the next stages and across different groups and sites
- Data workshops and group discussions (face to face, telephone/video and email) were used to discuss, challenge and agree coding and findings.

Another major strength of this study lies in the project team which mirrored the disciplinary base of the study itself by bringing together a range of professions and disciplines including: medicine, nursing, occupational therapy, pharmacy, physiotherapy, podiatry, social work, education, ergonomics, psychology, and sociology. This mix offered multiple perspectives on all aspects of the research process, some 'insider' perspective for parts of the data, but also a forum in which process and findings could be contested and assumptions challenged - thus helping limit potential blind spots and biases.

There are, however, some limitations which need to be acknowledged and taken into account when reading this report. There was some variation between researchers in topic guide use in practice, often in response to local conditions or participant expectations. Although these were easily recognised during data analysis, it was not possible to go back to collect any data on prompts omitted or not pursued. Similarly,

the collection of curriculum and organisational documents showed variation in availability and content, due to the choices made by the participants who provided these. This variation in response to standardised requests can itself be seen as an important finding.

The recruitment of participants occasionally proved difficult, so interviews or paired discussions sometimes substituted for focus groups (see Academic context interview guide). Although the data collected from interviews will be different from a focus group, we found that these complemented and added depth to that of the focus groups.

The amount of data collected was considerable, and time restrictions plus the quantity of data generated may have potentially reduced the depth of analysis. However, in the final analyses, saturation was found to be reached in relation to the main findings. There was also strong triangulation across some (though not all) datasets, and the main conclusions and recommendations of the study are evidenced by several different types of data collection and groups of respondents.

Chapter 10: Conclusions and Recommendations

Conclusions

Healthcare is hazardous. Patient safety is 'everybody's business'. Education about patient safety is a critical element of learning to be a health professional. This study has investigated curricula from a sample of 13 educational providers in England and Scotland in relation to the formal and informal ways pre-registration students from a range of healthcare professions learn about keeping patients safe from errors, mishaps and other adverse events (broadly known as Patient Safety). We looked at pre-registration courses for doctors, nurses, pharmacy, and physiotherapy. In depth case studies were carried out in eight providers (two for each discipline).

We found that there were considerable similarities in the story told about formal and informal patient safety education by staff and students from all four disciplines. Our observations in general confirmed their impressions. Patient safety is rather more implicit than explicit in curriculum documentation, and for most students it is experienced as integrated throughout their studies. Assessment (unsurprisingly) tends to drive learning, and most students report learning more in practice than from university based activities. Role models are important in demonstrating appropriate attitudes and safe practice. Engagement with patients (whether in the classroom or in practice) also seems to facilitate learning. There was no support for patient safety to be separated out in a silo, but academic staff did feel that content and outcomes should be made more explicit.

Although this has been a very substantial piece of work, there are many areas which require further investigation. For example, the broad nature of this study meant that we made only slight inroads into understanding something of the culture of practice in each profession and its influence upon students and newly qualified staff. Understanding more about the factors which shape the attitudes of clinical educators and mentors will be important in devising appropriate education for them. There was some indication of the importance of interprofessional learning in this area, but again more work is required. We have also become aware during the course of this study that there is a need for greater understanding of the ways in which patient safety education is delivered across Europe.

Since this study was commissioned, patient safety has risen up the policy agenda. Recent initiatives seek to change the culture of the NHS to one which in the words of NHS North East (2008), look for 'no avoidable deaths, injury or illness and no avoidable suffering or pain'. There is an increased focus across NHS on safety and quality and on the use of commissioning and contracting to ensure this. However, whilst significant investment has been made in campaigns to promote infection control, and technology to ensure that the right patient gets the right treatment, education remains essential in developing and sustaining appropriate attitudes and behaviour amongst staff - now and for the future.

Recommendations

Generic recommendations: academic

- All course directors should be readily able to identify an integrated thread of teaching and assessment related to patient safety, clear to staff and students

Curricula should familiarise students with common patient safety problems and procedures, including developing students' capacity to constructively challenge unsafe practice

- Opportunities for patient encounters focusing on patient safety should be incorporated into all courses
- Educational input needs to emphasise best practice and the actual ways in which practice breaks down – there is a tendency to describe but not explore or explain how practitioners deviate from best practice, which leaves learners unable to analyse the pathways to error
- Innovative approaches should be developed to make patient safety issues 'real' for students – examples may include the use of role plays and simulation, interprofessional learning events, service improvement activities or significant event enquiries
- Learning activities about patient safety should be designed appropriately to the students involved: The balance between lectures, small group and 'hands on' experiential learning should be considered.
- There is potentially plenty of opportunity for inter-professional learning about patient safety, which could be further exploited

Generic recommendations: organisational

- Closer links should be developed between academic staff in HEIs and NHS Trust managers in each SHA around patient safety to ensure clarity about policy trends, desired areas of competence for students at qualification and to work towards an appropriate balance of learning between university and practice settings. Opportunities for interprofessional dialogue would be likely to enhance this.
- Course directors should be encouraged to appoint a patient safety champion to facilitate the topic's profile and drive content development
- Curriculum reform will need to be taken forward by a number of regulatory authorities: It is possible that in addition to the various Councils, the NPSA might play a role.

Generic recommendations: practice

- Selection and briefings for clinical placements need to highlight supervised learning of patient safety related activities. Assessment should include relevant aspects of patient safety, and whether or how staff explain non-standard practice.
- In all disciplines there is a need for effective role models in practice : the development / training of this group in relation to patient safety is critical

Recommendations for future research

- We need to develop and test criteria for assessing learning in relation to patient safety. These do not currently appear to be clear or well developed.

- We should also develop, pilot and test the idea of patient safety champions for education, exploring both implementation and impact.
- There should be more in depth study of practice education in relation to patient safety

Recommendations for medicine

There are some ways in which courses might enhance their outputs, at the same time bridging some of the cultural divide between the academic/ clinical alignment and the organisational/ systems approach:

1. It is crucial to have excellent clinical placements led by good role models who are clear about how to help students to learn about patient safety
2. All learning activities about patient safety need to be appropriately designed: this may need careful consideration of student numbers on placement, and ensuring that the workload of supervising lead tutors does not interfere with core educational process and feedback. Student supervision and feedback needs to be prioritised to achieve safe practice while learning, which has resource implications.
3. Make every opportunity to involve students in meeting with patients and learning about their experiences and concerns – this can be done in placements, but also by the use of ‘expert patients’ who can offer specific teaching on safety issues and managing the experience of medical errors
4. Pay more attention to the current knowledge base on patient safety, so students have some theoretical and conceptual build to use when analysing their experiences and trying to practise safely – this is NOT recommending a separate theory course, but making more explicit some more complex issues like missed diagnoses (abuse, red flags), handover challenges (transfer of information, clinical priorities) and epidemiology (common errors in different settings)
5. Utilise the educational expertise available to make all patient safety issues ‘live’ for students – through case and problem based discussions, consultation skills role plays, interprofessional learning events, significant event enquiries
6. Ensure that all medical schools can map their patient safety curriculum across all five years, so that this is explicit to both students and staff (without necessarily increasing the volume of curricular activity): assessment of this curriculum should also be mappable
7. Link managers into undergraduate education, as a source of ‘cases’, as advisers on core systems which NQPs need to be competent in, and in order to encourage interprofessional understanding and respect between doctors and management
8. There is a need to look more explicitly at why practice breaks down and the circumstances in which it does so: doing this repeatedly in different settings including in the NHS might help with the anxiety about litigation and whistleblowing, as it would show how active learning from errors and adverse events allows early detection and remediation of problems in many instances, as well as enhancing quality over time. This could be done by including senior students in team-based learning activities (mortality enquiries, child protection cases, medication reviews etc) and consider using them as part of the enquiry both so their skills are developed and to give active engagement

- Highlighting the teaching and learning of patient safety through accrediting body quality criteria, and the creation of senior patient safety leads for each course, would assist the profile and likelihood of patient safety competencies becoming more stable and effective over time.

Recommendations for pharmacy

1. Curricula should be revised to include topics including the epidemiology of adverse events and error, root cause analysis and quality assessment. These have been described as core domains in medication error education.
2. Courses should seek to incorporate teaching and learning about factors affecting the organisational context. This might involve input from NHS based staff or completion of reflection concerning formal planned visits and tutorials.
3. Curricula should be developed to provide meaningful clinical experience in relation to patient safety throughout the undergraduate programme (as recently recommended): this could build upon examples of good practice identified in this study.

Recommendations for physiotherapy

1. Curricula should clearly address developing students to deliver safe and effective professional practice. Course directors should consider the balance between classroom based and practice based learning about patient safety at each stage.
2. Assessment in relation to competence and safe practice should be incorporated into curricula at all levels as it drives and consolidates learning about patient safety.
3. Course directors should consider building in opportunities for interprofessional work related to patient safety and particularly focusing on service improvement as these generate reflection on the issues involved.
4. Student placements should be assessed for their suitability in relation to the attitude of educators to patient safety and the relative density of staff.
5. In practice situations, students should be encouraged to build up a portfolio of reflections on safe practice to draw from in future work.
6. In practice based learning educators should seek to provide opportunities for repetition of activities and skills in order to build confidence
7. Students need to be empowered to question and 'challenge' unsafe practice, procedures and processes without fear of being penalised.

Recommendations for nursing

1. Curricula should enable students to understand patient safety issues for real patients (to enhance motivation), and to contrast evidence based 'safe' or 'correct' performance with variations which may be seen in practice.

2. Patient safety education should seek to promote positive behaviour rather than defensive practice.
3. Curricula should enable students to develop skills to challenge unsafe practice in other staff.
4. Selection of placements should examine staffing and resources, staff attitudes to patient safety and client factors (for example levels of dependency) in relation to learning safe practice.
5. Courses should consider 'patient safety debrief' sessions after each placement, both as an educational tool and for review of placements.
6. Staff selected as mentors should provide evidence of positive attitudes towards patient safety, regular ring-fenced availability to students, active readiness to teach and positive attitude to questioning
7. Practice placement facilitators should be encouraged to support mentors in clinical areas, particularly in developing appropriate patient safety learning activities.
8. Students should be made more aware of Trusts' approaches to risk assessment, perhaps through greater use of visiting lecturers from Trusts.

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Appendices

Appendix 1: Academic context interview guide

Semi-structured interview schedule with Curriculum course leaders/directors.

Name

University

School

Course

Job title

Date of interview

Transcript code (confidential to interviewer)

1. Introduction

- Thanks for agreeing to interview - Recording of interview to be agreed beforehand
- Confirmation that they have read and are happy with information about the study: *if not answer questions/provide information.*
- Confirmation that they have signed consent form: if not do now (if in person) or arrange if on telephone.
- Thanks for any documentation and/or information already provided following initial contacts and/or course leader letter.

Reiterate that the purpose of this interview is to:

- Gather or clarify (*as appropriate*) information about the undergraduate curriculum (for this specific course);
- to obtain their personal views/perceptions about what patient safety education is;
- and to identify where they think the topics/issues pertinent to patient safety lie within this curriculum.

2. Course Structure

- Confirm/clarify that you have a shared understanding about the structure and organisation of the curriculum in general.
(depending on previous information collected) We've looked at the material you sent us... In your own words, can you summarise how your course is structured?
- Are there any other particular features of the general course structure or recent developments you wish to draw to our attention?

3. Patient Safety Education

(Here we want to develop an understanding of their conceptualisation of patient safety)

As you know the focus of our study is education about patient safety. However, we are not interested in the views of the NPSA or any other formal version of PS but would like to know about your views

- In a sentence or two can you tell me /describe/define what you believe patient safety to be (*be about / entail / cover/ include: their definition of PS*)
- Can you clarify which parts of the course (skills / topics/ subject areas) you feel relate most to patient safety? (*use probes eg which parts are most pertinent to PS and why – get concrete examples*)
- How do you feel patient safety education is developing within your curriculum?
- Is there anything else that you would like to add about PS education in your curriculum?
- What do you believe the influences are on PS education? (*people, policy, publicity*)
- Thinking back to the interview is there anything in retrospect that you would like to change or that you would prefer not to be transcribed?
- Would it be OK to contact you again if we need more detail on any of this?

There will be an opportunity near the end of the study to attend a feedback meeting and there is a website that you can access for updates and a final summary at <http://psafety.ncl.ac.uk> e-mail web site address as well with thanks for interview

Thank you very much for your time

Appendix 2: Analysis framework for interviews with key informants (course leaders or equivalent)

Views on PS

Their descriptions / definitions of patient safety :

- Type of definition
 - Compartmentalised (eg to do with specific areas, topics such as communication skills and infection control)
 - Which areas are mentioned, highlighted
 - Which are thought to be 'most' important
 - Reasons for picking specific areas
 - Concrete examples if given
 - Everywhere /all pervading (eg is part of everything, throughout, unable to pin down or unpick)
 - Which areas are mentioned, highlighted if any
 - Which are thought to be 'most' important if any
 - Reasons for picking specific areas if any
 - Concrete examples if given

Any developments in patient safety curriculum – eg related to:

- a. New modules / subjects
- b. Learning outcomes

Influences on PS education

- i. people
- ii. policy
- iii. publicity
- iv. other

(Note and check any changes asked for or bits they prefer not to be transcribed)

Appendix 3: Framework for academic observation

Note to researchers:

- 1) Please distribute project information sheet to tutor/facilitator running the session. (If not done before)
- 2) Non-participant observation should be used.
- 3) Introduce students to the reasons you are there using the following:

How health professionals are trained in patient safety.
-to keep patients safe from errors and adverse events.
-will watch your work and will make some notes,
It is not an assessment of individual students' performance or tutor
You have the option to refuse without a reason and no notes will be made about your interactions, practical involvement or questions.
Information collected while observing here today will be anonymised,
Thank you very much for your co-operation. Do you have any questions?

The context/environment:

Name of teaching session
Session part of module/which year
Date observation occurred
Location
Time spent observing
Teaching session hand-outs
Number of students and their gender

Note: *From here notes can be made in a separate notebook.*

- 1) Describe the environment and layout (are the students sitting? where is the teacher? what equipment and facilities are being used?)
- 2) Identify the purpose and aim of the session (if not stated refer to handout or module handbook – which are the intended learning outcomes)?
- 2b) Identify learning events/conversations/practical individual or group work that relates to aims and learning outcomes about patient safety/safety (relationship between planned and implemented patient safety education)
- 3) Identify explicit and implicit patient safety/safety contents and how it is being discussed and taught (what method of teaching: presentation/practical etc)

- 4) Are any particular skills or competencies mentioned or discussed in relation to safety (for example need for students to improve communication or assertiveness skills)?
- 5) Is interprofessional learning discussed in relation to safety?– if so how?
- 6) What messages are the teacher/s sending out about safety – implicit and explicit?
- 7) What questions are students asking?
- 8) Describe the students level of interest (are they listening/bored/alert/making notes?) and confidence.

Field notes (these can take at least as long to complete as the observation event):

Further details about the event and ‘thick descriptions’

Key concepts and their meaning

Interpretation about significant events

How did you feel about being an observer?

Appendix 4: Phase 1 (2a) Analysis framework for observation of teaching sessions

Observation will be analysed to identify ways in which the intended course plans are translated into 'teaching' practice. This will give a picture of education as delivered. Researchers will look at the ways in which the subject is handled, comments made by teachers and students which may help understand the way the subject is thought about and viewed and other relevant aspects.

Record

- Date of session
- Location
- Name of session
- Year of study
- Time observed
- Staff involved
- No. of students – no. male and no. of female
- Types of session – introductory, revision or assessment
- Description of the room
- Equipment
- Location of lecturer, other staff (if applicable), students

(Number items = parent nodes, bulleted items = child nodes)

1. Aims of session

- Aims stated in session
- Aims from documentation
- Aims related to PS
- Aims not related to PS

2. Lecturer

- Teaching/lecturing style – informal, formal, slides, no slides, practical, role play etc
- Role model behaviour – perhaps linked to ...
- Use of personal experience examples
- References made to media, research or literature
- Interaction with students
- Throw-away comments – offer an insight into how they view PS
- Latent/hidden messages – related to above
- Humour/jokes – related to above
- Explicit PS messages
- Asides to researcher – anything the lecturer may have said to you personally

3. Students

- Required skills or competencies discussed in relation to safety

- Level of interest – interested or bored
- Behaviour – appear nervous or anxious, relaxed, loud, quiet, fidgety etc
- Interaction with other students – especially if working in groups
- Interaction with lecturer
- Questions asked – PS related, non-PS related
- Humour/jokes
- Throw-away comments

4. Content of session

- Explicit PS content
 - Prescribing and administration of drugs
 - Communication skills
 - Infection control
 - Risk assessment
 - Moving and handling
- Implicit PS content

The content of this will vary by session and may be categorised differently as well, so it is difficult to break this down further. For example hand-washing could be seen as explicit PS content for one session but for another (eg one I have observed aseptic dispensing) hand-washing was discussed in the context of sterile transference of liquid and was not related explicitly by any of the staff to the safety of patients).

5. Researcher thoughts:

- Observer effect – times when you felt your presence may have affected the content of the session
- Future questions - things you would have liked to ask the students about (for focus groups)
- Inferences made – what you have personally inferred from the situation

Vignettes

Vignettes (about half a page) for each session might be a way of condensing and aggregating the descriptive data and the researcher interpretations in order to provide a 'caricature' of sessions. This would give us a way of describing and illustrating the academic 'cultures' and ethos while retaining the rich feel of it. These would also allow comparison across profession specific courses and then across professions.

Appendix 5: Focus group schedule for newly qualified staff

NEWLY QUALIFIED STAFF FOCUS GROUP: 1 hour preceded by 15 minutes refreshments

Approximate cumulative times given:

0 – 5 mins - Introduction, welcome from organiser & ground rules

Ground rules

What you say is confidential and whatever views you express will be anonymised so that no one outside of this room will know who has said what;

You should therefore treat information and views expressed in this room as confidential;

Please feel free to say what you want and feel free to discuss comments or add your own experiences;

Please allow others to have their say (even if you disagree);

Try not to name other students, patients or staff;

With your consent the discussions will be recorded so that we can analyse them later;

It's not so much a question and answer session as a forum for discussion;

I may need to stop a discussion if going over time in order to get all topics discussed;

The purpose of the group today is to discuss your perspectives regarding the ways in which students (in ? profession) learn about keeping patients safe.

5 – 10 mins Group introductions

Leaders & participants – names, roles, place of work, how long qualified. Record names/positions. *State the 4 topics to keep the structure of the discussion*

10 – 15 mins TOPIC 1 – perception of patient safety

Question 1: Could we start by asking each of you to describe your own definition of patient safety – not what you think an official version might be but your own definition?

Prompts – key words – error, mistakes, harm, risk.

20 – 30 mins TOPIC 2 – describing PS learning experiences during training

Now could you look back to the experiences you had during your training

Question 2: How and where do you learn about patient safety and keeping patients safe?

Prompts –

- a. Was any course content specifically relevant?
- b. Which methods were used for learning about patient safety? (on campus — reading, lectures, seminars, tutorials, by instruction from teacher/clinicians, PBL, group work, portfolios, role play, computers, practical lab sessions,

presentations, video, by observation, practice placements, from patients themselves, from mistakes (their own/peers/clinicians), reporting, root cause analysis.

- c. From whom did you learn about patient safety? (mentors, other professions, tutors)
- d. Did assessment (exams and tests for your course) influence the way you learn about safety?

30 – 45 mins TOPIC 3 –how training is being put into practice

Question 3: Now that you have qualified and have been working in the NHS for a while, is your training being put into practice?

Prompts -

Are you using what you were taught?

Are you learning new / other ways of doing things?

Was your training relevant to your area of practice?

Question 4: Could you describe any experiences where things that you learnt during your training have been used or not used, useful or not useful – in practice.

Prompts – what have they learnt about PS since qualifying - how?

– 5 areas, Trust policies & procedures

45 – 55 mins TOPIC 4 – how learning about PS could be improved?

Question 5: Reflecting back on your own experience how do you think patient safety education could be improved or strengthened in order for you to become safe/r practitioners?

How do you think students should or could learn about PS?

Prompts – methods (see 2 above), content – 5 areas +, professional development

55 – 60 mins Closure – anything else to add? If you would like a summary of the project findings next year please give me your contact details. Many thanks for your time.

Appendix 6: Focus group schedule for students

STUDENT FOCUS GROUPS: 1 hour long preceded by 15 mins refreshments

Approximate cumulative times given

0 – 5 mins - Introduction, welcome from organiser & ground rules

Ground rules

- What you say is confidential and whatever views you express will be anonymised so that no one outside of this room will know who has said what
- You should therefore treat information and views expressed in this room as confidential
- Please feel free to say what you want and feel free to discuss comments or add your own experiences
- Please allow others to have their say (even if you disagree)
- Try not to name other students, patients or staff
- The discussions will be recorded so that we can analyse them later
- It's not so much a question and answer session as a forum for discussion
- I may need to stop a discussion if going over time in order to get all topics discussed
- The purpose of the group today is to discuss your perspectives regarding the ways in which students (in ? profession) learn about keeping patients safe

5 – 10 mins Group introductions

Leaders & participants – names. Record names/positions. *Could state the 4 topics to keep the structure of the discussion*

10 – 20 mins TOPIC 1 - perception of patient safety

Could we start by asking each of you to describe your own definition of patient safety – not what you think an official version might be but your own definition.

Prompts – key words – error, mistakes, harm, risk, our 5 areas – risk assessment, communication, infection control, patient handling, drugs/prescribing. Other? areas

20 – 35 mins TOPIC 2 – describing PS learning experiences

Now thinking about any experiences you have had of learning about patient safety – could you just describe your experiences for us.

Prompts – Content – anything mentioning PS specifically, 5 areas

Methods – on campus — reading, lectures, seminars, tutorials, by instruction from teacher/clinicians, PBL, group work, portfolios, role play, computers, practical lab

sessions, presentations, video, by observation, practice placements, from patients themselves, from mistakes (their own/peers/clinicians).

35 – 45 mins TOPIC 3 – perceptions of the best ways to learn about patient safety

Of all the learning experiences that you have had, which do you think have been the most successful in helping you to learn about keeping patients safe? Which were the least successful?

Try to elicit content and methods

45 - 55 mins TOPIC 4 – how learning about PS could be improved?

Reflecting back on your own experience, how do they think students should or could learn about PS?

Prompts – methods (see 2 above), content – 5 areas + professional development

55 – 60 mins Closure – anything else to add? If you would like a summary of the project findings next year please give me your contact details. Many thanks for your time.

Appendix 7: Focus group schedule for Patients involved in education

PATIENT FOCUS GROUPS: Preceded by refreshments – 15 mins

(For the facilitator a reminder – the aim of this focus group is to collect data regarding patients' perceptions of education, and views and opinions regarding the ways in which they think PS education is planned and delivered)

Approximate cumulative times given

0 – 5 mins – Introduction, welcome from organiser & ground rules

Ground rules

- What you say is confidential and whatever views you express will be anonymised so that no one outside of this room will know who has said what
- You should therefore treat information and views expressed in this room as confidential
- Please feel free to say what you want and feel free to discuss comments or add your own experiences
- Please allow others to have their say (even if you disagree)
- Try not to name other patients or staff
- The discussions will be recorded so that we can analyse them later
- It's not so much a question and answer session as a forum for discussion
- I may need to stop a discussion if going over time in order to get all topics discussed
- The purpose of the group today is to discuss your perspectives regarding the ways in which students (in ? profession) learn about keeping patients safe

5 – 10 mins Group introductions

Leaders & participants – names. Record names/positions.

10 – 20 mins TOPIC 1 - context

Let's start off by looking back at the experiences you have had so far of being involved with the students' learning – could you just describe your experiences for us?

(Each to give a brief overview of their involvement)

Prompts – where have they met students? for how long? how often? have they helped with writing the curriculum, teaching, lecturing, being an exemplar/expert patient in a lecture/seminar, meeting the students alone or in groups, talking to students, being examined by them? how involved with student learning have they been?

20 – 30 mins TOPIC 2 – perception of patient safety

Moving on: the government is currently very concerned about patient safety PS - what does PS mean to you ?

Prompts – key words – error, mistakes, harm, risk, our 5 areas – risk assessment, communication, infection control, patient handling, drugs/prescribing. Other?

30 – 40 mins TOPIC 3 – how students have learnt about patient safety

From your own experiences can you give an example of how you think students have learned about PS?

Prompts – reading, lectures, seminars, tutorials, by instruction from teacher/clinicians, PBL, group work, portfolios, role play, computers, practical lab sessions, presentations, video, by observation, practice placements, from patients themselves, from mistakes (their own/peers/clinicians).

40-60 mins TOPIC 4 – how they think students should or could learn about patient safety

From your experience how do they think students should or could learn about PS?

Closure – anything else to add? If you would like a summary of the project findings next year please give me your contact details. Many thanks for your time.

Appendix 8: First analysis framework for organisational documents

First level analysis of organisational documents 2a(6b)

Aim of the analysis:

The documents will be examined in order to identify any underlying organisational ethos. For example analysis may include looking for common trends, the ways in which PS issues are written about or viewed, the evidence base for the documents, political issues or leanings. This will give a picture of wider influences on planned education courses and day-to-day working practice.

Document title:

1. Audience
2. Author(s) (role of author(s))
3. Last updated / review date
4. Any definitions of patient safety
5. Overall aim/s of the policy
6. Any broad political statements (eg the Trust takes PS very seriously...)
7. Any statements about how to implement, practice, monitor or audit the policy
8. Explicit statements about Trust's ethos, culture and approach to patient safety
Look for any examples of approaches: organisational structures such as committees and subcommittees and the hierarchy of such structures (eg ward teams at the 'coal face' then sub committees then executive board), systems for reporting and complaints, specific initiatives (eg infection control measures)
9. Researcher reflections – any implicit/ hidden messages about PS

Appendix 9: Organisational context interview schedule

Interview Questions – Organisational context

Patient safety in health care professional educational curricula: examining the learning experience

Semi-structured interview schedule with a) risk manager (alternatively quality control, audit manager or similar) and b) a senior professional

Name

Job title

Responsibilities/remit

Date of interview

Transcript code (confidential to interviewer)

1. Introduction

- Thanks for agreeing to interview
(Recording of interview to be agreed beforehand)
- Confirmation that have read and are happy with information about the study:
If not answer questions/provide information
- Confirmation that have signed consent form:
If not do now (if in person) or arrange if on telephone

Reiterate that the purpose of this interview is to:

- Identify the *organisation's* views of PS
(NOT the view of the individual; organisation covering –Trust, management, profession, and policy)
- To gain some insights into the organisational culture regarding PS and 'cultural' influences on PS education and PS practice

2. Organisational understanding of patient safety

As you know the focus of our study is education about patient safety and because students from health care professions spend a lot of time training in clinical settings we wish to explore the ways in which health care organisations (NHS Trusts etc) view patient safety issues. We really want you to tell us how your organisation approaches this.

(*We must remember that we are 'viewing' these people as representatives of the organisation, what we are getting at here is the organisational ethos/culture NOT the views or speculations of particular individuals)

- Could you give me an overview of how your Trust approaches patient safety?
(May need to give some prompts such as: strategies for patient safety – are these documented? who takes the lead on PS and what level are they?)
- What developments in patient safety have occurred at the Trust in the past year or two?
(May need to prompt – could be new policies, new systems; which initiative and activities? may relate to specific problems at the hospital Trust)
- What are the Trust's priorities with regards to patient safety and how does the Trust translate these priorities into practice?
- Which systems and processes within the Trust are key to PS?
(use probes eg which activities are most pertinent to PS and why? – try to get concrete examples)
- How do you think systems and processes are perceived by the Trust's employees? *(is there adherence/dissonance)*
Are there any differences between the different professional groups?
- Do you induct new staff into patient safety issues in your organisation?
How?
And what about ongoing training in patient safety for staff?
- What do you perceive to be the key influences on PS practice within your Trust? *(Internal: people, policy, External: people, policy, publicity)*
Try to get specific examples, eg if it's people, what sort of people? What is their role? If policy, which policies?

3. Further data collection

- What organisational documents would you recommend, to give us a feel for the way in which the organisation views and handles PS?
(Looking to get range of overarching and topic/area-specific and profession specific induction packs)
- Is there anything else that you would like to add about patient safety?

4. Finishing off /closure

Thinking back over the interview is there anything in retrospect that you would like to change or that you would prefer not to be transcribed?

Would it be OK to contact you again if we need more detail on any of this?

There will be an opportunity near the end of the study to attend a feedback meeting and there is a website that you can access for updates and a final summary at: <http://psafety.ncl.ac.uk> (e-mail address as well) Thanks for interview. Thank you very much for your time.

Appendix 10: Analysis framework for organisational interviews

Patient Safety Education project (Phase 2a step 6c)

Analysis framework for interviews with key informants from the organisational context (Risk managers, quality managers, professional leads etc).

Note: Organisation covering: Trust, management, profession, and policy

The purpose of the interviews was to:

- identify the organisation's views of PS and
- to gain some insights into the organisational culture regarding PS and the cultural influences on PS education and PS practice

Organisational understanding of patient safety

1. Descriptions and overviews of how the organisation approaches PS:
 - a) Any definitions of patient safety;
 - b) Any broad 'political' statements (eg the Trust takes PS very seriously);
 - c) Any examples of approaches:
 - i) organisational structures such as committees and subcommittees;
 - ii) the hierarchy of such structures eg ward teams at the 'coal face' then sub committees then executive board
 - Dissemination of information regarding PS to all levels of staff
 - Is this discussed? how is dissemination carried out? what are the strategies and processes involved?
2. Developments in PS
 - i. Any identified, any concrete examples given
3. Systems and processes – are they identified and described eg:
 - reporting systems
 - complaints systems
 - governance measures
 - focus/initiatives on specific areas (eg hand washing)
4. Views on the ways in which staff perceive PS systems and processes
5. Induction of new staff
 - Is PS or related issues such as quality improvement/ quality assurance included in induction?
 - If so how – are any examples given?
6. Key influences on PS practice within the Trust
 - people
 - policy
 - publicity
 - other

Appendix 11: Organisational context interviews by participant type and site

Site	A	B	C	D	E
Participant type					
Profession specific: Managers, Leads, Directors	Medical	Nursing Physiotherapy Pharmacy	Pharmacy	*	Nursing
Organisational representatives with a PS remit: Managers, Directors, Leads	Risk	Clinical governance and risk Quality assurance	Clinical governance	Risk Clinical Governance Services and complaints Quality & Clinical Governance	Risk

*Professional leads at this site declined to be interviewed.

Appendix 12: Practice observation prompt sheet

(Code for site and specialty eg site A GP1)

Where, when, how long?

Location: (eg hospital or community and specialty of unit)

Date observation occurred:

Duration of observation _____ until _____

Brief description of consent process (if appropriate)

Description of physical area, room/ward set up

Who?

Description of students and staff – numbers, sex, position/status if known, patients, others

What happens?

Descriptions of what happens with as much relevant detail as is felt necessary

- could be usefully structured as discrete interaction episodes, or actions, or into time periods
- bullet points for actions/interactions within a time period or in relation to a patient may also be a useful way of further breaking down the observation period

The topics drawn from the 1st data set:

- Moving and handling
- Infection control
- Communication
- Drug prep/administration/ management
- Clinical procedures

Other things to remember/consider

- Who the student(s) are with (? Role models, multi disciplinary team members)
- What they are doing and any non verbal actions/reactions (eg yawns, facial expressions etc)
- Any identifiable instances of students witnessing threats to PS and the reactions of staff and students
- Comments or actions re PS culture: checking procedures, blaming, brushing under the carpet
- How they are doing things: order, as directed, different to staff etc.

Accounts of any chats or conversation between the observer and the student or educator

Initial researcher reflections

Vignette/Narrative Summary

Appendix 13: Analysis framework for practice observations

Initial analysis framework for practice observations: Notes for researcher:

- Try to bear in mind the subtle difference between:
 - a. PS day to day working practice (and culture) and
 - b. PS education practice

A. Descriptive

What was happening: specific episodes /interactions or time periods – these may need to be written as scenarios/vignettes initially, using the following as prompts /a loose structure/ things to consider. Do this first and use as illustrations /evidence of the concepts in B – and any other issues/concepts arising.

Educational process

What were students doing? (types of experiences):

- Working alone or with others – if so with whom?
- Were they being actively/directly taught? (shown how to do something, told how to do something, given instructions)
 - if so by whom (including pair work with tutor/other student)
- Were they observing someone? (but not necessarily being instructed)
- Or were they undertaking care / tasks / jobs alone?

Experiences and Topics

- What about? (topic, skill, content):
 - PS topics explicit/implicit/hidden/topics ie infection control, risk assessment, patient handling, (moving and slips, trips & falls);
 - Communication - with whom, where and how? (*spoken & written – records /transfer/ discharge/ consent / confidentiality*);
 - Drugs & prescribing;
 - Clinical & technical procedures (*therapies, blood, equipment, other???*);
 - Clinical reasoning / judgment (*eg diagnosis, treatments*).

B. Initial interpretation / theoretical abstraction

We could structure the interpretations in the following way (only a suggestion, please discuss if necessary): Use examples/episodes related to topics such as communication to illustrate theoretical concepts such as those below. So under role models we end up with a series of examples of ways in which students learn, and/ or exposure to potential role models, or behaviour which could be modelled/copied/learnt. Can we identify any evidence or examples of :

- PS as practiced /normal day to day working?
- Trust procedures –(eg the influence of the organisational context perspective)?
- Cultural norms?
- Role models?
- IPL?

Appendix 14: Focus group schedule for practice staff

Qualified staff focus groups 1 hour

Introduction, welcome from organiser & ground rules 0 - 5 min

Ground rules

- What you say is confidential and whatever views you express will be anonymised so that no one outside of this room will know who has said what
- You should therefore treat information and views expressed in this room as confidential
- Please feel free to say what you want and feel free to discuss comments or add your own experiences
- Please allow others to have their say (even if you disagree)
- Try not to name other students, patients or staff
- With your consent the discussions will be recorded so that we can analyse them later
- It's not so much a question and answer session as a forum for discussion
- I may need to stop a discussion if going over time, in order to get all topics discussed
- The purpose of the group today is to discuss your perceptions regarding patient safety in day to day working and the ways in which students learn about keeping patients safe. Emphasis on student learning

Group introductions

Leaders & participants – roles, place of work, how long qualified. Record names/positions.

PROFESSIONAL EDUCATION 5 – 55 mins (average of about 7 mins each)

1. How and where do you think students learn about patient safety and keeping patients safe? What aspects of their training, do you think relate to practice of patient safety? *Prompts: In university? On placement?*
2. What is your understanding of the role of clinical educators/tutors/supervisors in relation to students learning about patient safety? *Prompts: Experience/anecdote/role model/time for reflection/discussion/autonomy /opportunities to have “real” practice (as opposed to just observation), learning from mistakes*
3. In what ways do the students learn about specific patient safety topics when they are on placement with you? *Prompts: choose 1 or 2 examples that are most*

relevant to the profession – from infection control/manual handling/risk assessment /drugs /communication skills/technical/clinical skills (as appropriate)

4. How do Trust policies and procedures (include day to day practice) impact upon student learning? *Protocols*
5. Does assessment impact on their learning in practice – *if so how?*
6. How does all of this relate to your own experience of teaching and learning about patient safety? *Interprofessional work and learning*
7. How do you think patient safety education could be improved or strengthened in order for (*professional group*) to become safer practitioners?

55 – 60 mins: Closure – anything else to add? If you would like a summary of the project findings please give me your contact details. Many thanks for your time.

Appendix 15: Analysis framework for practice focus groups

Phase 2b (step7a) Practitioner Focus groups

Focus groups aimed to elicit notions and perceptions of patient safety practice, policy, and education:

Initial analysis framework

1. Student learning (about patient safety)
 - *Where*
 - a University
 - b Placement
 - c Specific aspects of university training identified
 - *How*
 - a Processes
 - b Ways students learn about specific patient safety topics when on placement
 - c Anything about the 5 topic areas eg *infection control /manual handling /risk assessment /drugs /communication skills and/or technical/clinical skills*
 - d Role of assessment on learning in practice

Any examples /illustrations /anecdotes?
2. View of role of clinical educators /tutors /supervisors
 - Role and remit
 - Strategies used by 'clinical educators'
 - Tensions
 - Relationship with work
3. Influence or impact of Trust policies and procedures on learning
4. Influence or impact of day to day practice upon student learning
 - Common ways of doing
 - Habits [bad or otherwise]
 - Anything about the 5 topic areas eg: *infection control /manual handling /risk assessment /drugs /communication skills / and/or technical /clinical skills*
5. Practitioners' own experiences of learning about patient safety
6. Interprofessional work and learning
7. Views on improving or strengthening PS education or professional education

Any other emerging issues of note to researchers: *things which seem of particular importance to practitioners, one off or strange things which strike the researchers as in some way important.*

Appendix 16: Medicine additional data

The Academic context

Academic context and the formal curriculum

...and then clinical procedures is another area and we don't stand up and say: this is about patient safety. We say: this is about good practice and being a good doctor, and being patient-focused, you know, being... for example introducing yourself, making sure you have got the right patient, checking it against their name bands and against either their patient notes or their... perhaps it's an IV canulation prescription – so we actually teach that as part of our clinical procedures. (Interview with course leader, Site A)

... many years ago after labouring under the illusion for several years at the beginning of my teaching career that teachers made much difference I – and I still think we do on an individual basis – but I think practice and policy often have more of an influence on education than the other way around.

It always worries me that when I'm asked about patient safety. It always worries me because I suppose philosophically I don't like treating it as a separate entity – doesn't sit easily with the way I've always done things. To me, teaching the student good clinical practice, you are by definition teaching them how to be safe. It's almost as if you say – where in your driving lesson did you learn about road safety? The whole business of learning to drive is learning to be safe so what we're trying to do is highlight issues then say yes we are covering them, but we didn't sit down and say these are the issues we need to develop. (Interview with course leader, Site D)

The unhelpful answer is that everything could be relevant, but... in undergraduate programmes that's actually not a banal answer because if the students don't know core knowledge that will help them to look after patients at a very basic level when they first qualify, they will be unsafe. If they don't have the procedural skills, you know – how to give an injection, how to take blood, the skills that we set out, they will be unsafe. If they conduct themselves inappropriately... not making records or not washing their hands, which are two very different activities, they will be unsafe. (Interview with course leader, Site D)

Well, I think it's an... it clearly is an ideal thing to be developed within the workplace and within students, you know, the learning that they do in the workplace. So I think, you know, really it's a very practical thing and it's a very workplace related thing and I think that's where the learning should come from. So therefore you're sort of dependent on the people that are delivering teaching or teaching and learning in that setting. And my feeling would be it would be much more real and much more powerful for learning if students actually see it happening, rather than just get told about it when it's actually divorced from practice. So I suppose in a bigger picture, if you think, well, people's awareness of patient safety issues are being raised in general, then one would hope that that would then filter down to... well, if they're

more aware of the issues – then actually in their teaching of the students these issues are more prominent and the students will learn about them. But I'm aware, in saying that, that that's a bit ad hoc and, you know, it doesn't deliver consistency for the students. But if it's a real issue and it's out there in the workplace, then students are out there in the workplace and they have a reasonable amount and appropriate teaching, then one would hope that they would learn about it. (Interview with course leader, Site C)

It's implicit rather than explicit in a lot of cases, and I think that, you know, it was encouraging that it was there implicitly but I think that the challenge then is actually making sure that those examples or those opportunities are made explicit to the students. So I think it's quite important that teachers and people day to day are more aware of this so they can actually make the students more aware as well. (Interview with course leader, Site C)

...we don't have a theme called Patient Safety, but that doesn't mean it's not there. Equally we don't have a theme called Diabetes, but it's there and what... way back in 98 – because this programme began in 98 – we had some themes to find, just a few actually, to highlight certain themes. We have now divided our curriculum, as I say, into 13 themes so that every learning objective, or everything taught will belong to one of those 13 themes right? Um, but the other way we are considering... we do consider our curriculum – is looking at key clinical topics, and that is to take account of things that are neither a module in its own right, nor belong to a large academic or clinical theme, or discipline. So for example allergy has fallen into that in recent years; diabetes – because diabetes isn't taught in just one module, so it doesn't happen at just one time, and nor does it belong to just one of the themes so it's another way of, I suppose, searching and describing our curriculum because key clinical topics will cut across modules and the themes. (Interview with course leader, Site A)

Academic observations

Two and a half hours of the Year 5 Intravenous Therapies session was observed. This is part of teaching clinical procedures. The session began with a brief introduction by a clinical skills facilitator. This was followed by two procedures that were first read out loud, then demonstrated by the facilitator on mannequins and subsequently practiced by the students. Then the facilitator divided students into two groups to discuss case scenarios. Scenario 1 involved an empty allergy box on a patient's Cardex and Scenario 2 involved the administration of the wrong drug. The case scenarios were later shared with the whole group. This was followed by the demonstration and practicing of a further two procedures and a drug calculation exercise. (Researcher description of observed teaching format, Site A)

Site D Safe Prescribing – drug interactions and adverse reactions:
'Don't wait until the patient is harmed – that's a bit late really'

This Year 3 lecture was given by an experienced clinical tutor who obviously knew the students and their prior learning well. A large amount of scientific detail was covered in the hour but the students remained very interested as

the tutor lightened the atmosphere at regular intervals with 'in-the-know' medical jokes and humour. This seemed to be the beginning of induction into the medical culture.

Patient safety as a term was not mentioned at all but the whole of the lecture was about reducing harm and errors with a mention that risk assessments are necessary to balance benefits against harms. Case reports of harm to patients were presented and the students were warned of the possibility of litigation. Use of the BNF was recommended. The lecture was complemented with a power point presentation of do's and don'ts when writing prescriptions which was posted on the School's electronic system. (Researcher's notes)

A whole day of the Year 4 Joint Teaching Week Sessions on Clinical and Professional Risk and Medical Informatics was observed:

The day consisted of five lectures followed by group work facilitated by a tutor in each group (including a presentation of the results of the group work). All sessions took place in the same tiered lecture theatre.

Key skills and issues addressed varied across sessions. The day was divided into three lectures on clinical and professional risk in the morning and lectures and group work on medical informatics in the afternoon. The sessions were part of the Joint Teaching Week, which meant that lecturers came from different areas of specialism including primary care, psychiatry and anaesthesia. Key issues discussed throughout the day included making accurate risk assessments, understanding risk communication, risk management, the role of IT in addressing/managing risks, awareness (of the situation, own limitations, risk and solutions), communication, accurate and up-to-date record keeping, reflection, learning from mistakes and promoting a positive attitude to incident reporting. The value of the sessions was that students were made aware of the effect of medical errors on patients, and potential strategies for reducing adverse events such as incident reporting, awareness and computer systems. (Researcher description of observed teaching format, Site A)

Academic context – the views of students and patients

Student focus groups

I think also we have drummed into us about this accountability: you know, if something does go wrong it's best to be honest about it straight away there and then, so remedial action can be taken rather than, you know, do something else... because it's easy for us to – for health care professionals to – make a minor mistake that can have catastrophic consequences. So rather than live in a kind of fear of blame – and this is what I've learnt from clinical practice – we don't live in a fear of blame so much but we all need to improve our practice. (Year 2 pharmacy student, Site D)

I think we were taught well how to communicate with our colleagues because they've said that we are very nice at the (teaching hospital) and that we talk to them, and we involve them, but I don't think we can over emphasise the importance of the communication. Make sure you tell the nurse who's looking after the patient what the management plan is; make sure you've ticked the jobs when you've done them; put in what's happening. (FY1 doctor, Site D)

I think there is a big difference between sharing about something in a lecture and actually doing it for yourself. I mean, like when you... say for example things like... when you hear about it in a lecture, it's like: oh OK that's fine, you know. But when you actually pick up the needle and you go to the patient, it is like a completely different thing. It's quite helpful to get personal experience yeah. (Year 2 student, Site A)

Seeing senior people like consultants discuss where things have gone wrong – where we sit in on those sort of problems like in obs and gynae whatever they're saying... what went wrong and this sort of thing – I think that really helps because you're seeing it from a senior level and they're kind of setting an example. Yes, you look at what happened, or: we did these investigations, we couldn't find this; we did that – should we have looked at it and gone another way? (Final year student, Site D)

Most of the lectures we have tend to be on, like, physiology and stuff like that. And if something does come up in lectures it's hard to kind of sink in because it's one person addressing 200 and there's an awful lot of thinking as well. It's not really emphasised at all. (Second Year student, Site A)

But do you learn through assessments?...

R1 – not really because you don't get feedback.

R3 – you don't get feedback, that's one thing...

R2 – you never know how you've got your score. Or even your breakdown of what you did well.

R1 – they use questions, I guess they can't give out the answers.

R3 – but you don't really learn from your mistakes.

R1 – especially in our last sort of... our acute and general medicine exam. There was definitely, like, a lot of questions in there that... two out of five options. I was like: 'I think it could be either of those', to a lot of them. It's good to know, because I think you do learn from. Cos you've spent a lot of time pondering over a question, I think you do learn. If you were to find out the answer, it would stick, more than reading books.

(Final year student , Site A)

...I think from your peers and from observation on the wards. So if you did FY1 shadowing – so three hours of final year medicine, following an FY1 around for a while – then they might see what they do and how they are practicing and that's how we're supposed to base our own practice. You just kind of copy what you've seen. Also the nursing staff... you see them doing checks and double checking medications, you know: they read the bottles. Everybody has to read the date and concentration on the drug dose and then it is double checked by somebody else. So you probably wouldn't know to do that had you not seen somebody else doing that before. So it's really anybody that you can pick up the skills from, anybody within the clinical setting I think and any practical sessions too. (FY1 Doctor, Site A)

Patient focus groups

You are apprehensive with the staff with certain treatments and blood transfusions and you're going into hospital – stories outside spread like wild fire among the rural community and somebody comes in here and doesn't perhaps get the treatment they thought they were going to get or wasn't adequately explained or the explanation was a bit too complicated to understand and they should have brought somebody else with them – then they feel unsafe. (Patient focus group, Site D)

R4 – but what you were talking about – doctors like Dr [name] before he went into practice... I said to him one day, I said: do doctors never get ill? I says: you never get ill. In fact I went into the house this morning, mother and daughter in bed choked with the cold. He says, they were better than what I was. Now like you said, it can get thingummy, he's not looking when you are talking, he's writing down. Whereas I notice, wee [name], when you are talking to her about your illnesses, she keeps looking at you.

R2 – aye, and listening to what you are saying.

R4 – and she's watching your face and watching your fingers.

R2 – that's right

R4 – and this is where I feel some doctors are brilliant and they study you. They can tell exactly where you are coming from.

R2 – exactly, that's the biggest asset that they've got.

(Patient focus group, Site A)

R1 – now, with the other doctor, you have the whole shilling. And the kids all ask... they ask you first what happened – because I've had Crohn's disease. I did start and all the rest of it. And they go back and come up. After they listen they examine you and they ask questions about it. But like the lady said, I had 3 come to the house one day and sometimes I wondered if that was a better way of teaching them because they ask you questions, they examine you and then go back to the doctor and let's see how much they learn. Because, you know yourself, you're the business, it's more if you're doing it yourself, a hands on job.

R2 – face to face

R1 – face to face, hands on job. Whereas, you listen to somebody – you miss half of it.

(Patient focus group site A)

The Practice Context

I think although you try to work it in and you teach them a lot of it, probably more than half of it is learnt by seeing what's done when they're on site. Because you can actually have it on the course, or go through it in scenarios, but if you're working on a particular team – depending on what the clinical responsibility is/are – you will actually see how that team works and what that team looks for. (Practice focus group, Site D)

Just to pick up on that... I mean, we teach on a session that [name of other GP] does – and you're doing this afternoon, I believe – we talk about the aims and objectives of the 4 week attachment and we talk about attitudes, knowledge and skills. Just thinking – I don't think we specifically document anything about patient safety there and it's maybe something... I guess it's a sort of theme that's integrated sort of into all these attachments. Yes, it's something that we could flag up if we were trying to highlight it as an issue and we could get through some of the things we've been talking about. (Practice focus group, Site A)

Generally if they're interacting with patients. They're interacting with patients, really, on their own in acute medicine: they would go and (xxx) the patients in and they will, on the first day ward round, effectively act as if they were an FY1 and present that patient to the consultant on the round and then get feedback from that consultant about what they've done right or what they've done wrong. (Practice focus group, Site A)

I get the feeling from what they've told me about their ward placements that they don't really get a chance to shadow a foundation doctor, or feel they're really part of the team: they don't do on calls with people. (Practice focus group Site D)

R1: ...the patient safety for the drugs is I think, improving all the time and the safety in practice aspect and that is going to develop to take more pharmacology into it. I think if you really want to look at patient safety from a pharmacology point of view, I think I would have to put my hand on my heart and say that you would need to not make pharmacology a vertical theme and make pharmacology a core subject that they are formally taught in a better way than they are currently.

R2: Hmm, yes, I think taking on from this pharmacology... well we've already started to improve on that in a way...

R1: Yes I think it's...

R2: We've identified that this was a major problem which students (xxx) themselves.

R1: That's a major problem UK wide – it's not just [Site A] wide.

R2: So we've already been allocated some further... therapeutic sessions that we are doing in year 4 and year 5, so they're getting more teaching than they used to.

(Practice focus group, Site A)

I think the doctors of tomorrow are going to be sued because their basic, you know, pharmacology knowledge and so on is not as good as it used to be. I think the pendulum needs to swing a little bit further back to the right I'm afraid. That's my own... my feeling. I think there's lots on communication and all of these things are very – and psychology and patient centeredness is all very, very important – and as a general practitioner I value the importance of it. But I think we need to get the core basic knowledge and science of our students up, to ensure good patient safety and... but I think the pendulum needs to swing further back to the right – I think. That's my feeling. (Practice focus group, Site A)

I think that's where in general practice we are pretty good on patient safety with the students: because – certainly when I'm getting them to go through histories with me – I will say: right what medication is this patient on and what are the potential problems with those medications? And what if it's a patient with asthma? What if they developed heart failure? Why can't we give them beta blockers? And I think that's where we're probably better for medication safety. (Practice focus group, Site D)

But when they're interacting with patients as a year 5 student, we generally let them do it on their own. No one will actually go and supervise them unless they need to do a practical procedure on that patient. If they've never inserted a cannula before we wouldn't allow them to do it unless they've been deemed competent to do so, and they would be deemed competent to do so if they've done their clinical lab station and one of the senior doctors have actually supervised them during a few cannulae and they've been deemed competent to do so: then they can do that. But for practical procedures they would have to be competent to do the procedure first, otherwise it would have to be supervised. But when taking a history and examining patients they generally do that on their own in year 5, because by that time they're meant to have really, you know, garnered the skills of history taking and clinical examination by then, so they're deemed competent to do that. (Practice focus group, Site A)

I think the way that I try to approach students, um, from when the students are with myself... say we were out doing house calls and we're out doing all sorts of things: I sort of try to be very reflective in the way I'm practicing and to try and instil in the student good practice... which is what I'm sure most people do, because an awful lot of what the students learn is through osmosis as well as actual, you know, a, b, c, d step wise – sort of seeing a

process through. And I think, for myself, hand washing is something that I, you know, make sure that I do after every patient and I make sure that when I am consulting, the student is aware that I am hand washing and, you know, I'm just trying to give the best example of good practice that I can when I'm with the students, with the total transparency that I am not perfect... and I think that when there are situations where you might deviate from something – not hand washing's not a good example – I usually would explain to the student why I am taking such and such a step where you would normally do, you know... For example there was one time I had to do a house call and I was taking blood and I didn't have a – um, what do you call it – a sharps bucket with me and I had to re-sheath the needle. And the student was with me and I was like: you know, you absolutely shouldn't re-sheath the needle but in this set of circumstances I have to do it because of this and, you know, this is real life medicine. And the student and I had quite a big chat about that, and we spoke about if they were ever in that situation what they, need to do about it, you know, and things like that. That's how I try to approach patient safety with the students and highlight as much... as many areas of potential risk to patients as possible., you know, [name of other GP]'s example of drug interactions on GPASS and all of those things. So if you're highlighting it as you go along – the potential areas of problem – then I think that's really what you can do. I don't know that it's necessarily something that you can formalise: I'm not sure that it would be easy to do that. (Practice focus group, Site A)

I think that during the clinical pharmacology sessions that we have in year 3, as an introduction we already start to introduce them to the Yellow Card Scheme, the [name of place] Joint Formulary and there's also the MEC which is the student formulary. So they're pointed to the various, you know: these are there for them to access in their own time so they're aware of them, but it's not the point that we keep pressing on because they've got enough on their plate, poor students. The last thing we want to do is confuse them with having a student formulary and then a [name of place] joint formulary and then SMC guidance etc. So they are aware that all these various committees exist and produce guidance; they are aware of NICE guidance; they are aware of SMC guidance; but we certainly wouldn't expect students to be able to keep up to date with all of this which is coming out of various bodies all the time. So all we can do is to make them aware that these bodies exist. (Practice focus group, Site A)

R 6: If you look back you can see perhaps 5 or 6 different places where a single intervention would have prevented it, but the fact is it was just a cascade of errors. So I think pulling out real cases like that and discussing them with students is good.

R 7: I think, though, we have to be careful to strike a balance between making them aware of PS and not scaring them. I don't know if anyone else has sat through MDU and MPS lectures or read through the case book that gets sent in: you'd not want to practice after you've read that.

R 2: Actually I do. Whenever I get them through the post I stick them in a box in the practice and I often just bring out certain cases as an interlude from time to time.

R4: But I think the point earlier on is extremely important. We all make mistakes and therefore we have to learn how to live with them, and how to report them and how to move on from them.

(Practice focus group, Site D)

The Organisational context

I think the first thing is that patient safety as a specific strand of work has become much more important in the last two years probably. In a sense people began to read – well reading, ‘Organisation with a Memory’ and so on. And since the work the Health Foundation has done with the Institute of Healthcare Improvement in Boston, everybody is aware of the importance of this work and the fact that some of our really difficult problems actually are soluble if you take a very structured and comprehensive approach. (Interview with manager, Site A)

I suppose the first thing to say is that patient safety is absolutely top priority. (Interview with manager, Site D)

Everything we’re doing is patient safety and that’s all, that’s the focus. (Interview with manager, Site A)

I think if you look at cultural surveys... there was a cultural survey done in 1995. That was one of the things that staff said: that, yes, they reported but they didn’t get feedback. And that was one of the things that when I came here, I looked at and said: we have got to correct that, we have got to deal with it. There is no point in asking staff to fill in lots of forms and do that if they have never known what is happening. So one of the key issues is that we feed the information back and that’s why we are specifically... That’s been welcomed by the staff: that we are now going to specifically target and give them what they want. So if you’re a nurse in a ward and you are reporting an incident, hopefully you will give your team – quality group team – a local report that will be available to all the staff, and people can say, ‘oh right, I reported that’. Now they see the opportunities but they can also see what has happened in other areas. So that is one of the key issues when we looked at that cultural survey; and one of the things we hope to do next year, is – once we have got all of this up and running – is to do a repeat: do our own cultural survey again, and then repeat this cultural survey and see if staff attitudes towards incidence reports etc have changed, based on the survey we’ve done: I think it was in the end of 2005. (Interview with manager, Site A)

Appendix 17: Nursing additional data

The Academic context

Curriculum documents and course director interviews

So you've got to be so careful and conscious of what you're doing. You've always got to be able to rationalise what you're doing, to quantify it... as and when put it down on paper as well and be prepared to justify your actions (Interview with course leader, Site D).

I do know that all of the staff that I work with are quite pedantic about ensuring that the sessions that they do give are up-to-date, and so they go through all, you know... they would trawl on the web and places to make sure that what we tell the students is as contemporary, up-to-date as possible in terms of health and safety for patients (Interview with course leader, Site B).

...because you can have all the knowledge but if you don't actually register that here is a vulnerable individual, with all these factors coming together... but if you can recognise who is at risk and then get into prompt intervention, prompt reporting, prompt team work... and it's so much working with your team, you know: the doctors and nurses, the pharmacists, your infection control system if we are talking about septic shock... (Interview with course leader, Site A).

People are vulnerable enough anyway within any healthcare setting, and a big part of a nurse's role is not to add to their grief, pain, anxiety in anyway whatsoever (Interview with course leader, Site B)

... it's everything else on top of that, it's like all the health and safety regulations rolled into one that governs practice so the universal precautions... so it's not just one thing with patient safety it goes right the way through the system, from making sure it's the right patient with the right drug to how they're lifted, fed, everything... (Interview with course leader, Site D).

Why we've tried to get away from using that title is because it underpins everything you do. Similarly, with patient safety: if we had a module... if I design a module and call it 'patient safety' – the students would think that every other module had nothing do with patient safety. You've boxed it into that box. So in that way if you do badge it what you're doing is you're almost ghettoising it in a particular area. Whereas what you want to do is for it to underpin everything (Interview with course leader, Site B).

Academic observations

Site B

Intra muscular and subcutaneous injection technique

The session began with a 40 minute PowerPoint presentation covering: the reasons for using each type of injection; the underpinning knowledge; anatomy and physiology; injection sites; infection control; aseptic technique; record keeping; policy differences; patient anxiety; injection technique; drugs and dosage rates.

The students listened quietly, speaking when directly asked a question. Examples of both good and bad practice were demonstrated and the safety emphasis seemed to be equally placed: *'it's not just about patients' safety it's staff as well'*. The importance of treating the person as an individual was also emphasized: *'expertise and clinical judgement must be fitted to patient'*.

The lecturer stressed *'practice is changing'* and the need to consult up-to-date books. Common practices were discussed and there was a recurrent emphasis on the need for students to find out about local policies as these may differ from Trust to Trust. The students were given equipment and worked in pairs practising their injection technique on pads provided. The session had an overt patient safety tone but this was equally balanced with the need for staff safety.

Medical devices

This was a one hour slot split into three 20 minute group sessions.

Infusion pumps

Using a pump is like sending a text message and texts can cause embarrassment, but pump mistakes can kill – be careful, check.

An overview was given of the various types of equipment which could be defined as a medical device. Much of the session was about maintaining safety and heightening the students' awareness of potential safety issues. The need for training and the maintenance and upkeep of equipment was discussed. The role of the Medicines and Health Care Products Regulatory Agency was also covered in some detail. The lecturer used an IV pump and syringe driver to demonstrate how they worked, emphasising the differences in machine makes and types.

Differences in policies from Trust to Trust were stressed and students were reminded of the need to find out what the local policies were.

Blood pressure, blood glucose and urinalysis

This session took place in a skills lab with a range of equipment including sphygmomanometers, trolleys, tables, stethoscopes, blood monitor (BM) measuring devices, urinalysis equipment and mannequins. The lecturer explained the procedures step by step. As students practised the lecturer moved from pair to pair chatting and instructing. The lecturer stressed to the whole group:

Do not try to make up a reading – always tell someone. That's good practice: don't pretend, never make it up.

The students looked at the BM and urinalysis equipment. The lecturer explained how the equipment was used and cautioned: *don't stab yourselves if looking at BM*

machine. Although safety was mentioned twice the overall tone of the session was that of learning skills or techniques and that being competent would ensure safety.

Catheters and catheterisation

Literature recommends a size 12 is the safest to use.

Male and female simulated body parts and a selection of catheters and other equipment were laid out. The lecturer gave a very detailed talk covering: the reasons for using catheters; sizes of catheters; aseptic technique; lubrication; anaesthetic use; differences between male and female anatomy and catheterisation procedures; infection; urine sample collection; potential risks and complications; maintenance and care; with frequent reference to the literature and manufacturers' guidance.

Although the key messages were not overtly labelled patient safety, occasionally matters were identified as patient safety issues: *Lubrication? Good question - that is another patient safety issue* and there was an implicit stress on needing to perform procedures and ongoing care properly and to always consider risks and complications.

Moving and Handling

This practical two hour session in a clinical skills room with seven beds was facilitated by three lecturers. Techniques for moving and handling patients; equipment use and maintenance; risk assessment; friction and steering force; suitable attire; communication; and staff and patient safety were discussed. It was stressed that there may be no right or wrong in any given situation but that the risks needed to be assessed. The overt messages about safety were mainly aimed at the students' own safety while patient safety was more implicit. Each student had a 'moving and handling booklet' which the lecturers signed at the end of the session.

Site E

Medication and drug administration

The aim of the session was stated to be to increase the students' knowledge about legislation and how to check drugs safely, to store, prescribe and administer drugs prior to going on placements. The students had read the NMC drug administration guidelines before the session and the British National Formulary booklet was referred to throughout the lecture.

The responsibility for the drug trolley/ward drugs was explained and the difference between controlled drugs, prescription and ward drugs discussed in detail. *The drug round needs close preparation and use of clean drugs pots* the tutor explained, *you don't want to give patients nasty infections. Use water and alcohol gel for hand washing: we want to reduce infection.*

Prescription charts completed by doctors were identified as a possible source of error and the nurse had a role to pick them up: *we as nurses can pick up errors. Then need to go back to doctor and highlight.*

Common reasons for drug errors such as interruptions and reporting errors were debated. The tutor also emphasised that the students needed to be assertive and not be coerced into doing something they felt was unsafe. The students were told that if

this happened they must contact the university and somebody would attend practice to support them. Patient safety as a concept was not mentioned, but safe practice and safety in general underpinned the whole lecture.

Introduction to drug calculations

The students were handed a work sheet with drug calculations to work through one by one. Before the test all the formulas were explained. Students were asked *to use common sense, to feel confident and always start off by making a rough estimate as then you will not make silly mistakes*. The tutor also said that: *if you mess up you will stand in litigation court in a number of years!*

The students were given time to work through eight questions and calculations. The right answers were put on an overhead and students with all answers correct – approximately 20% – were allowed to leave. The tutor then worked through all the answers and students asked questions. The focus was on how to convert units, for example grams to milligrams or minutes to hours.

Moving and handling

This 3-hour session was carried out in a skills laboratory with five beds, different equipment such as chairs, disinfectant/surface wipes, signs and posters about safety on the walls, for example handling a stroke patient, staff posture, back pain, risk assessment. A poster of the NMC code of professional conduct was displayed on the wall.

The session started with exercises and a demonstration of staff posture and ways to keep a 'stable body position'. Different beds were demonstrated: how to change sheets when patients were lying in bed and why and how to get the bed flat quickly to do CPR or if the blood pressure suddenly dropped. The tutor cautioned: *if you tilt the bed too quickly the patient can slide and injure their head*.

The students then worked in groups to practise bed making and operating different types of beds. One tutor demonstrated how to hold the patient at the end of the bed when changing sheets *in order to make them feel safe*.

In the second half of the morning there was a focus on risk assessment. The tutor explained that *nursing is a risky business*, as well as providing the students with 'TILE' a tool for doing risk assessment:

T task
I individual (are you capable?)
L load (often unpredictable)
E environment or equipment

Both tutor and students commented that *risk assessment is such a grey area – where does it start, where does it finish?* It was also pointed out that risks are often hidden.

Patient safety as a concept was not mentioned, but there was a clear focus on safety throughout, as well as linking staff and patient safety. The tutor also cautioned: *the way I am explaining things (eg type of beds) might not be exactly how things will look like in practice*.

Focus Groups

Prevention of harm, risk management, identification of risks, building trust with public and patients.... protection of patient well being in terms of physical, social and emotional terms (Year 3 nursing student, Site E).

We're being told over and over again don't do something you don't know how to do... so that's kind of patient safety in a way... don't put the patient at risk (Year 2 nursing student, site B).

...you realize how much easier it is to use the proper equipment to... (referring to using sliding sheets) (Year 2 nursing student, Site B).

I think as well...we did get shown some documentation, care plans, in uni but I felt for all of the assessments tools... I just learnt out in placement. So maybe just bringing in a few more... there's teams of different assessment tools for different... so it's like knowing all them... (Year 2 nursing student, Site B).

The lectures were absolutely brilliant – hand washing technique, infection, you know, the use of equipment, single use equipment (Newly qualified staff, Site B)

R1 I suppose the clinical aspects of our training obviously were geared towards patient safety anyway without necessarily even mentioning it.

R2 Exactly!

R1 I think it's quite integral to things when we're out in practice and actually doing our jobs. I don't think you can separate it from doing the rest of your job, I think it's just part of it

(Newly qualified staff, Site E).

We don't always know what they're like when they come up to the ward from A and E or clinic so we don't often know what their mobility is like.

Usually it depends on the patient basically because you've got patients who don't necessarily have the mental capacity to make decisions for themselves and we are there for instigating, you know, their safety on the ward, I guess. (Newly qualified staff, Site E).

There's a lot of pressure... it inhibits being in an environment in which you feel you can be open about mistakes... They (the mistakes) still get reported. (Newly qualified staff, Site E).

I would like to have more feedback. It's important because you report the incident and then nothing gets done about it... (Newly qualified staff, Site E).

R1: And you would ask for certain things that would protect the patient – as simple as a slide sheet – and it was: 'Oh we don't use those, we haven't got

time'. And there were a lot of factors contributed to it: staff shortages, where they wanted to try and rush you. (Newly qualified staff, Site B).

R3: Patient safety is about perceptions... and an absolute assurance that (a patient's) decisions will not be countermanded... it's really about patient autonomy and respect for the patient whether they're conscious or unconscious, whether they're elderly or whatever, you know, and the feeling that they're going to be treated as an individual with the right to decide for themselves. (Patient focus group, Site B).

R2: Now if they're (the ward manager) lacking in initiative and this is natural flow, all other staff will because she's not passing it on.

R1: It comes from the top and if there is a culture within a ward that is a bit rushed, it may be – because they can't always determine what the staffing ratio to patients will be – but it may be determined by numbers of staff available to give that sort of personal care on admission, to ensure that people are secure. (Patient focus group, Site B).

Lecturers can only speak in generalities and get students to come to an understanding of what is best practice... in one ward students had been given very in-depth training and in another ward it had been completely different (Patient focus group, Site B).

The interest that the students showed was very high and the questions that came up afterwards – in the session that I observed – the students were probing, they were being educated, they were learning about individuality... learning to see the individual behind the condition. (Patient focus group, Site B).

The Practice context

Focus Groups with Practice Staff

It depends on the environment as well, whether it's inpatient, outpatient or rehab. I mean there are varying degrees of risk as well, aren't there depending on the working environment as well... (Practice staff focus group, Site E).

I think they learn a lot by example, because it's what they see on the ward... they pick up their ways from different staff nurses that they see – not necessarily their mentors... I think they see ways that are safe and then they see for themselves things that they think 'I'm not sure about that' – but they do pick up from example, don't they? (Practice staff focus group, Site B).

You do actually need to have proper assessments – you know, I'm still a firm believer in making sure that someone can do the drugs properly... they've got to show some understanding of it as well as being able to do it... and for me that improves patient safety as well as communication with the patient and the family as well. (Practice staff focus group, Site B).

People do things for quickness not realising they're actually putting a patient at risk. Training – you've had the training and you choose not to use it so you will be in serious trouble. (Practice staff focus group, Site B).

Why do you feel the need to keep doing this? She said 'we've been so busy and we've been short staffed and everything'. So we sat and generally discussed how we could manage it better. (Practice staff focus group, Site E).

The Organisational context

...through a whole range of other professional forums there's opportunities for dealing with patient risk issues and patient safety issues... from my own perspective for nursing – there's things like the Matron's Forum, the Sisters in Charge Nurse Forum. (Interview with manager, Site B).

[Clinical Governance Facilitators]

Their role is to actually take out the clinical message, patient safety message to all areas of the Trust... they're using nursing staff: they have been on the wards so they understand what happens on the wards and they can understand when things go wrong. (Interview with manager, Site E)

In terms of significant incidents there would always be a root cause analysis of the issue and a review meeting involving all the participants that had been in there in a constructive way... not looking for blame – looking for ways of resolving problems and preventing them, and formal reports from that. (Interview with manager, Site B).

Sometimes [staff] perceive that an incident form is done and then it disappears into a black hole and nothing actually happens. (Interview with manager, Site E).

We induct all staff... so we've got things like: nutrition which talks about the risk assessments; blood transfusion which talks about obviously the training: we don't allow anybody to do blood transfusion unless they've done training. Infection control we have on clinical induction... and we're just about to add in aseptic technique. (Interview with manager, Site E).

Appendix 18: Physiotherapy additional data

Education as planned – the course leaders

Defining patient safety

Patient safety is to do with the protection of the public in terms of making sure that they are not subject to any abuse, mishandling, anything that could cause them harm either physically or psychologically (Interview with course leader, Site B)

Intentions of patient safety education

It's discussed as a topic in itself within professional development, health and safety and things like that as a theory, and then really whenever we discuss any of the interventions that we give it's always discussed then: the contra-indications to that treatment; how to assess patient suitability for that treatment; and then even just the basic stuff in the first year like making sure you're in the right environment; that you haven't got your watch on, your rings on; that the brakes are on on the bed; that if you have any worries that this patient might fall that you have a pair of hands near by. They have manual handling training as well in the first year, resusc training, so I think it's part and parcel really of everything that we do within the course really: so that they don't cause any harm with any of the interventions that they might choose to use. (Interview with course leader, Site D)

It [patient safety] is about... kind of breaks down to, I suppose, 3 areas. It breaks down to knowledge, skills and attitudes ... that people have the underpinning knowledge in it – and that just isn't about knowledge of the policies and the right way to do things, but – particularly from a physiotherapy point of view – the students need to tie together underlying underpinning anatomy, physiology, biomechanics.. And to put [them] into practice (Interview with course leader, Site B)

We deal a lot with the kind of physical issues of patient safety... we start the programme with a module that really looks at therapeutic handling: the moving and handling of yourself and of other people, and the assessment of the risks involved in that, and also the legislation around moving and handling. So there is a very kind of clear module that looks at one big issue in terms of patient health and safety, and that is the moving and handling issue, because that underpins everything that you do as a therapist – as a physiotherapist – in terms of therapeutic handling (Interview with course leader, Site B)

Translating intentions into practice

We place a great focus on it on the placement education part of the course. Obviously, when they're out on placement it's a huge focus of what they do, and if they fail any component of health and safety requirements then they fail the placement, so that's obviously given greater emphasis there. (Interview with course leader, Site D)

All the way through, every modality that we introduce ... the dangers to the patient are always discussed and there will always be indications of contra-indications and indications for a treatment and what the harm can be. We see that as very important and that comes through in the way that those types of skills are assessed, I guess, because in the assessment if the students can't pick up on looking at the contra-indications then it's not an automatic fail, but it's a quite damning part of the assessment. (Interview with course leader, Site B)

We are being driven by a competency based process that clearly identifies that the boxes have been ticked, that the student has had the lecture on child abuse, patient safety, you know, lifting and handling legislation where they occur. And it's a different philosophy, I think, in comparison to the one that we've had in the past in physiotherapy, which has been an integrated philosophy. (Interview with course leader, Site B)

Influences on patient safety education

Because of incidents over the last few years I guess, [the public] are no longer confident in the term professional, and all ..the moral and ethical and things that you sign up to when you become part of a profession, a healthcare profession, so we have now got to make that explicit as to what we mean by all of those terms, and how we are protecting the public in the way that we train our staff. (Interview with course leader, Site B)

The media, the government, local, people within the school? Well I think the influences are all of those really. I think the media is perhaps more of an influence for the students, the students becoming more and more aware of safety because of the media. I think they come in with more awareness and from within the faculty I would say it was all of these really. (Interview with course leader, Site D)

Education as delivered: The focus groups

Views of Patient Safety

I don't think it's necessarily about doing something wrong I think some things are not appropriate for specific patients and it's important that you're able to pick that up before you decide what it is you're going to do, but it's not necessarily that you're doing it wrong – it just might not work for them (Year 2 physiotherapy student, Site D)

I think also it's just down to staffing because they [nurses] just tend to have so little time. They have time to wash people or take them to the toilet and give them their medication, barely, but they don't have time to walk them for the sake of it, or to go through exercises or to let them get up and transfer really, really slowly when they could just hoist them into a chair and get on with somebody else. (Year 3 physiotherapy student, Site D)

It includes things like your manual handling skills and, like, hygiene in the workplace with washing your hands and things, but also what you're doing with the patient: will they be safe all the time? Do you need an extra body there or is it alright to be on your own? Could they do it themselves? (Newly qualified physiotherapy student, Site B)

There was always a subtext of: there's a culture, you need to protect yourself as well. You need to document everything yourself, you need to know what you're doing and be able to prove that what you've done is justifiable, particularly with evidence based practice. And 'I'm not just being crazy and trying stupid things: I am a safe practitioner and I can prove that I'm a safe practitioner'. (Newly qualified physiotherapy student, Site B)

Education as experienced

I think it's common sense really. Before I came in today I thought to myself - now what have I learnt specifically about patient safety and we haven't had any lectures that are on patient safety. I think it's just something that you learn. I feel that I've learnt just as I go along. It's just second nature to think about. (Year 2 physiotherapy student, Site D)

R: You focus right from the start on patient safety – your whole mind set on seeing a patient changed quite quickly after you'd be in the front, and they've torn apart what you just did...

I: You did something and they pointed out where it was unsafe?

R: Yeah, and other students would go round saying what should have been done differently. I think that for me... then you're very conscious next time of getting that stuff (Year 2 physiotherapy student, Site D)

Just moving people up and down the bed is probably the one that I saw most frequently – because when we did it at uni it was very much with the patient who would bring their knees up, they're doing all the work, there's none of this arms under their shoulders and hoick. And then you go out into practice and for whatever reason there's a lot of 'arm under the shoulders and hoick' to get them up the bed. (Newly qualified physiotherapy student, Site B)

My educator was a six foot bloke, and I was a little 18 year old, terrified... and one of the first things he said to me was: 'you'll learn more from one patient that you drop, one patient that ends up on the floor, than ten patients who walk absolutely perfectly'. And that terrified me even more! But I think it can make sense – that you learn if something does go wrong then you make sure it won't happen again. (Year 3 physiotherapy student, Site B)

It would be really helpful, finding out about their [patients'] experiences... what they thought, like: did they feel safe the whole time and sort of, what we could do to make them feel more safe. And as a student you're always minding yourself anyway so it would be nice to know if you're doing it right and similar to the way that a qualified physio would do it. (Newly qualified physiotherapy student, Site B)

Role models

For me I learn a lot from other people and seeing what people do, so equally – when I’m talking about the two different lecturers and their styles, I would say that one style was not a very successful style and equally between clinical educators I had... the clinical educator was so kind of slap dash, if you like, but she had an assistant, a mature – quite a senior – physio just under her who was about to be promoted, but she ended up off for a couple of days and I ended up with him and it was fantastic. And I just learned so much more from him, because he was so methodical and he was really precise about what he did and he really thought about everything. Whereas she came in in a scruffy tracksuit, tea spilt down her t-shirt, scruffy pair of trainers, and equally I felt like that was the way she dealt with things ... that really sticks in my head as a learning experience. (Year 2 physiotherapy student, Site B)

But I’ve been on placements where, particularly community placements where I went and bought myself hand gel because my supervisor wasn’t very fastidious about cleaning hands between patients ...which was worrying, it’s difficult, I made a point of saying I need to clean my hands, so I went and bought my own gel but I couldn’t say you’ve not cleaned your hands and you’re the supervisor (Year 3 physiotherapy student, Site D)

... it depends on your educator, it depends on the team and, yeah, I mean, some of them I probably would feel quite comfortable to say: ‘why don’t you try it like this because I’ve learnt it this way?’ or ‘what do you think about it?’ but other places I’d probably just get on and do whatever they said, you know. (Year 3 physiotherapy student, Site B)

Competence and risk

Academic observation Site B Physiotherapy 2: Introduction to electrotherapy (TENS)

“you should not operate machinery with TENS on – or go into the bath with it on!”

This was a mainly practical session which was held in a large clinical skills room with several couches and pieces of equipment such as skeletons. Nine students (4 female, 5 male) participated in the session. During the first hour the lecturer gave a talk on the topic of TENS, asking questions and answering the generally quite vocal students. A handout was given and the session was described as bringing in some of the theory but mainly orientated towards practice. Issues covered included current uses of TENS, how it works, different parts of the machines, potential risks from accidental movement of controls, the batteries and the need to clean electrodes, levels and intensities, monitoring of use, and assessments. It was stressed that there are different types of machines and it was the students’ responsibility to find out how to operate the machine when in practice.

A presentation was used to describe and expand on the underpinning skills, physiological and therapeutic effects, evidence, dangers, cautions, and contraindications. The lecturer then used one student to demonstrate the application of a TENS machine. In pairs the students were given machines to apply to each other

and then sent off for a coffee break with the machine in situ to experience the feeling of using a TENS. The students were warned not to 'play' with the controls or apply the electrodes to other parts of their bodies "there are body areas that you would be sensible enough not to put TENS on even as an experiment".

The last few minutes of the session were used to talk about different settings and muscle contractions. The lecturer referred to the exam the next day several times throughout the session and shortened the session so that the students could leave early to get on with revision. Although some of the content was related to staff safety there were many overt messages about patient safety.

Things like rings and watches which you could include in clearing the area but watches and rings can catch on skin plus they have germs and stuff in them. That was quite drilled into us at the start that was something... Yeah that was something that the lecturers all said. It becomes second nature (Year 2 physiotherapy student, Site D)

One of the main things to say is that we have, when we do our assessments and our practical things like (...) keeping the patients safe but you don't actually learn it until you're out on placement, until you're in that setting. It's fair enough getting, you know, like, the second year, students acting as models... it's easy keeping them safe on the bed cause they'll do what you say in an exam situation! But then once you get in practice it's a whole different ball game. (Year 3 physiotherapy student, Site B)

You sort of have to make a judgement call on whether a caution is important enough and I think at our stage of training you just need experience to be able to do that well, I think. (Year 3 physiotherapy student, Site D)

The placement I've just been on you just write in the notes, and even in your assessment it's just really brief: you quickly write in the notes – you don't do any risk assessment, you don't have any other forms you fill in: there's no special Physiotherapy assessment forms, even for stroke patients, whereas on previous placements it's been, like, really strict stroke assessment form or risk assessment forms. (Year 3 physiotherapy student, Site D)

If you're, say, in the first year or second year you might see your patients with an educator, but on this one I was told: will you risk assess as you go – because you're third years now. We have the responsibility, we know a bit more so we can kind of risk assess for ourselves, take a bit more responsibility there. (Year 3 physiotherapy student, Site B)

There's an interprofessional module we're doing at the minute that's based on patient safety... and now we're actually being asked to delve a little bit deeper into what patient safety is. I think up until now we haven't thought about it. We've had to do it but we haven't had to reflect on it, to think about how you do it, kind of thing. We've just done it! (Year 3 physiotherapy student, Site B)

Evidence based practice

I was chatting to one of my educators who uses... she works partly in private and she uses ultrasound a lot, and she was, like: I turn out about four times the amount you get told at uni, and that's because it's all these Aussie papers: everybody in Australia whacks it up really, really high as well. But on some things they err on the side of caution and would be back really low. (Newly qualified staff, Site B)

So when somebody sits down and they slightly miss the chair, you'd guide their hips into the chair – then you shouldn't really do that, but it's better to do that than fall on the floor, and then have an accident and have to fill in the incident form. And although technically it's not correct, it's safer for the patients to do that than it is to let them hit the floor, really. (Newly qualified staff, Site D)

Themes and topics: Manual Handling

When you're at uni and you're practising something for half an hour and you're maybe just doing it a little bit that's different from when you're actually working and you might be adopting that same position ten, twenty, thirty times a day, whereas then you're going to start to realise: oh, well if I don't actually make sure I'm in the correct place – and this is just an example – then maybe I'm going to do myself damage as well. And causing the patient damage is the result as well – if you put too much stress on yourself then... (Year 2 physiotherapy student, Site B)

Themes and topics: Infection Control

DAHP 1 Infection control

“Do the safe thing all the time”

An infection control nurse “with national status”, from the local Trust, gave a 2 hour power point lecture to over a hundred Year 1 students from physiotherapy, occupational therapy and speech and language departments. Most of the lecture was information giving including science, history, statistics, causes, standard precautions, symptoms, treatments, local and national policies. It was broken up half way through with a small group exercise designing posture support for a patient, emphasising the infection control elements, such as ease of cleaning. The lecture was stated to be an introduction and a brief overview of the topic and as such several references were given for students to follow up later, including the accredited NHS e-learning programme on infection control. Overall the lecture appeared to the observer to be more applicable to nurses than to AHP professionals – many of the examples were from nursing, including the lecturer's own experience.

The students appeared quite interested in the topic, although some chatted at times and some took a refreshment break during the group work. At the end of the lecture students were invited to attend a practical session and 15 did so, although only a small number said that they had done this before. The students were shown how to clean their hands; washed their hands with gel and then soap and then observed them under ultra violet light. This was a light-hearted few minutes but seemed to make the point that hands need to be washed very carefully to remove all bacteria.

It was a very good session having the combination of information in sort of a lecture and the practical afterwards (Year 2 physiotherapy student, Site D)

But my educator in my last placement told me that as far as infection control was she felt that I was perhaps too keen to wash my hands and use the alcohol all the time (Year 2 physiotherapy student, Site D)

My supervisor on that placement was somebody different who you know we'd walk onto the wards together and I'd do the alcohol gel and she'd look at me and go – you're getting me into such a good habit. (Year 2 physiotherapy student, Site D)

... in the university, I would say no. On placement there's been patients that have got C-dif or something else in a side ward, so the clinical educator has been very hot on saying: this is how we manage infection control: those are where the aprons are, those are where the gloves are, those are... but nothing at the university. (Year 2 physiotherapy student, Site B)

And when you go out on placement obviously then you are washing your hands after every patient, washing your stethoscope or whatever, um, wearing apron and gloves if that's what the door (notice) says, um, so it's all reinforced and we have placements all the way through uni so. (Newly qualified staff, Site D)

Themes and topics: Communication

*And communication's covered also in a huge...
...specific module isn't there on interprofessional communication. (Year 2 physiotherapy student, Site B)*

I remember in some of the practical sessions that we did we were advised to always get down to the patient's level, make sure they can hear you, that they're looking at you when you speak to them and all of those sorts of tips for communication. (Newly qualified staff, Site D)

Themes and topics: Drugs

*What about drug handling and anything to do with drugs?
...I think it is made very clear that you need to know what drugs they're on and if you don't know what they are you need to have a little drugs booklet to know exactly. (Year 2 physiotherapy student, Site B)*

Variation in experience

I think within that tutor's group it was very much: health and safety was... you were reminded about it every time, whereas with the other one it was like: well, we've got to practise this kind of manoeuvre, let's just come and practice this manoeuvre. But with the other person it was very much, you know, this is what you need to think about, this is what you're doing, and that's kind of the impression we got. (Year 2 physiotherapy student, Site B)

I think most people thought the balance wasn't right on the placements that we did because some people would be very highly tuned in one area but have hardly any experience in another. (...) And it didn't really work very well to give everybody an even spread of every part of physio. (Newly qualified staff, Site B)

Yeah but that's what's really strange – it's not even... like one hospital will be: you must do this and it's absolutely vital, and the next one absolutely... they don't even know what it is... across the whole of the NHS it's complete inconsistency. (Year 3 physiotherapy student, Site D)

OK there's your ward go and do it: there's another physio on site – at least 5 minutes away in another building, but at least on site – but that's exactly where your supervisor is: another patient safety issue. (Year 3 physiotherapy student, Site D)

Interprofessional learning and working

I think the concept of it [learning about working together] is very important but the implementation of it, especially this year, is a bit boring. (Year 2 physiotherapy student, Site D)

We all started to get a bit sick of that, didn't we? – interprofessional working. It's a bit like the blind leading the blind because everybody would ask: 'what's your role in this as a physio?' 'Um, well, I haven't really developed as a physio yet so I don't really know. What's your role as a nurse?' 'Well I'm still learning as a nurse, so I don't really know!' (Newly qualified staff, Site B)

Physios and OTs we're pretty much... the way we train we are used to working together, but especially doctors and pharmacists don't: it doesn't seem to be part of their training in any way. Quite often they don't really have a clue. Yeah, so that's quite hard in the IPL groups to kind of get them to take it seriously. (Year 2 physiotherapy student, Site D)

When I was working on (...) one ward all of the time and I got on very well with all of the nurses, the physios, social workers everybody and the communication between all of us was good really and we had meetings every morning... (Newly qualified staff, Site D)

Good, bad or indifferent learning?

This particular group was very frail – very poorly really, and you know, they may not have been out of bed for a while, sort of thing, so if you're getting them up for the first time that's a huge responsibility in terms of thinking about you keeping them safe, really. (Year 2 physiotherapy student, Site B)

Because after placement we'll all go for a big night out and then we'll be like 'so how was placement?' And you'll go 'oh, there was this nightmare!' and you'll

talk about it then but it's never brought into uni... when we do different placements we pick up on certain things from talking to them. You might hear of things you've never come across before... (Year 3 physiotherapy student, Site B)

I know a nurse gets taught manual handling at a different level to what we get taught. But at the same time we were all moving the same patient so surely we should all have the same thing and if that's the case, to me that's more important as an interprofessional thing. (Year 3 physiotherapy student, Site B)

Unemployment and patient safety?

It's a two day course and it was £180 and you think... I've gone on another one since and I'm hoping to go on another one... There's another one on assessment and treatment of MS... You do have to pay for them, R2's right, and I am having to travel quite far for them, so I wouldn't get paid for that. But it's just a good way to keep myself updated and it's sort of another thing – like continual professional development – making sure that I'm safe, that I'm still updated on my skills ... for patients, I think. (Newly qualified staff, Site B)

Physiotherapy practice context

Focus groups: The clinicians' view

Learning patient safety: Classroom or practice?

I think it comes together better, actually, when they're in the clinical environment – so it seems a bit more obvious... hopefully becomes more obvious anyway, because it's there in front of you. I think it's probably quite difficult to replicate that sort of way of learning in the university. Anyway, because drains and things like that it's a lot easier when you can see it: it's more obvious. (Practice focus group, Site D)

I'm sure you can learn things in a university environment, I would have thought, in a fairly black and white way: so you learn that if oxygen saturation levels go below x percent that's bad. And then you go out into the clinical environment and you've got an experienced clinician saying: yes, but in this situation it's not black and white we're going to say this percent. And that can only be learnt with the clinician in front of you. (Practice focus group, Site B)

Learning patient safety: the components

A huge part of our assessment is around observation – and not just of the individual, but of everything around them. (Practice focus group, Site D)

A student is helping a patient to walk with a frame when the physio notices that the patient is just wearing socks instead of slippers. He says it is not a major problem as he is supported by the frame but he could slip so he walks around with them and asks the student about it later. (Observation, Site D)

- I We had one small example of learning from a mistake when I was with you (R3) and a student let a patient walk with a frame with just his socks on.*
- R3 Yeeees well I was walking quite close behind.*
- I But I bet the student will remember that.*
- R3 Well she wouldn't forget.*
- R3 They were perfectly safe; well not perfectly safe. The thing is they were OK.*
- R2 There's no such thing.*
- R3 Acceptable risk. I did pull her to one side and say would you have done anything differently? About what? Well just have a look again.*
- R1 Observation classic. (Practice focus group, Site D)*

It's part of physiotherapy to take a risk. In rehabilitation you do take a risk – it can't be wrapped in cotton wool. We send people home, essentially, to fall – because they are high risk fallers, but they want to go home and that's their right. And you can advise about the risks and the likelihood of falls and where they're gonna happen, but at the end of the day it's the patient who makes the decision. (Practice focus group, Site D)

Assessing safe practice

Part of being a physiotherapist is knowing what your own limitations are, so that you don't go and do something really silly. And I think that's something that we instill definitely in our students – and with our juniors as well – that if they're not sure they need to ask. And I think it's much easier to make somebody who's less confident, competent than it is to rein somebody back who's over confident. (Practice focus group, Site B)

Observation in practice

Moving and handling

Go to see patient – student (m) explains anatomy of disks and assesses movement. Gets patient to sit upright on edge of bed. Student (m) talks a lot: reasoning, encouraging and re-explaining spinal alignment and anatomy of disks. Asks repeatedly about pain and whether in pain or apprehension. Gets patient to stand and lean back, then to walk out of the room and down the corridor (gets me to carry a chair behind them). Lady gets back and sat in chair in room.

(Physiotherapy Observation, Site B)

Infection control

Everyone was very twitched early in the morning about infection control inspectors – students were repeatedly told by senior physio and other physios to use the gel, stay behind curtains and be careful as the inspectors were asking junior staff questions! (Suspect some may think I'm an inspector!!)

(Physiotherapy Observation, Site B)

Communication

Student gets patient to stand pushing up on the bed and then walks to the end of the bay, encouraging the patient (but no precise instructions re how to use the frame)

(Physiotherapy Observation, Site B)

Go to patient 3 (f) who is sitting; nurse taking obs – student (m) asks nurse how she (patient) is. Nurse says she has just walked to the treatment room – a bit wobbly.

(Physiotherapy Observation, Site B)

Learning in practice

As students you can ask even silly things and it is always better to ask rather than go with a small bit of knowledge, as you may put patients at risk and if you do not ask you do not fill your learning/knowledge gaps.

(Physiotherapy Observation, Site B)

Discuss 'wobbly man'. Senior physio: challenge his balance – put in front of mirror – tell him he is falling/drifted and which way. Senior physio prompts and questions student re which systems need to be investigated, and the anatomy and physiology of balance problems in this chap and his diagnosis. Senior physio 'raps his knuckles' re not knowing this as it is in the learning pack.

(Physiotherapy Observation, Site B)

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