The Professional Socialisation of Medical Students through the Preclinical to Clinical Transition

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Abstract

This thesis explores the professional socialisation of medical students through the preclinical to clinical transition of medical education. The research is based in a traditionally structured medical programme. Early clinical experiences are provided for students during their early years of teaching. Twenty-one students were interviewed in their third year and fourth year, before and after their shift into the clinical environment, and participant observation was also undertaken.

The findings of this study are that in medical students' preclinical years human dissection teaches students to manage their emotions, and that students are separating from the lay world. Early clinical experiences in the preclinical years appear fragmented compared to the medical practice of doctors but, introduce students to aspects of medical work, patients and the patient case history.

As students shift into their first full-time clinical year, they shape earlier knowledge to make it meaningful to its new context. Medical students 'medicalise' patients through the patient case history, but they also 'personalise' diseases as they associate patients with diseases. By learning in the clinical environment and being associated with medical teams, students observe and undertake parts of medical work, in an apprentice-style way. Finally, while students learn medical language and the patient case history, their experiences with patients requires them to be with patients in a way that is beyond the disease-based approach of medicine.

This thesis concludes that while the biomedical science shapes students' early medical education, it is in the clinical environment that students learn to be doctors. This includes the biomedical-based practice of the patient case history, and physical examination, as well as how to be with patients when what is required from the student is not to 'do' but to 'be with' the patient.

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Introduction

Introduction

To be a medical student becoming a doctor is to learn

> …how the world of medicine gets built up as a distinctive world of experience, a world filled with objects that simply are not part of our everyday world. Learning medicine is developing knowledge of this distinctive lifeworld and requires an entry into a distinctive reality system (Good, 1994, p. 71).

In this thesis I explore and develop the concept of professional socialisation with respect to medical students, and examine the experiences and challenges they face as they enter the clinical environment. Professional socialisation can be considered to be the

> acquisition of a set of attitudes pertinent to the profession, and the aim of professional training is to achieve not only necessary knowledge and skills but to indoctrinate with the appropriate values and attitudes. The development of professional identity is also a crucial aspect of becoming professional and trainees need to 'think, act and feel' as members of that profession (Cavenagh, Dewberry & Jones, 2000, p. 897).

The socialisation of medical students into the medical profession is more than the acquisition of a body of knowledge, attitudes and skills, proven through the passing of examinations. Medical students must learn how to be a doctor, that is, the 'craft' of medicine, which goes beyond the application of medical knowledge (Conrad, 1988). In this thesis I focus on this shift from the preclinical years to the clinical years of medical student education. The new experiences of medical students with patients in the hospital and general practice settings are distinct from any they might have had prior to entering medical school. Students are given privileged access to patients and this enables students to shift their perception of patients and disease, from lay observer to doctor. Medical students walk with qualified doctors and speak doctors' language.

This thesis makes significant contributions to the field of medical education. The primary contribution is through exposition of the transition between the preclinical and clinical

years of medical education for medical students. The introduction of early clinical experiences for preclinical students has not been examined in the literature. How these early clinical experiences contribute to medical students' professional socialisation through the preclinical to clinical transition is analysed.

By researching students' experiences through these stages of their medical education, the place and significance of clinical experience is considered in relation to apprentice-style learning which has not been done before. There are only limited references to apprenticeship learning in the medical education literature (Bleakley, 2002; Howe, Campion, Searle & Smith, 2004). I set the place of apprenticeship learning in students' approaches to the technical aspects of medical work, as well as the interpersonal and emotional experiences students have, as they enter the clinical environment. Through this endeavour I will demystify the preclinical to clinical transition, examining the challenges students face as they become part of the medical team and interact with patients.

I will show that while students are expected to learn the science of the human body and the diagnosis of disease, their learning goes much further than the curriculum documents specify. I demonstrate that the shift into the clinical years is problematic for some students as students must address interpersonal and emotional issues with patients. These interpersonal issues take students beyond the science-loaded curriculum with the focus on learning the patient history and physical examination, to more doctor-like work. The division between the formal curriculum and informal curriculum has presented problems to previous researchers, because there is a gap between what students are taught and what they learn (Hafferty, 1998). The current study builds on this finding by demonstrating that most of what a student learns in the clinical setting is not prescribed in the learning outcomes of curriculum documents, but is learnt informally in the presence of other students, doctors and patients. This thesis places prominence on the informal curriculum in the professional socialisation of medical students.

I assert that the transition from preclinical medical to clinical medical education extends students beyond the science of the biomedical model, which dominates in the preclinical years and forms the basis of the formal curriculum in the clinical years. The biomedical model is central to medical practice and 'assumes that diseases are universal biological or psychophysiological entities, resulting from somatic lesions or dysfunctions' (Good, 1994,

p. 24). These entities result in physiological abnormalities that are experienced, and can be measured and communicated to others. Medicine's function is the diagnosis and treatment of the diseases manifest in patients' symptoms. The biological science of the human body and diseases are the core of the medical curriculum which dominates students' time in class and study out of the classroom. However, medical students, like more experienced doctors, face patients who challenge them to work beyond the constraints of the disease-diagnosis-treatment triad. These patients and certain events require students to 'be with' patients, without reference to treatment and cure.

The specific focus of this research is to scrutinise in detail, one transitional period in medical students' education, and this allows the sole researcher to contribute to the literature. The advantage of this approach is that an in-depth consideration of a specific part of medical education is possible. Qualitative research is utilised in this thesis. I have undertaken student interviews, field work, and studied documents given to students by staff during teaching. Twenty-one students were interviewed in their third year, and twenty of the same students were interviewed again in their fourth year at medical school. The participants were diverse, coming from Maori, Pakeha (European or Caucasian), Indo-Asian ethnic groups and varying in age from early twenties to early thirties. Some participants had entered medical school directly from school and others had previous tertiary education and work experience.

Students' personal experience of their education and learning are presented through their own words. Pseudonyms are used to provide anonymity to the participants. It is through the students' voices that the significance of early clinical experiences and elements of the transition into the clinical environment are teased out. By focussing the research in such a way, I provide an updated perspective on medical education and elucidate the diversity of issues that medical students face when walking into hospital wards and into general practices. This will challenge the picture of homogeneity of doctors and medical student professional socialisation presented by Becker, Geer, Hughes and Strauss (1961), Fox (1989) and Merton, Reader and Kendall (1957). In this thesis, I will show that viewing medical students and their clinical experience as homogeneous, dilutes the understanding of the rich experience medical students' have through their training and education (Baszanger, 1985).

Renée Fox, a noted medical sociologist, claims there has been little recent research into medical student professional socialisation since the 1950s (Fox, 1989). However, there have been several studies but these are outside of the United States of America. There have been changes in medical education since the earlier landmark studies were conducted in the United States of America (Becker et al., 1961; Coombs, 1978; Merton et al., 1957). Two contributions from the United Kingdom have more recently been made (Atkinson, 1981; Sinclair, 1997). Sinclair's (1997) belief that medical education is essentially unchanged over the last 150 years does not take into account major cultural and social changes around the practice of medicine (Fox, 1989). These include: changes from class-based learning to small group problem-based learning in some medical schools; the introduction of a core curriculum with added special study modules which students select from; and the introduction of courses in communication, ethics, privacy and informed consent in medical practice. While these and earlier studies form the backbone of medical socialisation literature, there is an absence of focus on the clinical years of medical education, including the student-patient interaction (Atkinson, 1981). The current study focuses on medical students' first clinical experiences, which include students' relationships with patients and the role of patients in medical students learning.

At the University of Auckland, medical education is a six-year programme that places preclinical sciences in the first three years, and the clinical training in the second three years. In the preclinical years, the biology and science of the human body dominate the curriculum. Of the sciences currently taught to medical students, anatomy is historically one of the earliest formalised components of the medical curriculum (McLachlan & Patten, 2006). Anatomy teaching through cadaveric dissection is undertaken at the University of Auckland and a common site of research internationally, because it represents a rite of passage into medicine. In medical education, there is literature debating human dissection as a method for learning human anatomy. While learning anatomy is part of the scientific learning in the preclinical years, it also involves students starting to develop certain doctor-like personal skills and these are explored in this thesis, and in relation to the literature.

At the University of Auckland medical school, there have been curriculum changes which include: the introduction of medical humanities teaching (see Grant, 2002, and Grant, Jackson & Suk, 2002 for a discussion on this); and in the preclinical years the introduction of patients presented to the class by doctors; the introduction of clinical skills teaching; and

the teaching of the patient history and physical examination. These early clinical experiences are offered when students are sequestered away from the patient, and the work environment of hospitals and general practices. The early clinical experiences are infrequent compared to the didactic teaching of human sciences. The medical humanities teaching is accorded less relative teaching time and academic value than other science-based teaching of the preclinical years (University of Auckland, 2003).

In the preclinical years, the fragments of clinical teaching are amongst the preclinical sciences. Alford and Currie (2004) question how authentic early clinical experiences are, because these experiences are often fragmented and intermittent when they are based in the preclinical years. I will show what these experiences contribute to students' transition into the clinical environment, through students undertaking aspects of medical practice. In the clinical years students are clearly directed to the learning of diseases and the underlying pathology of disease and the medical case history. However, medical students are learning to be doctors alongside doctors, other health professionals and patients. Beyond structured teaching, students are being socialised into the medical profession, and learning the application of the biomedical model in the clinical environment.

Early medical student professional socialisation studies fleetingly referred to apprenticeship learning of medical students (Becker et al., 1961). There has been a resurgence of this concept, with medical students' learning in the clinical environment being increasingly framed as apprentice-style learning but without further analysis (Moss, Cochrane & Yudkin, 1987; Spencer et al., 2000). This style of learning often goes unrecognised, because it is ubiquitous and ongoing in nature (Lave, 1996a). This may account for the lack of literature on apprentice-style learning, particularly in the medical education literature. Concerns have been raised with respect to the risks of apprentice-style learning in medicine, and in particular, the lack of control upon what students learn, by teachers (Howe et al., 2004). While Snadden (2006) claims that the understanding of apprenticeship learning is changing generally, there has been no analysis in the medical education literature of what apprentice-style learning in undergraduate medical education looks like.

This thesis uses Lave and Wenger's model of apprentice-style learning, legitimate peripheral participation, with respect to the early clinical experiences of medical students and professional socialisation (Lave & Wenger, 1991). In legitimate peripheral learning,

the emphasis is on what students learn as opposed to what they are taught. Learning and knowledge is perceived as not only individual (studying at a desk) but also social, because it takes place in a learning environment and involves different people in varying roles. In medicine and medical practice, knowledge is distributed across many people or teams, and medical practice cannot occur without many people being involved, hence it is a social activity (Eraut, 2000). In legitimate peripheral participation, students or novices do not need to learn the work of their profession in an orderly fashion instead they learn it as opportunities arise within the work environment. The work environment makes the learning meaningful to the student because this is the place where they will use what they have learnt. Legitimate peripheral learning has only recently been suggested as a model of apprentice-style learning that can be used to view specialist medical training because this is another example of work-place learning in medicine (Swanwick, 2005).

Shuval (1975) has suggested in her work on medical student professional socialisation, that transitional periods are important in medical student education.

> They refer to changes in status that are discrete and bounded in duration although their consequences may be long-term' (George, 1993).

In medicine, the shift into the clinical environment may have long-term consequences for the student as they learn the nature of medical work, and progress toward becoming doctors. Research relating to transitions has previously focussed on transitions through the life course. This includes perspectives on transitions into adulthood, defined by the person leaving school, their first full-time job, and marriage (Hogan & Astone, 1986). Other transitions through life have included the death of a child, death of a parent, and death of a spouse (George, 1993).

There are three major transitions in undergraduate medical training: selection and entry into a medical programme; clinical placements or experience; and the graduate's first job after medical school (Bligh, 2002; Cant & Higgs, 1999). Other points of importance in training include entering the anatomy laboratory and undertaking dissection, and performing invasive or painful procedures on people. Stephenson et al. (2001) propose that medical students are most vulnerable during the transitional stages of medical education, like initiates during a rite of passage (Van Gennep, 1906). The shift into the clinical environment is stressful or challenging for medical students (Alford & Currie, 2004;

Radcliffe & Lester, 2003). Students are faced with real patients, and must adapt to the hospital environment as opposed to the classroom environment. The current study spans this time in students' training, taking into account the early clinical experiences that contribute to the professional socialisation of medical students. This particular transition from classroom to the clinical environment has been described as a 'critical feature' in medical education (Koens, Mann, Custers, & Ten Cate, 2005).

Medical Education

In medical education there is a tension between the objective and abstract scientific knowledge that underlies medical practice, and the warm human people that are at the centre of medical practice. Doctors must be technically competent as well as being able to respond sensitively, and with understanding, to patients' emotional needs (Grant, 2002). In medical education, this tension is manifest in the formal curriculum which teaches the objective sciences, and the humanitarian-oriented professional development courses. Doran (1983) argues strongly for a humanistic approach in medical education. This is despite medical students being taught disease-based medicine.

> Physicians are trained to think largely in terms of the disease model, where regardless of the nature of the patient's presenting problem, we generally attempt to fit them into a disease which we can classify (Doran, 1983, p. 1832).

Because medical education is part of professional socialisation, this tension also underlies professional socialisation of medical students. While doctors are working with people and should work with dignity and respect, they are expected to learn and apply a vast body of scientific knowledge.

The University of Auckland Medical Programme

The University of Auckland is one of two universities in New Zealand that educate doctors. The medical school was established in 1968, and has had a yearly intake since its inception. As of 2000, the Faculty has also taught undergraduate nursing, pharmacy, and non-clinical biomedical programmes. The curriculum at the University of Auckland medical school is a six-year undergraduate programme that follows a traditional structure of three preclinical years, and three clinically focussed years. The preclinical-clinical split in the curriculum is common internationally (Atkinson, 1981; Fox, 1957).

The preclinical years prepare students for clinical work prior to their entry into the clinical environment (Prince, Boshuizen, Van der Vleuten & Scherpbier, 2005). After a year of basic sciences (Biology, Physics, and Chemistry), the following two years focus on human biology sciences. The biological sciences have traditionally been organised into Anatomy, Biochemistry, Physiology, Pharmacology, and Pathology courses. In the late 1990s, the medical school restructured the curriculum from the traditional subjects to courses based on body organ systems such as Cardiovascular, Respiratory, Gastrointestinal, and Genitourinary courses. A complete list of courses taken by medical students during their education is presented in Appendix A.

While the University of Auckland medical school has retained the traditional curriculum structure, early clinical experiences have been introduced by staff into the students' preclinical years. Whatever the curriculum structure adopted by medical schools, the scientific basis of medicine has continued to take precedence and this is visible through the disease-oriented, biomedical model. In the biomedical model there is an assumption of a cause and effect relationship between the 'somatic lesions', and disease and patients' experience of illness. Disease is believed to be the result of identifiable causes, such as bacteria, viruses, genetic mistakes or accidents. Medical students learn this in the preclinical years through the science of the human body anatomy, physiology, pathology, and molecular medicine, which includes infectious diseases, genetics, and immunology. In this model, illnesses are identified and objectively classified by experts (doctors), who diagnose illnesses through understanding the symptoms patients present with. In the clinical years of medical school when the student and patient come face-to-face, students learn the identification of diseases through listening to patient symptoms, undertaking physical examinations, and investigations.

In the biomedical model, there is a premise that diseases can be treated and cured (Senior & Viveash, 1998). This is not true for all conditions and diseases, for example cancer and multiple sclerosis. There is an assumption of a simple linear relationship between sickness and disease, and an assumption of cause and effect between disease and symptoms; diseases cause sickness and sick people must have identifiable disease. Despite the place of the biomedical model in medicine, doctors work outside or beyond it, providing assistance and care to patients with undiagnosed problems and terminal conditions. However, the

emphasis in medical education is upon the learning of diseases to be able to use these diagnoses to determine medical care.

Neither the social construction of illness and disease as culturally-bound (Good, 1994), nor the patients' experiences of illness within socially and culturally relevant contexts, are acknowledged within the biomedical model (Mishler, 1981). The simple approach of the biomedical model cannot deal with all possibilities of patients' experience and non-experience (Armstrong, 1987). People experience feelings or 'symptoms' that cannot be explained medically or diagnosed under the biomedical model (Werner & Malterud, 2003). However, there is no space for unexplained sensations and symptoms within this model, and this is a problem for both the patient and the doctor. Furthermore, the biomedical model limits the doctor's role to that of being a scientist responsible for categorising and diagnosing disease, and providing treatment to the patient. The doctor-patient relationship is absent from the model, objectifying the experience of illness and reducing it to a disease-based bodily process.

A more holistic approach to patient care than the disease-based biomedical model has been proposed, and is termed the biopsychosocial model (Engel, 1977). It is occasionally referred to in medical training. While biologically-oriented medicine reduces illness to the 'lesion', that 'skin-encapsulated malfunction in the workings of the body, diagnosed, and diagnosable by medicine…' (Armstrong, 1987, p. 1214), the biopsychosocial model takes into account the 'patient as well as the illness' (Engel, 1977, p. 133). In taking this approach, the doctor acknowledges the importance of psychosocial variables influencing peoples' experience of illness, disease, susceptibility to disease, and the doctor-patient relationship which influences diagnosis and treatment of patients (Borrell-Carrió, Suchman & Epstein, 2004). The doctor approaches the patient with an 'empathic curiosity' and not simply with a 'mechanical application of protocol' (Borrell-Carrió et al., 2004, p. 576). Critics of the biopsychosocial model claim that the basic assumptions around disease and illness are not substantially challenged in the biopsychosocial model. The biomedical model remains central within the biopsychosocial model and therefore in medicine, with the psychological and social domains appended (Armstrong, 1987).

The biomedical model is central to medical training, but is rarely directly referred to during teaching at the University of Auckland medical school. The biopsychosocial model is

referred to at medical school, particularly through communication skills teaching, but takes a second place to the biomedical model. The biopsychosocial model appears as an addendum to the curriculum, particularly in the preclinical years. The science- and disease-based approach to disease and illness, as well as the volume of learning required in these areas during medical school, reinforces the strength of the biomedical model in medical education. Student timetables are dominated by hours of science subjects, lecturing, and laboratories.

The scientific grounding of the biomedical model is quite explicit in the preclinical years with students being taught the science and human biology of the body. However, in the shift to the clinical years, the biomedical model is acted out in a different way. In clinical years, the biomedical model is made visible through the patient history and examination, for which the doctor or medical student must strictly follow a long-established approach to the patient.

At the University of Auckland medical school, early clinical experiences have been introduced into the preclinical years. This includes the weekly presentation of patients in the classroom by teachers in the students' second and third years, which has been part of the curriculum for many years. In these sessions, there is a distance between the patient and the student, with the student sitting in the amphitheatre-style lecture theatre, and the patient being at the front of the class. Science and the scientific approach dominate through disease-based medical education resulting in a diminution of the importance of the patient. These patients tell the story of their illness, and signs of their illness are shown to students by the doctors. In 2001, a Clinical Skills course was introduced into the curriculum, having been introduced earlier in some medical schools internationally (Bligh, 1995; Bradley & Bligh, 1999; Wilson & Jennet, 1997). This part of the programme involves students attending teaching sessions in small groups, to learn elementary aspects of history taking, physical examination and procedural skills.

The Clinical Environment

The aim of research in medical education is to improve the education of medical students toward becoming good doctors. Considering the difficulty in defining what a good doctor is (Hurwitz & Vass, 2002), it is not surprising there is no single approach to medical

education. However, it is important to understand medical students' early experiences in the clinical environment because this shift toward becoming a doctor is common across all medical training and has been shown to be stressful (Radcliffe & Lester, 2003). The clinical environment is the future work environment of the medical student, and is the context of their clinical learning.

The New Zealand health system is dominated by the tax-payer-funded public health system and medical students train within this system. Students spend most of their clinical time in public hospitals, and a lesser amount of time in community-based general practice. Students are allocated to different specialty teams in hospitals, and to a lesser extent to general practices. In the hospitals each specialty has a number of teams who are rostered in succession to admit patients referred to the speciality. Each team consists of one or two consultants, one or two registrars, one or two house surgeons, and occasionally a trainee intern.

In general practice, general practitioners may work in practices with other general practitioners but the student is the responsibility of one doctor. There is a one-to-one relationship between the student and the general practitioner who will oversee patients that the student sees.

Terminology

This thesis uses medical education language and terminology that needs to be clarified. 'Medicine' is in itself an ambiguous term. It denotes the medical profession as a whole but within Medicine are areas of specialisation, such as paediatrics, surgery or orthopaedics. Medicine as profession will be denoted with a capital letter and the specialty of medicine shall be presented by a lower case first letter. Like Sinclair (1997), I shall use the terms 'medical education' and 'medical training' interchangeably, acknowledging the educational and graduating/licensing function of university-based training, as well as the relationship of medical education to the New Zealand Medical Council, which grants provisional registration to medical school graduates. Medical students undertake university-based education, education which is notable for its intent to widen student perspective and understanding. This contrasts with the more immediate and practical use of 'training' and specific application of knowledge that relates to training (McManus, 1995).

The word 'clinical' in this thesis also needs to be considered. Its use in lay language differs from that in medical education, and particularly as it is used by medical students. In medical education, 'clinical' refers to the patient and represents an interaction between the doctor and the patient. (This may apply to other health professional groups as well, but I will only speak in relation to Medicine.) For medical students, gaining clinical experience represents the opportunity to be with patients, particularly in the work environment of doctors. This may involve talking to or examining patients, or observing a doctor during bedside teaching. Clinical experience contrasts with book and lecture-focussed learning that predominates in the preclinical years. The

> 'clinical' phases of training rest on the assumption that the trainee is to gain 'practical' knowledge and experience through some form of exposure to, immersion in, and some sort of 'practice' on 'real' settings (Atkinson, 1981, p. 115).

Clinical experience contrasts with textbook learning, which is distant from patients. Students specifically want clinical experience because being a doctor is about interacting with patients, and learning through clinical experience is considered more authentic than learning from a book. However, to have a clinical approach or to be considered 'clinical' in society in general, has a different meaning referring to a more distant, professional and less personal approach by a doctor. Visions are conjured of traditional white coats, large desks between the patient and the doctor, the doctor looming over the patient who speaks only when spoken to, and is made to feel insignificant. The clinical approach is seen to be objective, dispassionate and coolly detached. For medical students, clinical learning is seen as positive because it is about being with, and learning about patients. Outside of medical education, clinical is usually used negatively, and is associated with science and insensitivity.

The clinical environment refers to those places where patients see doctors and where students can see patients. It includes the community-based general practice and the hospital. The hospital clinical environment consists of the inpatient wards and the outpatient clinics that patients attend without being admitted to the hospital. This environment represents the future workplace of the medical student, and is the context where students learn to become doctors. Because of this, students' experiences and learning

in these places represent the beginning of a more intense and direct form of socialisation. It is the site, not only of patients and doctors, but all that comes with medical care: different staff – such as nurses, physiotherapists, cleaners, ward clerks et cetera; wards, clinics, laboratories, radiology suites, and support services. It is also the place of rosters, routines, systems, and unpredicted and life-threatening events.

Lastly, 'team' is used frequently in the clinically-focussed chapters in reference to the 'medical team', or what was traditionally referred to as the 'firm' (Atkinson, 1981, Bleakley, 2002). The team consists of a hierarchy of doctors at various lengths of time since graduation, and at variable stages of training, responsible for the care of a group of patients. The consultant is a specialist who has completed all his or her training, and bears responsibility for the patients on her or his team. Registrars are doctors training to be specialists in a specific specialty area. House officers (also referred to as house surgeons) provide the day-to-day care for patients, including the ordering and interpretation of blood tests, and the preparation of patient-related paper work. They are not yet committed to a specialist training programme. Intermittently, a trainee intern may be associated with the team. This is a final year student preparing to start work as a house officer. Members of the team have some unique, but also overlapping, knowledge and responsibilities. The role each member provides in patient care is necessary for the work of the team, whether it is a detailed knowledge of diseases or how to order tests.

The Thesis Structure

In this section I will present the structure of this thesis. In the following chapter, *Professional Socialisation: A Review of the Field*, I discuss the major studies of medical student professional socialisation. This includes American and British longitudinal studies that take a comprehensive view of medical education. More recent studies from the medical education literature are only briefly presented because they are fragmented, and tend to focus on specific issues of attitudes, curriculum changes, and teaching (Regehr, 2004). Lave and Wenger's (1991) construction of apprentice-style learning is discussed, and specifically, how apprenticeship learning relates in the clinical transition of medical students. I will show that although the major studies may have opened up this field of research, the preclinical to clinical transition has been neglected. The literature review serves to provide a context for, and to rationalise the significance of the current research.

The *Methodology* chapter describes the research including the use of the qualitative methods of student interviews, participant observation, and document analysis. I also address ethical issues relevant to this research and my place in the research.

Because of anatomy and human dissection's importance in the literature, medical students' experiences with human dissection are explored. *Anatomy and Human Dissection* examines students' first experiences with human dissection. Anatomy has been a point of interest because of the rite of passage connotations, and symbolic entry into medicine involved in entering a restricted area of medicine (Hafferty, 1991; Lella & Pawluch, 1988). This aspect of the preclinical curriculum is considered in some detail reflecting its importance in defining medical students as medical students. Anatomy is important as an early point of transition from 'science student' to 'medical student'. Students receive an orientation into the laboratory, and there is justification of, and emphasis upon the place of dissection in medical training, with the expectation of students to 'respect' the bodies. I will show that while students undertake human dissection, they are learning to manage their emotions privately, as they will in their clinical education. Fox (1989) observed the 'detached concern' of students as they masked their strong emotional reactions and this is presented in this study. Through cadaveric dissection, students experience a separation from the lay world. People know medical students are dissecting human bodies, and question students' experiences. This external referencing of human dissection rarely features in the literature.

In *Early Clinical Experiences*, I present the clinical-based teaching provided to students in the preclinical years. This aspect of teaching has been suggested as important in easing students' transition into the clinical environment (Prince et al., 2005). Patients are presented to the class by doctors almost weekly in class-based sessions. Students also receive early clinical skills teaching, including learning to elicit the patient case history and how to examine patients. In the Clinical Methods course at the end of the students' third year, students visit the hospital and practice eliciting the case history and physical examination of patients. In the class-based sessions students see two aspects of medical work. First, students see doctors presenting the patient demonstrating the case history which is used to frame the patients' presentation of disease. Second, students see the relationships between diseases and the biomedical science that are illustrated through patients. In this style of teaching, students relate diseases to people, and are motivated in

their learning because patients provide an embodiment of disease. In the clinical skills sessions, students begin to undertake the activity or 'doing' of doctors in a setting that is distant from the patient. Now in the clinical environment, even for only brief periods of time, students start apprentice-style learning. I will show that students medicalise patients through diseases, but diseases are also personalised through patients.

In the succeeding chapters, *Learning in the Clinical Environment, The Heterogeneity of Student Learning*, and *Being in the Clinical Environment: Relationships, risks and responsibilities,* I present medical students' experiences, and reflections upon their shift into the clinical environment. In the first of these chapters I examine the change in students' learning from preclinical to clinical learning. Students reshape their preclinical knowledge to be able to use it in the clinical environment. How the case history is learnt and written is examined, as is students' approach to performing procedures upon patients. Although students learn to medicalise patients by making the patient's story fit the structure of the case history, students also personalise diseases through the patients' individual stories. This is the student learning the formal curriculum, and the application of the biomedical model to the patient, but also learning beyond the biomedical model.

In *The Heterogeneity of Student Learning*, I examine other aspects of student learning that fall beyond the formal curriculum. An often neglected aspect of medical student learning and professional socialisation research is the different approaches to the patient case history taken by different medical specialities. This is more subtle than the differences between medicine and surgery. In particular, general practice and psychiatry are identified for their different styles of communication and approach to patients. Also included in this chapter is how students gain access to patients, and student learning of medical work. This aspect of student learning is not required of students to meet curriculum learning objectives but is necessary for students to complete their formal learning. The differences between seeing patients in third and fourth year are examined, and students' learning about the clinical environment as a community in its own right is also explored.

In *Being in the Clinical Environment: Relationships, risks and responsibilities,* the biomedical model as it is presented in the sociological and anthropology literature is seen to be insufficient in the face of medical student learning. Patients are seen as people and not just medical specimens, and students' experiences that involve tragedy and death require

not action but quiet inaction. However, it is when friends and loved ones become patients that medical students are seen to blend their professional knowledge with their personal selves. Finally in this chapter, a diagram that brings together the informal and formal learning in the clinical environment is presented and discussed.

The *Conclusion* will complete the thesis. I summarise the main findings of the thesis and present the contributions to the field of medical education research. This thesis addresses a gap in the medical education literature, and opens the field in terms of researching the other years of students' clinical learning, and the other transitions in medical education including when students start working as doctors. The practical implications of the research findings are discussed.

Chapter 2

Professional Socialisation: A review of the field

Introduction

This chapter introduces the field of medical student professional socialisation, and provides a background and context for the thesis. An overview of the literature is provided which will highlight the pertinent gaps that will be discussed in this thesis. A variety of fields of research are drawn upon – anthropology, sociology, and medical education. Landmark studies are reviewed, and even though many were written many decades ago, they do represent research that has had a major impact on the field. They are notable for their importance because they covered the full period of undergraduate medical education.

Most medical education research is based within predominantly psychology or educational psychology fields (Bleakley, 2002). Researchers strive to demonstrate that students' behaviour and attitude changes are the result of changes in teaching. These researchers seldom refer to the informal curriculum. The student is assumed to be a passive recipient of the transmitted knowledge. The scientific basis of medicine is generally assumed in medical education research. Although there are challenges that raise the prospect of a more humanistic endeavour of medicine (Charon, 2004; Doran, 1983), the disease-based, diagnosis-driven focus of the curriculum is seldom questioned, nor is consideration given to how medical students negotiate the science of medicine in their relationships with patients.

Most medical education research focuses on the medical curriculum and teaching (Regehr, 2004). This includes studies that measure changes in student attitudes after an intervention. Other areas researched and discussed in the medical education literature are: the ideal qualities of the doctor as a professional, the need for professionalism (Markakis, Beckman, Suchman & Frankel, 2000; Rezlar, 1974), and the levels and impact of stress upon medical students (Daly & Willcock, 2002; Mosley et al., 1994). Inventories and scales have been used to measure changes in students, either following an intervention, or over time. Such is the novelty of qualitative research in medicine, that in the last decade the leading medical

and medical education journals have all published articles about the place and value of qualitative research methodologies in Medicine and medical education (Atkinson & Pugsley, 2005; Bleakley, 2005; Greenhalgh & Taylor, 1997; Mays & Pope, 1995; Malterud, 2001a; Meyer, 2000; Stacy & Spencer, 2000).

In contrast, the sociology and anthropology literature on the medical profession are vast. The field includes: the sociology of the 'body' (Good, 1994; Lupton, 1994; Turner, 1987); power issues between doctor and patient, the doctor-patient interaction, and control in the medical consultation (Armstrong, 1987; Armstrong, 2002; Conrad, 1992; Måseide, 1991; Maynard, 1991; Waitzkin, 1989); case presentations and language (Anspach, 1988; Coker, 2003); and the nature of medical work (Atkinson, 1995). However, as Atkinson (1995) notes, most of this research has been limited by time and space because researchers have tended to look at only one part or area of clinical practice with limited numbers of clinicians. Atkinson challenges the perception that patients, doctors, and the clinical environment are homogenous and able to be reduced to one doctor-patient encounter common across every clinical setting (Atkinson, 1995). There is a 'pragmatic diversity' (Atkinson, 1995, p. 27) to doctors' work reflecting specialisations, and fields of medical work, which gets lost when sociologists and anthropologists seek to define the culture of medicine. He calls for studies that elucidate the diverse nature of medical practice.

This chapter develops a context for the current study, including examining what a profession is, and how the medical profession in New Zealand manages itself. The medical professional socialisation literature is discussed. Despite researchers' claims that the transition into the clinical environment is important in students' professional socialisation, it will be shown to be disregarded in the major studies. Finally, consideration is given to the meaning of apprenticeship or apprentice-style learning in medical students' clinical experiences.

Professional Socialisation, Professions and Professionalism

Professional socialisation

> 'refers to the processes by which social structure transmits to individuals the skills and attitudes compatible with the roles that they enact' (George, 1993, p. 354).

Alternatively, it is the

> process by which people acquire the values and attitudes, the interests, skills and knowledge – in short, the culture – current in the groups of which they are, or seek to become, a member (Merton, 1957, p. 41).

In this thesis, I acknowledge the educational, psychological, anthropological, sociological, and political understandings that can be considered within the concept of professional socialisation. Medical student education occurs within education and health systems, and is well-entrenched and controlled in society that reinforces medicine's own position in society. There is a culture and tradition associated with professional socialisation, but students experience their own sense of becoming a doctor based on their previous experiences, expectations, place in their own community, and personalities. In this research, professional socialisation is considered an interactive, personal and social process.

There is no unified theory of medical student socialisation into the profession of medicine. Rather, there is a 'broad domain of phenomena and theoretical problems' (Levinson, 1967, p. 253). Sociologists have utilised qualitative methodologies including interviews and participant observation, while medical education researchers have used scales, questionnaires and quantitative analyses. Conclusions regarding the socialisation of medical students are as diverse as the methods used. The current study will add to this diverse field.

While the literature regarding professions is longstanding, and often considered to start with Hughes (1958), in medicine there is a greater focus on defining professional behaviour. It is because of the nature of professions in society, that socialisation into a profession is of interest.

A profession can be described as a

> 'Special kind of occupation… it is autonomous or self directing… sustains this special status by its persuasive profession of the extraordinary trustworthiness of its members… includes ethicality and knowledgeable skill' (Freidson, 1988, p. xv).

The qualities of a profession that Freidson (1988) identifies, separate professions from occupations. A more complete list of defining features suggests that professions:

- Self-determine their own educational standards
- Undertake in-depth socialisation of students
- Practice under licence
- Have members gate-keeping membership
- Shape legislation impacting on itself
- Receive substantial income, power, prestige
- Practice in a way that is relatively free of lay control
- Enforce stronger practice norms than is required legally
- Have strong identity and affiliation
- Provide a lasting occupation (Goode, 1960).

Within the construct of a profession is an expectation of professional behaviour from the profession's members. The practice norms required by the profession usually exceed those set legally (Goode, 1960). Medical students are expected to become a member of the medical profession, and to behave like doctors. While professional socialisation is near absent in the current medical education literature, professionalism is not, receiving increasing interest (Arnold, 2002; Hilton & Slotnick, 2005; Lynch, Surdyk, & Eiser, 2004; Spencer, 2004; Van de Camp, Vernooij-Dassen, Grol & Bottema, 2006). There are calls to increase the curriculum content in the area of professionalism in medical schools (Cruess & Cruess, 1997; Rothman, 2000; Stephenson, Higgs & Sugarman, 2001). A *Charter on Medical Professionalism* has been developed in North America, on the basis that modern medical developments risk eroding values in medical practice (Sox, 2002). This sentiment of eroding professionalism is felt in New Zealand, in terms of corporatisation, and the control of medical opinion by management in public health care (Bagshaw et al., 2001).

The Medical Profession in New Zealand

Defining a profession may be difficult (Eraut, 1994) or a 'doomed', and now outdated, exercise (Atkinson, 1995). However, it does provide some concept of the autonomous position of professions in society. While law translates public expectation of the standards of practice, there is a professional body responsible for the registration or licensure of doctors in New Zealand. This is the New Zealand Medical Council (NZMC). This body, and other representative bodies (New Zealand Nursing Council, for example), have input into the laws relating to professional practice and regulation.

The education requirements for doctors to practice medicine in New Zealand are determined by two educational groups, depending on the stage of training. In undergraduate medicine, the requirements are set, and provided by university-based programmes or degrees. Audit or accreditation is undertaken by the Australian Medical Council (with New Zealand members) on behalf of the NZMC, because there are only two medical schools in New Zealand, and reciprocal review would be viewed as lacking objectivity and integrity.

Following graduation, and a minimum of two years work experience as a house officer or senior house officer, doctors then undertake further training in a single area of specialisation to become a general practitioner, surgeon, physician, paediatrician etc. This advanced training is under the supervision of professional bodies known as 'Colleges', who also undergo a similar process of accreditation as medical schools. Medical training from first year medical student to specialist is therefore a minimum of thirteen years.

Goode's (1960) criteria of a profession emphasise the self-regulation, gate-keeping and independence of professions. However, in New Zealand there is lay representation in most aspects of regulation, and legislation development with respect to medicine. There are also independently established expectations of professional performance with respect to patients that can be used to challenge unacceptable practice and behaviour (Health and Disability Commissioner, nd). Although these provide a challenge to Goode's definition, his principles dominate the profession of medicine in New Zealand. The autonomy and responsibility of doctors and other health professionals are enshrined in the Health

Practitioners Competency Assurance Act (2003), which requires each professional group to define practitioners' areas of work or 'scope of practice', and 'standards of competence'. These standards reflect the professionalism expected of doctors.

Professionalism

Current questions about the student development of professionalism come from psychological traditions. These questions include the relative influence of nature versus nurture upon medical students, whether development of a professional identity is staged or continuous, and the students' involvement in developing their professionalism (considering behavioural and cognitive theories of behaviour change) (Rees, 2005). The social life of the student, and discussion of the clinical and learning environments of medical students, remain absent from questions regarding the development of professionalism in students. This thesis acknowledges and elevates, the significance of the learning environments for medical student learning.

In some medical schools' undergraduate medical curricula, professionalism is included in the curriculum through professional and personal development curricula themes (Spencer, 2003). Swick, Szenas, Danoff, and Whitcomb (1999) found nearly 90% of respondent medical schools were teaching specific courses in professionalism in their survey. These courses include reflection/self-awareness, respect for patients, teamwork and social responsibility (Hilton & Slotnick, 2005). Altruism, humanism, integrity and self-awareness are often included as well as ethical and legal issues, communication skills, humanities, self-care (Gordon, 2003), and even professionalism itself (Spencer, 2003). All these efforts, through direct teaching, reflect the formal or explicitly taught curriculum, which is only one part of student learning. The informal or implicit curriculum with respect to professionalism is found in the older studies, and is not often referred to in the current medical education literature. There lacks a bridge between the older studies and the more recent literature, and professionalism and professional socialisation.

Stages of Professional Socialisation and the Curriculum

Professional socialisation may be considered across three related but separate stages in a professional's career. These stages are anticipatory socialisation, socialisation during

training or education (formal socialisation), and post-training or education socialisation (Cant & Higgs, 1999; Shuval & Adler, 1977). Anticipatory or pre-socialisation is the time before formal training, and can be considered as follows.

> The selected lay groups which gain admission to professional school already 'know' the nature of the profession before exposure to formal socialisation. While this lay image may be stereotyped and may include elements which differ from the image held by more mature students or by practicing professionals, it serves as the jumping off point from which socializees start (Shuval, 1980, p. 100).

Studies in anticipatory socialisation have focussed upon attributes of successful students' parents – whether they are themselves doctors or belong to another profession, academic achievements, religious affiliations, and socio-economic backgrounds of students. Attempts have been made at correlating these factors of students' backgrounds with their academic success, and inclination to work in high or lesser status areas following graduation (see Colombotos, 1988 for a review). These studies are no longer undertaken. Absent from the literature and beyond the current study is research and discussion about the impact of 'second-hand images' of medicine (Becker, et al., 1961). How do television programmes and publicised health events such as Severe Acute Respiratory Syndrome, and bird influenza affect potential medical students? Perhaps these images serve as a 'jumping off point' for students' thoughts about what a doctor is, and how they themselves, will become a doctor (Shuval, 1980).

Anticipatory socialisation stands apart from formal and post-education socialisation in that it covers a time when students are outsiders of the profession. In contrast, further socialisation is with the students as novices or insiders within the profession. Despite the collection of demographic information in various studies, little has been made of anticipatory socialisation beyond providing descriptive statistics of medical students (Fox, 1989).

Beyond the scope of this study, the final and continuing stage of professional socialisation continues after formal education is completed. While these stages are constructed by researchers, doctors do continue learning after graduation (Grant, 2000). This is independent of the specialist training that doctors undergo to complete their education, and the continuing professional education required to maintain standards of practice. It is

medical students' and doctors' continued experiences and learning that leads to the continuing development of a professional identity and socialisation into the profession. As Tessa, a participant in this study notes in reference to her medical education,

> This gives me the knowledge but I think I am going to have to be a doctor for a while before I am one (Tessa, 1).

This thesis is based within the formal education stage of the tripartite concept of professional socialisation. If professional socialisation includes the experiences medical students have before and after formal training, then those experiences had during but outside of formal training, could also be included. To do this would be to provide an account of professional socialisation of the student as a whole person, and not just an institutional learner. Even authors attempting to 'provide a more comprehensive account of basic training' (Sinclair, 1997) exclude the experiences medical students have outside of but concurrent to medical training. Broadhead (1983) considered the social life of one group of medical students who lived as part of a larger community of married medical and non-medical students. He highlighted the conflicting demands of family life and medical school life upon the student. The lack of research on the extra-curricula experiences of medical students, and their place in professional socialisation, is probably due to the complexity of research that would need to be undertaken. Like the other studies, this thesis does not explore this area.

Within medical education research and teaching, issues relating to the shaping of student values and attitudes (as fragments of professionalism), are addressed through the formal curriculum. There is little consideration of the messages students receive within the informal or hidden curriculum. Stern (1998) has shown that students acquire their values through informal student-teacher experiences in the clinical environment, as opposed to through formal teaching.

The formal curriculum is that which is explicitly taught. Formal learning is completed out of the work context, in a class for example, and tends towards generalisable and abstract knowledge. The informal curriculum or informal learning is the unstructured, per-chance, interpersonal teaching and learning that occur between student and teacher (Hafferty, 1998). It is often invisible because it is taken for granted, or people are unaware of having learned something. The informal curriculum is often attributed to general knowledge, rather

than learned knowledge (Eraut, 2004a). Informal learning is that which occurs in the learning environment and consists of everyday activities learnt through demonstration and imitation (Lave, 1996b). The hidden or non-formal curriculum is not manifest, but is implicit and usually unspoken. It is

> The set of influences that function at the level of the organisational structure and culture including, for example, implicit rules, to survive the institution such as customs, rituals and taken for granted aspects (Lempp & Seale, 2004, p. 770).

In between the formal and hidden curriculum, there is a place where learning is explicit but takes place spontaneously in response to the needs of the learner. This learning is intentional but unplanned, unlike the structured formal curriculum (Eraut, 2000). The splitting of student learning and knowledge acquisition, into deliberative and implicit learning, is also implied in this thesis. Deliberative learning equates with the formal curriculum. Implicit or tacit knowledge is more problematic because it is harder to locate and identify. Implicit knowledge correlates with informal or non-formal learning (Eraut, 2000). For a student implicit learning is

> The acquisition of knowledge independently of conscious attempts to learn and in the absence of explicit knowledge about what is learned (Reber, 1993, p. 5).

Apprenticeship models of student learning, separate the influence of the environment in formal learning and informal learning. This thesis investigates the non-formal learning and experiences of medical students entering the clinical environment. While the dichotomies of formal and informal, hidden and explicit, are exaggerations of a spectrum of learning processes and curriculum (Reber, 1993), they serve to provide a schema for considering learning and curriculum. Sinclair (1997) is critical of the focus on the hidden curriculum in the older studies. However, Hafferty (1998) is clear that there is a lack of matching or connection between the formal and hidden curriculum. This may explain researchers' interest in the hidden and informal curricula, of which less is known about.

Professional Socialisation

As Cribb and Bignold (1999) note, nearly all sociology of medical education literature refers to two classic studies, *Boys in White: Student culture in medical school* (Becker et

al., 1961), and *The Student Physician: Introductory studies in the sociology of medical education* (Merton et al., 1957). In both studies the researchers undertook participant observation and student interviews of medical students. In Merton et al. (1957), student experience was presented as relatively smooth through medical school and upon entering the medical profession. Their functionalist approach saw students being inducted into a profession with special, well-defined roles and social functions. The greater the number of patients that students saw, the more students felt they were progressing toward becoming doctors (Huntington, 1957). Professional knowledge, skills, and values were seen as being transmitted through the formal curriculum. There was an apparent continuity between training and practice, and student and professional culture (Atkinson, 1984), with only one contributor highlighting any tension for medical students through their training (Fox, 1957). Fox concluded that this tension lay in the uncertainty that students dealt with through their training. This was manifest in students not being able to know everything that they needed to know, the limitations of medicine and medical knowledge for the profession as a whole, and knowing the difference between the two.

Light (1979) extended the theme of uncertainty, suggesting that further uncertainty lay with students having to understand or interpret what it was teachers want from them. This implied there were gaps between what was taught and assessed, or what was taught and learnt, or what was taught and what students needed in the clinical environment. Light also noted the uncertainty of diagnosis, treatment, and patient response in medical practice but suggested that the theme of uncertainty sat within the knowledge that 'Uncertainty permeates social life' (Light, 1979, p. 310). Rather than certainty, Light considered the issue to be of 'control'. Students try to improve the control in their medical lives, by learning more in order to reduce the uncertainty attributable to ignorance. Equally, gaining clinical experience improved students' chances of answering doctors' questions during teaching. Light also suggested that students focus on technique in their clinical learning, as opposed to the results elicited from their physical examinations. The current study challenges the perception of students' smooth progress through their training, as well as examining what students focus on in their contacts with patients.

Atkinson has also challenged Fox's concept of uncertainty, noting it includes a mixed group of issues that actually differ from one another. Atkinson suggested that for Fox, uncertainty included

A manifestation of the Zeitgeist and a focus of social disquiet; a characteristic of medical professional culture; an inherent feature of the present state of biological and medical sciences; a cognitive trait or emotional problem of individual students and practitioners (Atkinson, 1984, p. 951).

Atkinson suggested that the individual does not experience a sense of professional uncertainty in his/her medical practice, in terms of the 'zeitgeist' and 'social disquiet' of partial medical knowledge. Where students do experience uncertainty is in their own personal lack of medical knowledge, which they reduce by focussing their learning.

Medical students are *not* occupied with radical doubts and plagued by uncertainty. Rather, they set about the pragmatic accumulation and construction of a stock of knowledge (Atkinson, 1984, p. 952).

Increasing medical knowledge minimises student uncertainty but raises its own issues. The science medical students learn leads to a simplified and unproblematic view of science, and medical knowledge. The unquestioned philosophy and assumptions of science in the medical curriculum underlies the hidden curriculum in medicine. Because these assumptions are not directly addressed in teaching, it is questionable if students see the philosophy of science as a source of uncertainty. Atkinson asserts that in their clinical years, students focus on learning the 'methods of inquiry' as opposed to scientific facts. This includes the patient history, comprised of questions directed to the patient. This claim will be examined in this study as students negotiate the patient history, through their experiences with patients.

Becker et al. (1961) undertook a similar approach to Merton et al. (1957) using observation and interviews of medical students to derive a series of perspectives for understanding medical students' experiences in their education. A perspective was described as 'a co-ordinated set of ideas and actions a person uses in dealing with some problematic situation' (Becker et al., 1961, p. 34). These perspectives could be short- or long-term and included students' direction of effort in learning, and perspectives regarding responsibility and clinical experience.

Student culture was seen by Becker as important, both for student support, and negotiating the direction and effort of student learning (Becker & Geer, 1958a). Students focussed their learning in the preclinical years on the need to pass exams, as opposed to learning what

students perceived necessary to practice to be a doctor. Once on the hospital wards and gaining clinical experience, students' group perspective changed to taking responsibility for patients, and undertaking procedures. Students were seen as not taking on a professional role as Merton et al. (1957) observed. However, Hafferty (1991) has more recently observed students taking on a particular role when he observed students talking with dying patients. The differences in conclusions between researchers may lie with differences in definitions and labelling of student behaviour.

Atkinson (1984) was critical of the 'closed institution' approach to medical school by students in Becker's study where Becker and his colleagues observed students attending to, and absorbed in, selective aspects of medical culture. While this approach helped students solve problems in the clinical environment, Atkinson suggested that this would result in students having a view of medical culture that would differ to that they would experience as doctors. Atkinson doubted that students would have this different view and so challenged Becker's conclusion.

The demography of the medical student populations in the early studies differ remarkably from the current study. Women and non-whites comprised 5% each of the class according to Becker et al. (1961). The programmes were four-year graduate programmes typical of the United States of America, compared to the six-year undergraduate programmes in New Zealand. In New Zealand for the last fifteen years, women have averaged 50% of a class, and the ethnic composition is diverse (at least 50% of students are currently non-white at the University of Auckland medical school) with affirmative action programmes for Maori and Pacific Island students. The other differences between the 1950s and the twenty-first century include increasing medical knowledge, the increasing reliance upon technology in medicine, and the place of the patient with respect to access to information, consent and rights. This study does not address students' experiences according to gender or ethnicity. However, it can be seen that the current study is timely considering the changes that have occurred in medical education.

Despite differences in medical education in the 1950s and today, Becker's study provides relevant insights into medical training today. First, medical students felt overwhelmed by the workload, and all they were expected to know. Second, there was a conflict between knowing what they perceived as relevant to be a doctor, and knowing what was needed to

pass exams that resolved to the latter approach which has been shown in more recent research to still be relevant (Haas & Shaffir, 1987).

While Becker et al. (1961) emphasised the importance of students' first contact with patients, they gave it no attention at all in that study. More recent research has again suggested that students' transition into the clinical environment is an important field for research (Radcliffe and Lester, 2005). Pitkala & Mantyranta (2003) have also raised the clinical transition as important for further research, because of the challenges medical students face in the shift.

The traditional structure of the medical curriculum at the University of Auckland medical school contrasts with the shift other medical schools have undertaken towards problem-based and case-based learning. Problem-based learning utilises small-group problem-solving of 'clinical cases', in preference to didactic large-class teaching. The goal of problem-based teaching is to stimulate student interest in basic sciences more successfully than by the traditional teaching methods, as well as improving students' problem-solving skills (Berkson, 1993). Written cases are centred on a 'paper patient', that incorporate physical, psychological, social, ethical, legal, economic and other factors that students in small groups have to research, and consider the diagnosis, investigations, and management options for. Despite these curriculum changes, no one has shown there to be any changes to the professional socialisation of medical students compared to students who undertake medical education within a traditional curriculum structure.

Early advocates of case-based learning note that, from a socialisation perspective, there are common tensions across both current styles of curriculum, particularly when patient contact is initiated early in student learning. These similarities include that there is still a vast body of knowledge to be learnt to become a doctor, medicine remains an imperfect science that cannot provide answers to all patients' problems, and doctors' questions; and there is still an adjustment to the new status as a medical student. Regardless of when students meet patients, it is anxiety-provoking, at least for the student (Haas & Shaffir, 1987).

Other more recent studies warrant examination with respect to medical student professional socialisation. A psychology-based, seven-year longitudinal study of medical school

education in Israel was undertaken by Shuval (1980). She derived three roles students perceived as important in doctors. These were (presented in descending order of priority): as people (the interaction of doctors with others including other healthcare professionals and patients); as scientists (the knowledge and research aspects); and the role of status (the physician's place in the organisation of the profession with respect to hierarchical structure). The order of importance of these interdependent variables was constant over the length of training (Shuval & Adler, 1977). These findings appeared to fit earlier researchers' conclusions that students could be divided into three similar groups or type as the doctor's roles, based upon the student's motivation for entering medicine (Reissman & Platou, 1960).

Moving beyond types of students, Hafferty (1991) examined the emotional socialisation of first year medical students through their experiences with death and dying. He showed that the culture of medicine directed students' responses and coping strategies. He challenged Merton et al.'s (1957) portrayal of the smooth and orderly process of professional socialisation, noting that students received inconsistent messages about feelings, and how they should be expressed. In anatomy, the depersonalised approach, or control of emotions was reinforced by tutors, while a personal approach to stress was advocated in other areas of teaching. The current study will expose students' reactions and thoughts to anatomy and unwell patients, in students' third and fourth years of medical school.

Two large studies from the United Kingdom have made important contributions to the medical professional socialisation field. Atkinson (1981) based his work in a Scottish medical school, using a social constructivist perspective to view how medical and surgical knowledge is transmitted through students' first year of clinical teaching. His focus was on the official teaching students received, particularly during bedside teaching. Metaphors of 'hot' and 'cold' medicine described patients' roles in student teaching and learning. 'Hot' patients were newly presented to the hospital and acutely unwell, providing students with more doctor-like opportunities to make the diagnosis of the patient's disease. These patients represented diagnostic uncertainty for the students, unlike 'cold' patients who had been diagnosed, were medically stable, and practiced in their story telling (Atkinson, 1981).

Atkinson has criticised other researchers' homogeneous treatment of medical culture, noting the differences between specialty groups within medicine (Atkinson, 1995). Sinclair (1997) argues that for professions to exercise their monopolies there must be a single culture or cognitive identity. While Sinclair concedes that a 'total institution' must be large enough and ordered enough to accommodate the single culture and differentiated culture perspectives, he remains sceptical. However, Atkinson's view does not stand alone. Good and DelVecchio Good (1993) acknowledge the diversity of 'perspectives and voices' in medicine, reflecting on specialty areas of work and physicians' own areas of work and life experiences. This thesis considers pre-specialisation medical education, and focuses on individual experiences within the clinical environment and not on specific specialty areas. Students' experiences with patients provide the lens through which professional socialisation is viewed.

Sinclair (1997) similarly observed medical students during their training at a London medical school. He extended Becker's 'perspectives' to 'dispositions' while employing Goffman's (1959) analogy of life as theatre applied to the everyday lives of the medical students. The constructs of frontstage, backstage, official, unofficial, and the observing audience were used to understand the performance of being a medical student, through his own research. Students co-operated across the preclinical and clinical years, but strived to outdo one another in their presentation to their consultants. Medical students acquired medical language, were exposed to teaching by humiliation, and aimed to gain as much clinical experience as possible. Sinclair concluded that students attain a 'medical habitus' demonstrating cynicism, and were prone to stress and psychological illness because of the education they received.

There are many smaller studies investigating medical education, however only a few of the areas will be discussed here. Earlier research interests have not necessarily continued, for example, the religious and political ideologies of students are no longer investigated (Colombotos, 1969). However, empathy, idealism, cynicism and stress do continue to interest researchers. These concepts are treated as unique, definable objects that can be measured (Hojat et al., 2004; Wolf et al., 1989). What was initially constructed as a shift from early idealism to later cynicism (Wolf, et al., 1989) has been argued to be more complex. Rather than students losing their initial idealism as they progress through medical training, it has been suggested that students' idealism is 'side-tracked' by greater demands

including high work loads, and working with different staff (Becker & Geer, 1958b; Becker et al., 1961; Testerman, et al., 1996). Becker and Geer (1958b) suggest that idealism and cynicism are situational traits that are not often expressed individually, but are collective phenomena observed when observing or talking with students in groups or public places. Sheehan et al., (1990) have correlated student mistreatment and witnessed medical misconduct with student cynicism (Sheehan et al., 1990). Empathy is now a more common trait for research, seeming to have replaced idealism and cynicism in the medical education literature.

Different research methods have continued to present varying perspectives regarding medical student empathy and cynicism. Using student diaries Pitkala and Mantyranta (2003) noted that cynicism was absent from student writings about early clinical experiences, and that students did not describe objectifying attitudes towards patients, as others have suggested (Becker, 1993; Becker et al., 1961). Whatever the research methods, and despite the arbitrary nature of the concepts investigated, the same questions regarding empathy as with idealism are asked – does empathy decline during or after training? How can the decline be stopped? How is empathy measured? (Hojat et al., 2004; Mangione et al., 2004; Rosenfield & Jones, 2004). These terms remain ambiguous and this is problematic (Musselman, MacRae, Reznick & Lingard, 2005).

In most medical education research, the clinical environment in which students learn is often not taken into account by researchers. As an example, Benbassat and Baumal (2004) have suggested focussing on changing how students learn to elicit the patient case history, without acknowledging the environment students learn in, and how go about students learning the patient case history. Students are cast as passive and not active agents in their socialisation. The result is that teachers and researchers devise new teaching and student assessments without considering the cultures of medical education and Medicine, and the conflicting messages medical students receive as they participate and learn.

In the area of medical student selection, Rezler (1974) acknowledges a more comprehensive view of medical education. Research investigating medical student selection has attempted to correlate student attributes and achievement with later academic success. Rezler (1974) suggests that while selection of medical students is important, peer and faculty attitudes should support those attitudes sought in applicants. He implies that the

informal and hidden curriculum must support the formal curriculum if positive student attitudes are to be maintained.

There is a developing focus on transitions in medical education research. This includes the transition between preclinical and clinical environments, and shifting from being a medical student to being a junior doctor. Concerns have been raised with regard to the vulnerability of medical students during transitional phases (Stephenson et al., 2001), and in particular the levels of student stress and anxiety, as students shift into the clinical environment. The causes of student stress have been identified as multiple. They include; talking to patients, presenting cases, dealing with death and suffering, and relationships with seniors (Firth, 1986; Moss & McManus; 1992), as well as a perceived lack of knowledge or application of theoretical knowledge, and concerns about fitting into the team (Hayes et al., 2004; Prince et al., 2005 Radcliffe & Lester, 2005). Increased student workload and responsibility have been identified as stressors in the transition from medical student to junior doctor, and can be extrapolated as potential stressors for students shifting into the clinical environment (Prince et al., 2004). Stress and anxiety have been associated with potentially detrimental effects on physical and psychological well-being (Firth-Cozens, 1987), and correlate with negative academic outcomes for students (Linn & Zeppa, 1984), and the increased future risk of mental illness and suicide (Sinclair, 1997).

Intimidation, harassment and humiliation by consultants and senior staff are well documented as a source of stress for medical students (Baldwin, Daugherty & Rowley, 1998; Uhari et al., 1994, Sheehan, Sheehan, White, Leibowitz & Baldwin, 1990; Wolf, Balson, Faucett & Randall, 1991). In earlier literature, vignettes demonstrate undefined harassment and diminution of medical student by the teachers or consultants (Atkinson, 1981 for example). Intimidation and humiliation have been justified by abusers and the abused, as necessary and having a specific purpose (Musselman et al., 2005). Despite these dubious justifications, stress and anxiety in students have been associated with the development of maladaptive responses that result in either over-identification with patients, or decreased student empathy with patients (Rosenfield & Jones, 2004). Students are inexperienced in dealing with these mostly interpersonal issues that occur within the culture of medicine.

The early introduction of clinical skills and communication skills teaching to students has been shown to reduce, at least some, student anxiety when they start in the clinical environment (Hayes et al., 2004). However, the environmental or social aspects that contribute to student anxiety exist whether students are present or not on the hospital wards, because wards are busy, ward rounds happen daily, patients are sick and die. Students come into the clinical environment and must meet learning requirements, as well as adjust to, and fit into this new world. Without fully exploring the breadth of experience of students entering the clinical environment, these issues remain superficially understood.

Apprentice-style Learning and Socialisation

I will show in this thesis, that learning in the clinical environment offers medical students a context for their previous learning, and the learning for the next three clinical years. As Merton noted students

> Most enduringly learn – from sustained involvement in that society of medical staff, fellow-students, and patients which makes up the medical school as a social organization (Merton, 1957, p. 42).

I take the 'medical school' in this quote to include all sites of medical student learning, including the classroom and clinical environments of the hospital and the general practice. The preclinical years are notable for the dominance of the structured learning environment of the classroom, whether it is in large classes or the laboratory. This is removed from the eventual environment in which the information will be used. The clinical years are in the clinical environment and this is a large, varied, unpredictable place with multiple teachers, including patients.

Apprenticeship and situated learning are new ways of considering students' learning in the clinical environment, with researchers only recently beginning to explore the implications for medical education (Bleakley, 2006). Swanwick (2005) recommends that increased attention be given to 'the development of the medical apprentice within a community of social practice' in postgraduate medical education (p. 859). Bleakley (2002) notes the limitations of psychological approaches to student learning, because they do not take into account communities of practice within which learning occurs. Also, learning is taken as the transmission of knowledge from one to another. The situated learning approach

acknowledges that work practice is dependent on several different people, and that knowledge is socially constructed and maintained, across generations of apprentices and masters.

There are calls for a shift from the cognitive processes of learning to a socio-cultural process in medical education (Bleakley, 2002; Swanwick, 2005). Eraut (2004b) argues the importance of acknowledging individual learning, as well as an interactive approach to learning that is suggested in situated learning. Because the apprentice is learning in the workplace, his or her learning will be enhanced because of the relevance of the workplace context (Koens et al., 2005). Viewing learning through apprenticeship models helps to

> Emphasise the centrality of activity in learning and knowledge and highlights the inherently context-dependent, situated, and enculturating nature of learning (Brown, Collins & Guguid, 1989, p. 39).

To some medical educators, the unpredictability of apprenticeship learning is almost too risky to acknowledge because of the 'wide variation in student opportunities' (Howe et al., 2004, p. 328). This supposes that medical students' clinical experiences are somehow more controlled or defined, by not considering student learning in the clinical environment as apprentice-style. Whatever the model educators select, student experiences are not uniform of consistent across a group, as will be seen in this study. Often the term apprenticeship is used without any clarification of what it means (Howe et al, 2004; Prince et al., 2005).

While the workplace may be an enriched context for learning within, researchers struggle with it as a learning environment because its primary function is not a learning environment but a workplace (Sandrioni, 1997). Learning therefore takes a second place to work. Students will have different experiences, depending on the patients and doctors they associate with. This attitude to apprentice-style learning is teaching-centred, and assumes that all students will learn the same material if they are taught it. Likewise, this perspective of apprentice-style learning focuses only on the formal curriculum to be learnt by students, and ignores the hidden and informal learning that students gain in the clinical environment.

Turner, Collinson and Fry (2001) challenge the idea that clinical education is truly apprenticeship, because the short-term multiple placements of students denies the medical student a sense of 'belonging to a particular team, continuity of care, support…' required

for apprenticeship learning (Turner, et al., 2001, p. 515). Despite differing definitions of apprenticeship learning and the concern that some student learning does not truly fit a definition, medical students learn Medicine and medical work from others – doctors, other students, patients, and so on. Students observe, copy, discuss and practice components and approaches to clinical work, usually supervised by more experienced or senior staff.

While the formal years of employment as a doctor may be seen to capitalise on apprentice-style learning (Bleakley, 2002), the apprenticeship begins earlier for the student. An important aspect of this focus is the change in the students' learning environment. The clinical environment offers the student the chance to learn in a social environment, and be involved with patients and interact with more and differently experienced people. While Adler and Shuval do not explicitly address apprentice-style learning in their research, they acknowledge the importance of the context of the clinical environment in students learning.

> The context of socialization for medicine is crosscut by a multitude of pressures and messages transmitted from socializers to students as the latter learn the norms and values of their future profession. Socializing agents are not limited to formal instructors but include a wide variety of significant others with whom medical students have contact: paramedicals, technicians, patients, other students, interns, premedical instructors, clinical teachers and others of varying significance at different times…characterized by a broad array of values and norms…of professional practice…transmitted in a rather ambiguous style which is characterized by conflicting messages (Adler & Shuval, 1978, p. 693).

These authors acknowledge that the socialising agents are modulated by the students, depending on the students' own strength of beliefs, what they attend to, the group norms, and the individual's way of managing ambiguous information. The reference to group norms is consistent with Becker et al.'s view that students work together as a group, negotiating priorities and interpretations of teachers' expectations, and so establish a group culture (1961). Adler & Shuval (1978) emphasise the individual within the group, and so each student's experience in the same clinical environment or ward can be expected to be different.

Participation in work-related areas has been shown to positively affect students' occupational identity through the acquisition of relevant skills and attitudes, internalisation of motives, and ideological development (Becker & Carper, 1956). Being in the work

environment allows the student contact with the teachers, and people that students aspire to emulate. Students see the challenge of mastering the required problem solving skills. The student learns the institution or organisation they will work in after graduation, and why and how those more senior to her or him do the job.

Atkinson (1981) sees the apprenticeship model as attenuated over time as students are delayed in taking responsibility for patient care, and are being not seen as part of the functioning team. However, as he goes on to note and as will be seen in this thesis, apprenticeship remains an underlying mode of teaching and learning in the clinical environment. 'Underlying' has two meanings here. The first meaning is that underlying is the common and usual way of learning. Second, underlying is unacknowledged, and sits below all the other approaches to teaching and learning that are addressed in the medical education literature.

> The fact the 'curriculum' of clinical instruction remains to a considerable
> extent unwritten and implicity [*sic*] is in large measure a direct reflection
> of the basic character of such clinical work (Atkinson, 1981, p. 34).

The result of this informal or hidden curriculum is that what students learn is dependent upon the opportunities that arise during clinical instruction, however, this also includes medical work, and students start to undertake tasks in the work environment. Student learning may consist of supervised learning, as well as unplanned learning that relies on the opportunities students happen upon. Legitimate peripheral participation is a model of apprenticeship learning that takes into account the social environment of the learner (Lave & Wenger, 1991). Because the context is vital to the learning and the student doesn't copy the 'master' in isolation from the clinical world, the student learns about and within the work environment, as well as directly from the doctor. The learning is situated in the work environment.

Legitimate peripheral participation encompasses the student having access to and being given the authority, to be a member of the work environment. While the term implies a sense of the student or learner sitting on the margins, occasionally participating or only working at the fringe, it is more flexible and variable than that. Participation is limited along with limited responsibility, but it can, and does increase with experience and confidence. The student provides a partial contribution to the profession's work, but is still

engaged with the clinical environment, and is a member of the medical community. The term 'peripheral' is not a marginal versus a central comparison, but rather acknowledges that there are varied and flexible ways of being engaged in the learning environment, that lead to fuller or more participation.

Characteristic of this approach to learning is that the student is simultaneously engaged in several roles; they are learners, but at the same time they contribute to the work at hand if only in small ways. The emphasis in legitimate peripheral participation is upon learning, and not teaching. There have been criticisms that there is not enough focus on formal learning in Lave & Wenger's consideration of workplace learning (Fuller & Unwin, 2004). This thesis is focussed on students' clinical experiences, and so similar charges could be made.

Becker et al. (1961) note that the medical student is an apprentice with not one master, but many masters. This includes everyone on the team who may exert influence at different times of a students' attachment to a team. Each time students attend a new team or ward or general practice, they meet a new team with differing expectations. They must transfer relevant learning from the previous situation, and learn the unique aspects of practice of the new ward and team. Students are learning about medical work, doctors, patients, nurses, other staff, and the varying environments of hospitals and general practices, all of which go beyond the formal curriculum detailed in student course books. The medical school requires students to pass exams, and so students must simultaneously satisfy the many demands of different organisations, and people. Both types of learning required of students support the continued practice of medicine represented with the dominant focus upon the diagnosis and treatment of diseases, within the clinical environment.

Students are becoming part of the medical world, being socialised into it at the same time as they learn about it. This learning is not ordered or linear and organised by the teacher, but taken advantage of by the student when the opportunities are presented to him or her. At times the student may suffer from 'benign community neglect' and be left to his or her own devices but they are still participants in the environment. There is structured teaching and tutorials for students in their clinical attachments, but most of their time is not spent in formal teaching, but engaging in wide and variable learning that may be spontaneous and unplanned, or vicarious. This study goes someway to present students' informal learning in

the clinical environment, and shows that apprentice-style learning, particularly with patients, takes students beyond the biomedical model that prevails in the preclinical years.

In summary, the sociological and psychologically-based literatures view medical education and professional socialisation differently. In the sociological literature, the culture of medicine is acknowledged, while interpersonal relationships and psychologically-based concepts are reflected in the psychological literature. This research sits within the sociological perspective, claiming that students are socialised or enculturated into the medical profession and acknowledging that they are participants, and not simply recipients in the process.

> Within any group of students, there are significant individual differences that sensitize students differently to the education to which they are exposed as a group. Individuals vary in their ability to learn, in their receptivity to the component attitudes and values of their professional role (Reissman & Platou., 1960, p. 174).

This thesis will examine the nature of medical students' experiences across the preclinical to clinical transition, and in relation to the biomedical model. Before doing so I will consider the research design and methods used in this thesis.

Chapter 3

Methodology

Introduction

This thesis bridges the disciplines of medical education and medical sociology, and aims to explore how medical students learn to be doctors. Medical education research is an amalgam of cognitive psychology (for example Schmidt, Norman & Boshuizen, 1990), education research theories (see Ten Cate, 2001 for consideration of the issues in this area), and more recently, sociological methods (Lyon, 2003, for example). Medical research's association with the biomedical and scientific approach has generally meant a dominant paradigm of experimental design (Irby, 1990). However, in the last ten years there has been an increasing receptiveness toward qualitative research methods in medical education research.

Cribb and Bignold (1999) have called for a broader examination of the issues relevant in medical education. This acknowledges that traditional research methods don't investigate the subjectivity and interpretive action that is necessary to understand medical education (Malterud, 2001a). In a qualitative approach to research, the researcher is implicitly involved in a holistic perspective that 'seeks to illuminate the meanings of events and actions, rather than to formulate guiding rules for guiding practice' (Irby, 1990). However, there remains debate in medical education regarding qualitative research and the place of theory, best-evidence medical education, methods and issues of quality, with the observance of a widening of this field of research generally (Prideaux, 2002). In this chapter I will describe and justify the qualitative research methods used in this thesis.

Medical sociologists often research within interpretive and critical theory paradigms, in order to uncover the social processes underlying phenomena. I chose qualitative research methods because of the nature of the area of interest, and the questions being asked. Professional socialisation is a constructed concept that touches on sociological, psychological and educational fields. Accepting that professional socialisation includes a range of ideas that traverse different disciplines, and that it is both a personal and social process for which generalisation and limiting subjective expression of the experience could

limit our understanding of what is involved in learning to be a doctor, qualitative and specifically interpretive methods of research were most appropriate. Qualitative methods can potentially lead to the 'development of hypotheses about the diversity of responses among medical students to what is ostensibly the "same" environment of learning' (Merton, 1957, p. 45). Qualitative methods can also inform the continued development of medical education.

There are several assumptions accepted within qualitative research paradigms (Higgs & Cant, 1998). First, there are multiple constructed realities, and not a single correct answer or truth that awaits discovery by the researcher. There is a commitment to the presentation of multiple or different realities, as opposed to a singular and objective truth.

> Sociology considers scientific research social practice similar to other social practices, such as artistic production, medical diagnosis, and technical innovation. This does not imply that scientific research is devoid of any specific characteristics, merely that, like these other fields, scientific research is socially constructed (Albert, 2004, p. 948).

Different people interpret events and experiences differently, and no one experience or interpretation is more true or valid than another. These multiple realities are not readily aggregated (Lincoln & Guba, 1985). Second, the nature of the research methods used when undertaking qualitative methodologies means that the researcher is, in some ways, effectively a participant in the research. While this is true of all research, it is addressed to differing extents in different research paradigms, usually explicitly in qualitative research. Third, there are no generalisable truths in qualitative research, as there are in quantitative research; it is the deep understanding of the particular that is sought. Fourth, qualitative research describes and interprets events, and is not seeking a cause and effect relationship (as is often done in quantitative research).

Student interviews, participant observation and document analysis were used in this thesis. Traditionally, medical professional socialisation research has utilised participant observation, but as Merton noted with respect to observation of participants, 'private definitions of the meaning of a social situation are not always evidenced in outward and visible behaviour' (Merton, 1957, p. 45). Observing behaviour does not provide explanations and understandings of participants' experiences (Armstrong, 2002). Because understanding students' experiences was central to the research, interviews were used.

These were of a semi-structured format and students were interviewed on two occasions –
in their second semester of third year, and again in the following year. Interviews were
used to elucidate students' experiences, and what these experiences meant to students. The
interviews were formal, that is, they were arranged in advance as opposed to occurring
opportunistically during observational periods (Pope 2005). This approach to interviewing
allowed for an uninterrupted interview, and audio recording. Formal interviews contrast
with informal interviews, which are usually undertaken during periods of observation
allowing the observer/interviewer to make only brief notes of their discussions (Becker et
al., 1961).

While observation situates the research in the ethnographic tradition (Adler & Adler,
1998), and informal interviews support the observation notes of the researcher, this
research uses interviews as a primary source of material, with observation as a secondary
source. The intention is to understand students' experience (Lincoln & Guba, 1985), and
this is more readily achieved through the student voice.

Interviews and the Participants

Following approval from University of Auckland Human Subjects Ethics Committee
(UAHSEC; reference number 2002/203), letters of invitation to participate in the research
were sent to all potential student participants, via the student mail service. As well as the
letter, the student Participant Information Sheet and Consent Form were included (See
Appendix B). A form was included for students to complete their name and contact details
if they wished me to contact them rather than contacting me directly.

Of the class of 132 students, 23 students expressed an interest in participating in the
research with 21 students volunteering to participate. The details of the participants are
presented in Appendix C. In summary, the students who participated in the research were
diverse in their backgrounds. Nine students had entered medical school directly from
secondary school. Four students completed an intermediate year before joining the class in
the second year. The remaining eight students applied and were accepted to medical school
having completed a tertiary qualification, and had work experience. These students were at
least three years older than their school-leaver counterparts. Three students were Maori,
fourteen were Pakeha (European), and three students were Indo-Asian in ethnicity. In terms

of gender, fourteen students were women and seven were men. The students who participated in the research were volunteers and therefore did not provide a representative sample of the class or the medical school with respect to gender, ethnicity or age. The aim in this thesis was to elicit a range of student experiences which would not necessarily have been achieved through sampling. It is not possible to evaluate if a representative sample of students experiences was achieved as the range of experiences had by students who did not participate in this research is unknown.

All the interviews were conducted in the Faculty of Medical and Health Sciences in various offices and tutorial rooms, as they were available. On attending the first interview, students were re-presented with the Participant Information Sheet and Consent Form. Each student had the opportunity to read the Participant Information Sheet, and have questions answered before deciding to participate, and then completing the Consent Form. The length of the interviews was determined by the students, but most lasted between 45 minutes and an hour. The interviews were audiotaped as stated on the Participant Information Sheet.

The use of interviewing in ethnographic research has a long tradition, and remains a common method in qualitative research (Fontana & Frey, 1998). It was pivotal to this research for exploring the breadth and depth of student experiences. A semi-structured, open-ended interviewing technique was utilised to allow the student to fully describe and talk about their own experiences, particularly those that were unique and meaningful. A structured interview would have limited student response to predetermined questions, and so limited the exploration of issues relevant to the students. The semi-structured interview entails the researcher asking students some common pre-determined questions, but allowing students' responses to guide further questions. Some understanding of the subject area must be known by the interviewer to develop questions, but the individual experiences of each participant can be explored to provide a full and rich picture.

My focus was on students' reflections of their clinical experiences, and I interviewed students twice – once before they shifted into the clinical environment, when they were still in their third preclinical year and then again, in their fourth year when they were now based in the clinical environment. This had some advantages. In the initial interview I was able to cover their perceptions of their early clinical experiences. The second interview focussed on their fourth year clinical experiences. Also, the first interview acted as introduction for

students to me as the researcher and this area of research with the intention that this would facilitate a level of comfort with the research for the student.

A list of interview questions or subjects was drawn up prior to the first interview. This was altered slightly following discussions with supervisors, doctors, teachers, and students. (See Appendix D for the semi-structured questionnaire). As the initial interviews were completed, the question order was changed, and some questions were added. The order was not strictly adhered to, but was directed by the progress of the interview with the particular participant. The most significant change in questioning was to ask students about their more recent experiences, before their earlier experiences at medical school. Students found it easier to relate their most recent experience first, and then recount earlier experiences.

To initiate contact with students for the second interviews, a letter was sent to each participant via the student mail boxes. This letter invited them to contact me and all but one student did so. We arranged mutually convenient times to complete the second interview. The second interview was based around three areas of conversation. I asked them to describe each clinical attachment and memorable experiences or people. How each area was addressed depended on the flow of discussion with the student, and students were able to follow tangents in their experiences, as they arose.

By interviewing students without others present, I endeavoured to provide students a safe environment for the interview. This must be compared with informal interviews and conversation in observation settings where the risk is that students continue the tone or attitudes common to the prevalent culture (Becker et al., 1961). In informal discussions with students, Becker noted that students continued the tone or attitudes that were set and expected ('ritual cynicism' for example). The students heard others voicing cynicism as the normal attitude, and continued to do so. Researchers undertaking participant observation aim to be accepted as part of the group being studied. Their 'blending in' means that the observed will take them for granted, and not limit or modify what they would usually say. However, this may limit student's expression of other attitudes and feelings that they wouldn't say in front of peers (Becker, 1958). From a researcher's perspective, this may limit the space for students to express other, or less popular, or different experiences. By undertaking one-on-one interviews, I hoped to allow students the chance to be open.

Understanding that students may choose to disclose distressing or personal events in the medical training, I contacted the University of Auckland Student Counselling Service prior to the interviews. I met with the Manager of the service, and we discussed the research and its potential risks. We agreed that student counselling pamphlets would be made available to students to self-refer should they wish to do so.

Participant Observation

As part of the research for this thesis, I attended and observed areas of teaching that were relevant to the study. These included the anatomy orientation, and the students' first sessions of dissection, as well as some large class lecture-based teaching. I observed the interactions between students and teachers, and students and students. During observational work, I discretely took notes which I then later wrote up into complete field notes. These notes were copious as they often are (Atkinson & Pugsley, 2005), and included explicit descriptions of the participants' roles, what was said generally, as well as verbatim phrases, and details of the physical environments. These are necessary for observational work (Denzin, 1989). While I did not undertake any specific observation of the Clinical Skills Resource Centre, I drew on my experiences and notes as a tutor of this class in the previous year to undertaking the research.

Participant observation allows the researcher to observe the environment of the participants. The researcher effectively enters the social world or the field of research, aiming to observe and experience it as the participants do. This participation will be to different degrees, depending on the researcher and the situation, but the aim is to understand the relevant culture or social world (Fossey, Harvey, McDermott, & Davidson, 2002). Participant observation is important for the researcher to develop an understanding of the culture being observed, but the material used from participant observation field notes is that of the researcher's experience, and not the students experience (as interview material is). Therefore, my observations and the interviews with students complemented one another in this study.

While observational work may be viewed as the least obtrusive of social science techniques, (Adler & Adler, 1998) there is still a need for ethical practice. Access to areas of interest for observation is considered an important aspect of qualitative research (Pope,

2005). Because I was a member of the medical school community, and known to students and staff, access was easy and unchallenged. In developing this research, I consulted with senior academic staff who actively supported the research. A written letter of support was given by the Dean of the Faculty of Medical and Health Sciences, to the UAHSEC. This addressed my formal entry into the field of study, as a researcher. In terms of access to participant observation opportunities, I emailed the relevant teachers, requesting their permission to attend in light of the research. I knew every teacher from either my time as a medical student, or from working there two years prior to starting the research. This undoubtedly eased my access and acceptance in the participant observation tasks. There were multiple speakers at the anatomy orientation and I received verbal or written consent from every speaker. My access to students who participated in the research was eased by my being known to them through my role as a clinical tutor. Students consent was not sought for the observation periods because observations were not of individual students.

The effect of the researcher within participant observation research, and particularly the stranger working or observing in an established community or environment, is termed the 'Hawthorne effect' (Parsons, 1974). It remains an important area of consideration in medical education research (Pope and Mays, 1995; Stern, 1998). In any research, the researcher impacts upon the research (Malterud, 2001b); their background and areas of interest will influence the area of research, methods chosen and interpretation of results. A new researcher in a social environment, particularly someone who is open in their role as an observer, will impact on the environment they are in, because participants know they are being watched, and so may alter what they do or say. An observer of a personal conversation between two people will limit the conversation more than an observer in a large group of strangers in a public area. It is difficult to know how my presence impacted upon the events I observed. Because most of the times I undertook participant observation were large teaching sessions, students were relatively quiet and acted as a group which I was part of. If students spoke to me, I would chat in return but otherwise I tried to keep a low profile.

My understanding of medical education and the culture and social world of the clinical environment, required standing both within, and outside of these places and making sense of them, through the students' views and experiences. I worked in one of the actual clinical placements of students within a large hospital, and so I remained in touch with the hospital

clinical environment of the students' experience. My role as a participant observer was often more participant than observer during these times. I had no responsibility for students teaching, assessment or safety when they were in the same department as me. I did not undertake interviews or observation of the students during their attachments. If an event had occurred that was risky for the student, patient or others, I would have intervened out of ethical obligation. This is acknowledged as an attendant risk of participant observation (Fontana & Frey, 1998).

Document Analysis

I undertook a review and analysis of most of the documents given to medical students by the Faculty, because this clarified expectations of students in terms of the formal curriculum. Although I reviewed most of the documents given to students, for practical reasons I elected to utilise only a select few for this research. Students received a large number of handouts, most of which related specifically to material repeated in lectures. Also, the handouts were reviewed as a secondary source or to support the arguments in the research literature. Technically, the documents were records in that they represented a formal type of communication, as opposed to personal items of written communication (Lincoln & Guba, 1985), but I have used the more common term of document analysis. Document analysis is not without question as a methodology (Foucault, 1972). No collection of documents is ever complete, but what is absent is unknown, and so the researcher's perspective could vary with the diversity of available documents. Knowing that there are so many potential documents to be included, a choice of documents to be included must be made. Also, and pertinent to this research, is that all of what is taught at medical school is not captured in such documents, but some fall outside of the bounds of the formal curriculum, into the hidden curriculum (Hafferty, 1998).

Reviewing currently active documents has risks. It is not possible to verify if the material given to students is considered important to all Faculty members. Similarly it is not possible to know whether students actually read the document. Other issues that cannot be easily resolved include the following: Does it matter who wrote the document and the intentions behind the authoring? Does the document represent the Faculty or medical education community over time? Do official documents represent a face to be presented to

official organisations? Do teachers refer to the document or undermine it? Accordingly, documents were selected on the basis of their availability to the student body. Although the documents were currently active, and not relegated to the domains of history and the archives, they were destined to be so. As medical curricula, staff and socio-political pressures change over time, so the messages that are to be given to students will change, and documents will be rewritten. Even if students do not read all of the course books, and the motivation behind documents may be questioned, I believe that analysis is valid. They were written by Faculty and were passed through the Board of Studies, the sanctioning committee for curriculum matters. These documents were presented to accreditation committees such as the Australian Medical Council Accreditation Committee, and so illustrated what was considered important by Faculty. Faculty present these documents to every student, with the understanding they contain important and relevant information. These documents are what remain to represent a time and place in an institution's history.

Analysis

The audiocassettes of the student interviews were transcribed by me or an independent transcriber. I proofed every transcript to improve accuracy, remove identifiers and complete gaps where it was difficult to hear the speaker. As is often recommended, every interview was recorded on two different cassettes. This allowed the use of the second cassette if there were difficulties with the first cassette. The lesser quality cassette was deleted when transcription was completed. No effort was made to document pauses and 'ums' and 'ahs' because they were not necessary to capture the essence of the students' stories, thoughts and experiences. A transcript would be amended with a note, if there was a particularly emotional moment. In some instances, a word or statement would be inaudible and so a space was left in the transcript.

Analysis of qualitative data commonly involves decontextualisation and recontextualisation of the data (Tesch, 1990).

> Decontextualisation allows parts of the subject matter to be lifted out and investigated more closely, together with other elements across the material that tells about similar issues. Recontextualisation will make sure that the patterns still agree with the context from which they were collected, and is important to prevent reductionism and to maintain the

connections between the field and the informant's account of reality (Malterud, 2001b, p. 486).

Coding of the interview transcripts involves identifying and labelling segments of data to identify themes. These themes can then be collated together (decontextualised), and examined for patterns and relationships within the identified themes, and shaped to present a coherent picture, which is then related back to the field of study (recontextualisation). The researcher is noted for contributing their reflections and analysis to the process (Fossey et al., 2002).

Initially, predetermined themes or areas of interest based upon the literature and structure of the medical curriculum were separated out from each other in the first interview transcripts. This included material regarding anatomy, clinical methods, clinical skills and the class-based teaching sessions. These themes were chosen based upon the professional socialisation literature, and the components of teaching in the curriculum that explicitly addressed clinical teaching. This approach of template analysis involved taking preformed themes from the literature in this case, which then served as a template placed upon the new data for analysis (Tesch, 1990). Also, derived directly from the interviews were themes relating to students' first year experiences, and their shift into the second year. The chapters *Anatomy and Human Dissection*, and *Early Clinical Experiences* are developed from the students' first interview and this approach to analysis. Hardcopies of the interview transcripts were cut, pasted, and collated into new thematic files. Copy and pasting of the computer files provided new files for printing and re-reading. These formed the basis of further analysis and writing.

In the second set of interviews, there were no predetermined themes. The themes were derived entirely from the interview transcripts through multiple readings and organisation of the common student experiences, across the transcripts. This is referred to as immersion/crystallisation (Borkan, 1999; Malterud, 2001b). Immersion/crystallisation involves a reading and re-reading of the transcripts to identify emerging themes; incidents applicable to each category are compared and integrated (Lincoln & Guba, 1985). The transcripts were read sequentially as whole transcripts which are termed as vertical passes, and also as sections common across all the second interview transcripts, described as horizontal passes (Borkan, 1999). Through these processes themes were identified. Notes

were kept documenting areas of overlap between themes. These themes form the structure of the three chapters, *Learning in the Clinical Environment, The Heterogeneity of Student Learning,* and *Being in the Clinical Environment Relationships, Risks and Responsibilities.* When students' quotes are used in this thesis, a pseudonym and number is used to denote whether the quote comes from the student's first (1) or second (2) interview.

The overall approach of varying the methods or piecing together different methods is acceptable (Denzin & Lincoln, 1998). This approach reflects the nature of qualitative research, which requires the flexibility of the researcher in order to meet the demands of the research aims, methods, and analysis. A discovery-focussed approach to the material was used to establish the 'patterns and connections among elements of data' (Fossey et al., 2002, p. 728). This involves the researcher classifying, comparing, grouping, and redefining the text segments of the transcripts. A separate record of the themes and their relationships was kept. This was particularly relevant in relation to the second interviews where there was no template of themes.

Participant observation notes were similarly read for themes related to the interviews. Through this process it became evident that the theory of social learning, legitimate peripheral learning (Lave & Wenger, 1991), was relevant to students' experiences in the clinical environment. The theme and sub-themes were organised to present a picture of professional socialisation. The student experiences were used to describe the setting of the research, thus reinforcing the value of student voice in the current study.

Due to the richness of the material elicited during the research, it was not possible to include all aspects of the interview and observation material satisfactorily in one thesis. Therefore I have chosen to focus on the experiences in the classroom in terms of the first two chapters and students' experiences in the clinical environment in the next three chapters in this study.

Data Management and Privacy

UAHSEC requirements of data storage and anonymity were adhered to. All audiotapes were locked in a filing cabinet, accessible only to me. With respect to anonymising the

participants in the research, all transcripts were 'named' with random two letter codes. The number '1' or '2' was allocated to each interview transcript reflecting the first and second interviews. All information relating names to codes was stored in a locked cupboard separate to the audiocassettes. These codes were later changed to names, the key to which was kept in a separate place. Names within transcripts were changed as well. There was an issue that Faculty members may be able to identify students, lecturers or doctors involved in teaching and supervising students. I have endeavoured to use the transcripts in ways to minimise this.

Quality

Because the assumptions underlying qualitative research differ from quantitative research, the terms used to assess quality of research also differ. Objectivity and generalisability are not the terms usually referred to in assessing the quality of qualitative research as they are in quantitative research. In medical education literature, rigour is more often based upon criteria such as credibility, confirmability, transferability, and dependability, which correspond with quantitative criteria of internal validity, objectivity and generalisability (Lincoln & Guba, 1985; Malterud, 2001b). These are consistent with the constructionist approach, and are used across qualitative research generally when rigour is being addressed.

Credibility is shown through the researcher representing 'multiple constructions adequately' (Lincoln & Guba, 1985, p. 296). (Although as the same authors note, it is reconstructions that are presented through the researcher's interpretation). The use of students' quotes in the thesis is undertaken to address the credibility of the current study. Credibility can be assessed with procedures such as relevance, reflexivity, clear detailing of methods of data collection, analysis, fair dealing, and triangulation (Mays & Pope, 2000). While prolonged engagement is accepted as a method of enhancing credibility, the parallel in this thesis is the interviewing of multiple students. Likewise while triangulation is often made in reference to multiple data methods, the interviewing of multiple students also served as triangulation from 'multiple sources' (Lincoln & Guba, 1985).

Relevance refers to the research adding to the currently held knowledge, or increasing the confidence of that which is already understood. The process of identifying an area for research, and developing a study entails a review of what is known or believed about the field. With regard to this thesis, the field of study has been identified as necessary for medical education, and for developing an understanding the professional socialisation of medical students (Becker et al., 1961; Radcliffe & Lester, Shuval & Adler, 1977; Stephenson et al. 2001). Reflexivity entails the researcher placing themselves within the research through addressing what preconceptions they bring to the research, and their subjectivities within the research. In the current study, this is addressed in the following section. Exposition of methods of data collection and analysis by the researcher, allows the reader to be able to trace and relate the research questions, methods and findings to one another.

Fair dealing refers to the nature of the ethical relationship between the researcher and the participants. Does the researcher treat the participants fairly, and use the research material in a way that is honest to the intentions of the participants? Information sheets and consent forms for participants allow the student to withdraw from the study without impunity. Individual interviews gave the students space to discuss their experiences with anonymity, which was further addressed with the use of pseudonyms. I have endeavoured to use the student transcripts honestly with respect to the intentions of the students. External validity as a factor of quality of quantitative research is translated into transferability (Malterud, 2001b). No research is universally generalisable, but by being explicit with the research aims, methods, and study sample, the researcher will indicate the transferability of the research findings. I have endeavoured to provide sufficient information for any reader to be able to assess the extent to which the original research findings can be applied to other contexts (Lincoln & Guba, 1985).

With respect to confirmability, triangulation, and journal keeping are recognised as accepted methods of checking that the material and interpretation are confirmable. I carried out a regular journaling exercise that helped locate my impressions and biases within the research. This related to the interviewing of students, analysis of the interviews, observations, and reading of the literature. As a practicing doctor and occasional clinical teacher, I was frequently struck by the relationships (conflicts, parallels and associations) between my research, teaching, and medical practice. I included in this my ongoing

reflections of medicine and medical education. As is the intent of critical sociology, I found myself frequently challenged and challenging the macro-perspectives and critical assumptions about medicine, doctors and patients. I also found myself 'critiquing' my interactions with patients and observing the practice of medicine as I drew on my knowledge of this medical school, in writing this thesis. Using this knowledge was a reflective process upon what was now tacit knowledge to me, and journaling was important for separating these observations from the everyday observations of the non-researcher.

Triangulation entails the researcher using different methods of data collection or multiple data sources to ensure that a more accurate account is achieved through the use of different perspectives or angles. In this research student interviews and participant observation, provided a checking mechanism, specifically in the preclinical part of the research. For the clinical aspects of the research (and to a lesser extent in the preclinical part as well) the literature research, and secondarily participant observation, supported the dominant method of student interviews. Literature served as a mirror to reflect issues and meanings in the research. It should be noted that despite triangulation being a commonly accepted method for assessing quality, the significant findings or those of interest may well be those that fall outside of the triangle (Stacy & Spencer, 2000). In this research, breadth and variety of experiences were sought, rather than a limited or common set of experiences. It is this range of student experience that is interesting and enlightening, because this more closely reflects the experiences doctors have in their work.

In summary, I have endeavoured to present the participants' perspectives through the use of qualitative methods, in particular through interviewing, and also have tried to ensure the fit of the data back into the social context from which their perspective were derived (Fossey, et al., 2002). I present a range of perspectives through students' own verbatim quotes, aiming to allow students to speak for themselves, within the questions posed by the research question.

My Place in this Research and My Background

In keeping with the definitions of quality in qualitative research, my position in this research needs to be made clear (Malterud, 2001b; Punch, 1994). As a doctor, I am a

member of the community that medical students are entering. I attended the medical school that the research is based in. I qualified within ten years of undertaking the research and had worked at the medical school for two years as a clinical tutor before beginning the research. I was familiar with the medical education culture, both in the hospitals that the students attended and at this medical school specifically.

I entered medical training as an 'Alternative Admission' in my mid-twenties, having completed a Bachelor of Science degree majoring in psychology, and having worked in medical research and the corporate world for three years. I entered the second year class exempt the first year, along with fourteen other older students, in a class of approximately one hundred students.

Following my qualification as a doctor, I practiced for nearly three years in the New Zealand public health system. I reached a point where I needed to specialise, but could not find a niche that suited me, and so I accepted a position in medical education at my medical school. I completed a graduate qualification in higher education while I sought a research area for a Doctorate of Philosophy. I have continued to work in Emergency Medicine at a large public hospital for two days a week. I have also been employed as a casual tutor, in the Clinical Skills Resource Centre in the second and third years of the medical programme. I have therefore maintained my contact with patients, and with medical students.

Participants of this research came from a class of students who were familiar to me, through being a tutor in the students' clinical skills teaching. This teaching was conducted in small groups. Its focus was on practical, clinical skills which the students usually appreciated as their other studies at the time involved theoretical scientific learning (anatomy, physiology, biochemistry, et cetera). I worked under the Director – a British-trained general practitioner, whose gentle and affable approach encouraged an interested and interesting class. I have no doubt that the students' experience of me in that environment impacted on recruitment for my work. I was not a researcher from outside of the medical school; most students had met me before. The students were familiar with my personality, and approach to teaching, students, and patients.

Chapter 4

Anatomy and Human Dissection

Introduction

At the University of Auckland medical school, Human dissection is undertaken in the second and third years of medical education. Dissection is widely 'seen as the most significant aspect of medical students' segregation from the lay world, and aggregation to the medical one' (Sinclair, 1977, p. 170). Through an exploration of medical students' participation and experiences in anatomy, I will show that anatomy, and in particular human dissection, separates medical students from science students and the lay world, through the privileged access to the human body. I will show that the uniqueness of the experiences in anatomy highlights the transition from being a science student, to being a medical student. While students are taught and learn the structure and function of the human body, they also begin to learn the place of personal emotions in Medicine. This is with ambivalence as students internalise their thoughts and feelings. Through examining the teachers' approach to anatomy teaching, as well as students' self-reported reactions and experiences, this chapter will explore these areas of professional socialisation.

Anatomy is a significant part of medical training, and whole body human dissection is a unique experience for medical students (McLachlan & Patten, 2006). However, it has been shown that students can adequately learn the anatomy of the human body without dissecting it (McLachlan, Bligh, Bradley & Searle, 2004; Nnodim, 1988; Nnodim, 1990). None the less, human dissection is commonly undertaken. I will show that students not only learn human anatomy, but must handle their own and other people's responses and reactions. It is commonly assumed that because students dissect bodies, they are at ease with dissection (Becker et al., 1961; Fox, 1989). In this study, this acceptance and ease will be challenged through students' own words.

Dissection and the handling of dead bodies are acceptable only in certain places. In the morgue, the mortician handles the deceased in preparation for the funeral (see Cahill, 1999, for a consideration of morticians' socialisation into mortuary science). The pathologist may dissect the body where the cause of death of a person is uncertain, because there is a legal

requirement to explain the cause of death. The cause of death must be fully explained within categories of defined medical diseases. The final place where the dead body is handled is in medical schools; anatomists, anatomy teachers and students may dissect the body to learn its organic structure and composition. Medical and legal processes determine the handling of the deceased. The legal restriction of access to dead bodies and the spaces where dead bodies are handled makes students' entry into the anatomy laboratory special and elevates its status so that when students enter, they are among a privileged few.

There has been a recent exception to the restricted access to the human body. In 2002, pathologist Gunter von Hagens conducted a public autopsy in London. The event received worldwide media attention. Despite the threat of Von Hagens' arrest, people paid 12 pounds for a ticket to attend the autopsy (CNN.com, 2002). The edited event was later televised. Von Hagens' publicisation of the human body has extended to exhibitions of dissected bodies (Body Worlds exhibition), again causing controversy (Boston.com, 2002). In a world where dissection is either sensational or invisible, medical students face and dissect the cadaver frequently.

Students walk into the anatomy laboratory crossing a symbolic threshold toward becoming doctors, with dissection being an important part of the professional socialisation of medical students. This threshold separates medical students from the lay world (Conrad, 1988; Hafferty, 1991). The use of the cadaver in teaching means that it is often considered a rite of passage for medical students, signifying a shift from lay person to medical student. Dissection is described as students' first hands-on experience as doctors (Sinclair, 1997). Students are cognisant of the exclusive experience of human dissection, which is reinforced by staff through the orientation prior to the laboratory. It is also reinforced through conversations with people outside of the class, who are fascinated or disgusted by the thought of dissection.

At medical school, students learn anatomy as they learn other sciences such as biochemistry and pharmacology. These sciences require students to participate in laboratory work, but in anatomy, students take the whole body and fragment it. Students learn to see and feel the body which will be the subject of their work (in its live form for most students), for the rest of their working life. Even researchers in the anatomy laboratory claim that once they have viewed the dissected human body, the researchers'

perspective of the body changes and the researcher no longer see the body as a lay person does (Konner, 1987; Shem, 1985; Good, 1994). Researchers and students see body parts and diseases, and not a whole person. However in this study, as in Hafferty's study (1991), I will show that not all students took this view all the time. Instead, at different times during dissection, some students see the body as a person and not just a biological specimen.

While student learning in the anatomy laboratory may involve a human body, there is no interaction between medical student and patient, as there is in medical practice. The body is an object to be dissected, studied and memorised for examinations. Teachers will discuss the clinical relevance of findings, but this is based on their experience with real patients, and is therefore removed from the body in the laboratory. As a potential place of work for students, the anatomy laboratory is relevant to only those who will become pathologists, and undertake post-mortems of deceased people. Most students will never enter the dissection rooms again. It is, however, part of the tradition of Medicine.

In the anatomy laboratory, students learn directly through dissection, but also use the body to apply teaching from classroom lectures. Students examine normal and abnormal anatomy, and examples of pathology or diseases are demonstrated in the bodies when they are identified. Although human dissection is part of medical training, it is not essential to dissect bodies to learn anatomy.

Internationally, human dissection is declining (Parker, 2002; Shaffer, 2004). In three of the four new medical schools in the United Kingdom, students do not dissect human bodies; instead, 'pre-dissected material' dissociated from the body is used to teach anatomy (Howe et al., 2004). The issues of costs to maintain a cadaver laboratory, social sensitivity, and the development of other approaches to teaching anatomy are making dissection a less acceptable way to teach (Ellis, 2001; McLauchlan, 2004). In some countries, there is a predicted dearth of instructors in anatomy teaching in the twenty-first century (McCuskey, Carmichael & Kirch, 2005; "Anatomy classes face gross shortage", 2003), and this may impact on the use of dissection and human anatomy teaching in the future. These medical schools use computer-aided learning and models to teach anatomy. There has been no demonstrated difference in academic achievement of students, when teachers use different modalities other than dissection, if courses are carefully designed and taught (Jones,

Olafson & Sutin, 1978; Nnodim, 1988; Nnodim, 1990). The medical schools that do teach with students doing dissection have provided a fertile field for socialisation research (Hafferty, 1991). However, some major studies of medical student professional socialisation have only passed a cursory glance into the anatomy laboratory (Becker, et al., 1961; Coombs, 1978; Merton et al., 1957).

Anatomy and human dissection are complex areas for research and analysis, because 'human organic material, however modified, is not simply matter; the human body is not simply an object' (Moore & Brown, 2004). Historically, public and judicial interests have been closely associated with dissection. Dismemberment and evisceration have been part of both criminal punishment and saintly adoration at varying times in history (Moore & Brown, 2004; Turner, 1987). The church has both supported, as a means of spiritual exaltation, and objected to dissection at varying times.

The earliest ethnographic study of medical students details a different environment for learning anatomy, than that of students in this study. Bodies submerged in chemical baths, students' ungloved hands going numb as a result of the toxic preserving chemicals, and students dissecting into the night, were part of the picture painted of the 1950s (Becker et al., 1961). Students were noted to quickly settle into focussed learning of the vast quantity of anatomical knowledge, and apparently took on an unproblematic and impersonal approach to cadaveric dissection (Becker et al., 1961).

Recently, researchers have sought to examine the student response to dissection more closely. The debate continues as to how students react to human dissection. Survey data show that students' first exposure to cadavers is not an 'aversive' experience, but one that is 'positive' and 'challenging' (O'Carroll, Whiten, Jackson & Sinclair, 2002), and only small numbers of students report life-disturbing effects such as insomnia (Snelling, Sahai & Ellis, 2003). This contrasts with interview-based approaches that describe some student responses to be as extreme as post-traumatic stress disorder-like reactions (Finkelstein & Mathers, 1990). Alternatively, students have a range of experiences and feelings (Gustavson, 1988), and students report varying lengths of time for negative feelings to diminish (Dinsmore, Daugherty & Zeitz, 2001; Penney, 1985).

Hafferty undertook an in-depth study and analysis of student reactions to anatomy dissection (Hafferty, 1991). He provided a detailed consideration of students' thoughts on the anatomy laboratory, and in particular the dissected body. He argued that the medical students' position with respect to anatomy and body dissection is not homogenous, stable nor consistent over time. Students take different positions or attitudes towards the body, and these positions change. The body as a 'biological specimen' invokes the

> Rationale of science and an image of lab as a place that exists solely for the acquisition of scientific knowledge. Detached indifference to the cadaver as a formerly living human being thus became the functional equivalent of scientific neutrality (Hafferty, 1991, p. 104).

In Hafferty's study, some students took the opposite position, viewing the body with a 'formerly-living-human status.' These students valued maintaining their sensitivity to the body as a human being, and admitted that they may be more vulnerable to experience distress because of this approach. However, these students believed that their reactions related to their ability to be sensitive as doctors in the future. The students also reported that this position better respected the dead than the biological referent/scientific specimen approach to the body. In this respect, a separation was made between the body as a scientific object, and the body as a deceased person. Detached indifference allowed the student to treat the body as something that could be dissected, and analysed with no reference to its humanness, while the opposite approach allowed the student to acknowledge that the body was not just a slab of meat but rather something more meaningful. The two positions were not exclusive in Hafferty's study; a small group of students took both positions, and some students shifted positions depending on the area of the body being dissected.

Medical students have often felt unprepared to undertake human dissection (Penney, 1985). At the University of Auckland medical school, the anatomy laboratory is introduced to students through an orientation which is held before the semester starts (effectively in holiday time). Once in the actual laboratory, specialist radiology trainees, the anatomy teacher and a pathologist assist students with dissection and identification of anatomical structures. Dissection is central to learning anatomy at the medical school with practical examinations being based in the laboratory and on the dissected bodies.

The Orientation

> Everyone was quite nervous…but we all know that when we decided to be med students we were going to have to do this. On my behalf it wasn't that I was freaked out by it, but it was such an odd thing and I kept on thinking that this was something not everyone sees and it is that that is more weird for me. It is like, this is going to be so normal for us, but it's not normal (Annie, 1).

The orientation at this medical school appears unique when looking at the literature on human dissection. In other research it was noted that students entered the laboratory following a brief talk about procedures such as the source of the cadavers, and their disposal, and the respect due the bodies (Hafferty, 1991; Lella & Pawluch, 1988). At the University of Auckland medical school and in the context of the preclinical curriculum, the orientation is unique; there is no such orientation in preparation for other papers or courses, and so it signifies the importance of the anatomy laboratory. The orientation is held over an afternoon with formal talks to students as well as an introduction to the dissection room and the display of a dissected body.

During the orientation, students are informed how bodies come to be in the laboratory, including the process of bequesting one's body for dissection. Interested people contact the Department of Anatomy, and a process for planning donation begins. Following the person's death any objection to donating the body by family halts the process otherwise the body is accepted and received by the Department. Once the Department of Anatomy finish with the body, all the parts of each body are cremated together, and a memorial service is held annually for all the bodies. Ashes are returned to the family or scattered at a crematorium as the family decide. Students are informed of this process, particularly that bodies are self-donated with family consent. The use of unnamed and unclaimed homeless people has been noted to occur in other medical schools, and is associated with student discomfort (Hafferty, 1991). However, at the University of Auckland medical school it is clearly stated that bequesting one's body is a consensual process on the part of the person and their family.

The orientation has developed from a previously-held blessing provided for Maori and Pacific Island students 'who for cultural reasons had found it difficult to study a dead body' (Redgrave, 2005). There had been no previous concession to personal, emotional or cultural matters carrying value in medical training, and specifically human dissection, before. A Maori and Pacific Island student blessing is still held in addition to the orientation. Two Maori students participating in this research attended the blessing.

> I went to the blessing thing but that's not anything to do with me personally, its more to do with my grandmother…she might ask if there is a blessing and I go 'Yes I went' – not anything to do with me personally. I just went along and to support my friends who are MAPAS [*Maori and Pacific Island Admission Scheme entrants*] (Vicky, 1).

Another Maori student, Chris, notes similar reasons for attending the blessing. Chris and Vicky deny their own personal need to attend the blessing, claiming that they attend for their families. This denial may reflect the students' 'detached concern' from the emotional aspects of human dissection (Fox, 1989). However, they are still acknowledging the spiritual or religious aspect they perceive in dissecting human bodies. These students acknowledge the context of their family as important in their being involved in the events at medical school. They need to be able to answer, and satisfy, their family's enquiries. This is a sign that medical students undertake dissection and medical training not in isolation from the lay world, but bridging both the medical and lay world.

The orientation has been developed to ease students' entry into the anatomy laboratory. Students are lectured in the classroom by the anatomy lecturer who teaches in the anatomy laboratory, and also a philosopher, a psychologist, and a chaplain. The speakers uniformly encourage and justify human dissection, encouraging students to manage any adverse emotions. Students are encouraged with political, religious and advocacy arguments to undertake dissection. The process of bequesting one's body is explained to students. The anatomy lecturer

> Gave us a lecture beforehand but it is like an anatomy lecture. She says that people have donated their bodies – she ran through the donation programme – how people donate their bodies and stuff like that. In the lab she gave us another talk in the Anatomy Museum before going in and stressed the importance of not talking about it in a silly way or an inappropriate way outside of med school (Vicky, 1).

Most teaching at medical school is through lectures. Students are spoken to, and do not discuss or ask questions in the classroom. The lecture format results in a sense of formality to the orientation. Although Vicky reports being told not to talk about the laboratory in 'a silly way or an inappropriate way', in fact, students are discouraged from any talk about the anatomy laboratory outside of it. This reinforces the exclusive nature of the experience. In the lecture, the seriousness of dissection is emphasised. All students remembered 'respect' iterated throughout the orientation.

> They gave us the whole thing about treating the cadavers with respect. They talked about the fact that people have given their bodies to us and it's an honour for us (Ingrid, 1).

> She kind of said how we should consider them as our first patients and treat them with respect (Georgia, 1).

The anatomist's perspective of the deceased body as a patient focuses Georgia on the body as a carrier of disease, therefore establishing it as a medical object or medicalising the body. Unable to talk to the patient/body, see or hear signs and symptom, the student has to find the diseases of the patients for themselves. This approach parallels the pathologist whose work is to dissect the recently deceased body, and find the cause of death. The patient's experience or story will be discovered by students, through the physical findings of the dissection as in a television drama.

> Suddenly you see this typical coroner's movie type thing, like CSI [*Crime Scene Investigation*] where they unzip it and point out bits here and there (Andrew, 1).

There is a disjuncture between the reality and sobriety of seeing a naked dead body as part of medical training, versus the fascination and entertainment of a television show. The students' story continues as they enter the laboratory, and the anatomy lecturer presents a well-preserved, already dissected body of an older woman. Students do not undertake any dissection themselves, but observe the sequential display of the woman's body and internal organs. This is a significant event for the medical students.

> She [*the anatomy lecturer*] was slow and gentle and I was coping okay and then they opened the chest cavity and I'm not quite sure how it came about but one of the boys [*other students*] went from above her head, the

old lady's head and reached into her chest cavity – I was just mortified (Sarah,1)

Sarah's figurative mortification is an emotional response situated beside the literally mortified body of the old lady. The anatomist starts on the surface of the woman's body and moves steadily and increasingly into it, displaying and describing the organs. The structure and order of the human body is shown, and this is reflected throughout medical teaching. Students are invited to name structures and feel the texture of organs, therefore participating in the process. Students are learning to feel and see the human body, 'to see structure where none is obvious' (Good, 1994, p. 74). For Sarah this structure is obscured by the person of the cadaver. The fact it is a woman who is used for presentation is noted by some students.

> I remember thinking it was odd that they showed us a woman first…Maybe because everyday you see more men. Because you've seen them naked. It's less of a deal to see a naked man, or to me it is (Annie, 1).

In Medicine and in science, gender is referred to usually only when it is relevant to a gender-specific medical condition. Bodies are otherwise gender-neutral. However, medical students are yet to learn this medical approach to the body. The anatomy orientation is the first example of this attitude to gender that medical students' experience. As part of learning to see like doctors, students are learning to see the body as genderless, and not as a woman or a man. That the woman is older is not remarked upon by students, probably because of an unspoken expectation that older people die, and it will be older bodies they will see in the anatomy laboratory (see Hafferty, 1991).

Some students' responses in the orientation and in the first laboratories, relate to significant personal experiences of illness and death.

> We went in small groups in the anatomy lab with one tutor and one body. She was a little old lady and my Mum is in her 70's and I had just lost my grandmother a few years ago. I didn't see her as a dead person at all…all I could think about was her family and what she had done with her life (Sarah, 1).

Rather than being an anonymous or even dead person, Sarah connects the body in front of her with her mother, and to the living world of the person's family and life. She refers to

the body as a human referent (Hafferty, 1991) to the extent that she is incapacitated and she has to leave the laboratory temporarily. As a doctor-to-be Sarah's reactions and responses remain personal. The science of anatomy and biomedicine silences or internalises Sarah's thoughts. There is no room or space for the 'little old lady' to be seen as a person, woman or part of a family, in the anatomy laboratory. She is a cadaver and a scientific object.

During the orientation prosections are handed around.[1] The orientation focuses on the whole body, however, the prosection is only a part of it, removed from the body and very much an object of anatomy. This irony is not lost on students.

> It was quite weird because the first thing we did, we are given a plastinated section of lung and we hadn't seen anything like that before either. I remember Rebecca saying something about how some medical schools choose to give you things cut up into pieces and they had chosen not to do that to show you the whole body in its entirety. The first thing that we actually did see was a bit of someone (Connie, 1).

There is no context for the prosection; no gender, age or person associated with it. The prosection is truly an object to be seen, touched, and examined. From a learning perspective, prosections are clear models of body parts that aid learning. The overt message to the students in the orientation is the value, or importance of seeing the whole body, but this conflicted with students seeing and handling prosections, showing the priority to be learning, and visualisation of the human body.

In the final part of the orientation, students are introduced to the anatomy study area comprised of models, some made in the Department of Anatomy and some purchased from professional model companies. Students see skeletons, models or sections of the body and organs. The models can be picked up, handled and taken to pieces like three-dimensional jigsaw puzzles. The inner structures are revealed and visualised. The order of the human body is seen – muscles, bones, nerves, arteries, veins. These pieces are similar to the prosections seen in the laboratory and allow the student to learn anatomy without the body

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[1] Prosections are pieces of body that have been carefully dissected and specially preserved. Once treated the preserved objects require no special handling precautions such as gloves. The prosection is used to demonstrate a clear example of some aspect of that section of the body – tendons, muscles of the hand, the structure of the lungs et cetera. Prosections are used as teaching objects because they are real and provide a three-dimensional construction of part of the body. At the same time they are a part of a body; transected from the body.

and the person. What is obscured in the cadaver is seen clearly in a model. Perception is enhanced through the artificial clarity of the model. The psychoemotional aspects of dissection that are addressed in the orientation quickly diminish in importance for most students once they are engrossed in the work of learning anatomy.

Beginning Dissection

Approaching the Body

While the orientation is challenging for some students, the few students in the study who do not attend the orientation and enter the anatomy laboratory with no formal preparation, describe a much larger or delayed adjustment than those who attend the orientation.

> I came in on the second one, so everyone had been through and done the whole talk thing…I said 'I'll be fine' because I didn't think it will be that big a deal. I just walked in and there were all these bags on the table. It's like you couldn't see anything but I just knew what was in the bags and I was, oh shit and I just had to turn around and walk out again (Trish, 1)

> My cousin had just died. She had lung cancer and she had just died. I came from her funeral and she was at home in a coffin and I'd been around there for about a week when she was dead. I came up here to my first anatomy lab and it was like, 'oh shit' (David, 1).

Both David and Trish expected to enter the laboratory without any difficulty, but both are taken aback. The student, who has had an experience of death or human dissection prior to human dissection at medical school, is no less apprehensive at entering the laboratory (Lella and Pawluch, 1988). Hafferty (1991) also notes that students who have previously had contact with dead and dying patients, through work experience and not personal experience, are more likely to have increased anxiety associated with such contact in their medical training. Through the orientation, the other students have been introduced to the cadaver, being told and shown how to act and respond. Trish and David have not learnt this yet, and so respond on the basis of their feelings and previous experiences.

Students' personal experiences with death are sensitive and sad in nature and this is different to students' experiences in the anatomy laboratory, where dead people 'are just bodies.' This sentiment is repeated by others to a lesser extent.

It was seeing this thing with absolutely no spirit and no life in it, was just
weird. Not hard or gross, just weird (Tessa, 1)

To Tessa the body is not a person. The lack of life renders the body an object. The body sits in some transitional place between person and medical object. Even Tessa, apparently comfortable and able to justify the task, shows that by considering how to justify dissection, she finds it challenging.

It was fine – just another human being, that's my philosophy. I'm not a religious person but basically I'm more like a Buddhist…So I think…it's just like luggage – the soul comes in…Yes, think it was luggage and the most important thing is your thought, so as long as you show your respect it is fine (Nick,1).

I also remember thinking a lot about what we are doing there, wasn't really people. Sure people's bodies and stuff are certainly an important part of them, but you could tell that it wasn't a person anymore and that everything we were doing was being respectful and it was in respect of what was, not what actually was there, or what once was. It was the life that past, rather than the life which was there, because there was nothing there anymore. It was just a shell (Connie, 1).

Both Nick and Connie note the absence of the person from the body, and this allows them to reduce the body to a 'shell' or 'luggage'. This parallels Hafferty's biological referent attitude to the body, where students depersonalise the body, treating it as a scientific object. For them the dead body is not the same as a person. As Connie notes, bodies are part of who people are, but without the person the body is an object. Andrew uses another justification to dissect the body:

You just had to think, well she's donated herself for us to learn and this
was all part of it. You had to get on and do it (Andrew, 1).

Whatever reticence Andrew may have towards dissection, he 'gets on with it' as if there is no choice in the matter. This reflects the attitude of the speakers in the orientation that dissection is not optional for medical students. Students are expected to do it, and self-donation with family consent justifies learning from the body.

Anatomical dissection is a complex task. Students are faced with the 'paradoxical demands of technical science and human compassion' (Gustavson, 1988). There is an academic requirement to learn the anatomy of the human body, and skill in dissecting is necessary, as

well as the ability to work in a group. In addition, the personal as well as sometimes spiritual element of facing a dead body (often for the first time) must be dealt with. The task of dissecting depends on the dissecting skills of the student, and the nature of the body being dissected.

> I find it quite hard to peel through the skin and fascia and try to preserve the muscle – I think it's pretty hard (Nick, 1).

Students uncover and discover structures and relationships within the body. This is often difficult. It is not simply a matter of following a series of instructions, with a tray of test tubes and a selection of chemicals as in a biochemistry laboratory and documenting the results. It is hard for the student to see what is in front of them for the first time, and it is like nothing they have seen before (Becker et al., 1961). Students have to learn to see what they are looking at (Good, 1994), while they learn names, structures and relationships of the body. Students note that some bodies are harder to dissect than others due to the nature of the bodies, and the preserving processes. Colours tend to be homogenous in some bodies, and individual variation of the bodies renders the appearance of bodies different to textbooks and models. The focus is on the work and task at hand – learning anatomy. 'With practice, however, the intricate structure of the human body became manifest' (Good, 1994, p. 74). This 'intricate structure' demonstrates to students the organisation and orderliness of the human body, and Medicine. Students learn that with practice, what was invisible in the body is made visible, and the names and relationships are learnt and understood.

Them and Us

As in other research (Good & DelVecchio Good, 1993) students in this research are aware of their unique position in doing dissection in a society where it is a restricted activity. The students in this thesis speak of knowing that dissection is out of the ordinary in normal society, and they have to adjust to this. Connie compares anatomy with war-related activities.

> It made me think about things like Nazi Germany and stuff like that, because lots of other people are doing it, they got used to it (Connie, 1).

Connie notes that what is accepted in one part of society or by one group is not necessarily right, ethical or acceptable in the rest of society. She drew parallels with some of history's most devastating events. Leah is incredulous at her actions relative to the wider world.

> And I remember after the first anatomy lab walking home and I just thought to myself you know as I was walking past people 'Do you know what I've done?' You know like 'Do you know what I've just done? Isn't it bizarre?' (Leah, 1).

> I was like, 'oh god we're going to stick a knife into someone' (Annie, 1).

Leah and Annie take their laboratory experiences and have difficulty in rationalising their actions. They can see how unacceptable their actions are beyond the laboratory. This comparison happens in spite of the orientation, where professors cite legal statutes, and argue moral grounds for students undertaking human dissection.

> People sawing open skulls and thing like that. It's just so weird. I mean you're doing something which is completely illegal to anyone else, you know? (Leah, 1).

> Third year was when we are doing head and neck; you didn't have any introduction again. We went into our body and I saw the head was cut off and I was nearly sick and I had to run out (Sarah, 1).

In their third year students re-enter the anatomy laboratory to dissect the head and neck of the bodies without any orientation, and there is a repetition of the shocked response in second year. This kind of shocked response is not unique to medical students as sociologists observing their first anatomy laboratories have described similar responses to these students (Hafferty, 1991).

Hughes (1958) notes that with some professions and occupations there is a 'guilty knowledge' associated. He refers to it as 'a way of looking at things different *[sic]* from that of most people and potentially shocking to the lay mind' (Hughes, 1958, p. 81). Students' reactions to anatomy reflect this concept and so imply their shift into the medical profession. This is the first of the students' experiences, with privileged knowledge that is limited to the medical profession and separates students from the lay world.

> There were people outside medical school who have heard that the medical students spent time in cadaver laboratories and they just think,

'oh my goodness, how on earth do you ever do that'. At that time, I just thought it didn't faze me that much at all (Andrew, 1).

The separation here is between those who can enter the cadaver laboratory, and those who cannot. The limitation is not through the legal statutes and Department of Anatomy limiting access. It is the personal fortitude or character of the individual to 'do that.' Andrew is faced with the contrast between not being perturbed, and others who find it unimaginable. For some students being part of a group (of medical students) eases the shift into the anatomy laboratory; it isn't something to be done on your own. A consequence of this is that being with non-medical friends highlights differences, and reminds students of the discomfort associated with human dissection.

> Talking to my friends who had nothing to do with med, they are like 'Ooo so you've been cutting into a dead body' and they're the only people who made me feel awkward about it. They don't understand it. They can't imagine it. They say, 'How many bodies are there around you?' and you say, 'Thirty', or whatever and they go, 'Oh yuck'. They're the only people that made me seem to feel awkward about it, because everyone else is in the same boat (Annie, 1).

Annie notes she felt 'quite cool' as in good, having done her first dissection. Despite the orientation initiating her into the laboratory, and her own apparent comfort with dissection, she then experiences doubt or conflict because of lay friends' reactions. Lella & Pawluch (1988) note students' similar feelings at being separated from lay friends by having undertaken dissection. The students have now crossed the threshold of the anatomy laboratory, and stand apart from non-medical friends.

Belonging to a medical student group is never offered by students as an advantage in doing dissection, but it is implied in that socialising with non-medical 'others' reminds Annie of how different she now is. Students don't see just one dead body, but many dead bodies, and then they dissect them. Even if medical students feel comfortable with dissection, their non-medical peers remind them of the other view – that it is not without discomfort; for some, it is 'yuck'.

There is another wider impact of dissection that is rarely addressed in the literature, perhaps because of the observational approach of most previous research.

> You know more than me it was more my mother who had trouble. She didn't tell me this while I was actually doing dissection. She told me much later on, towards the end of the year that she actually didn't eat meat for six months because the thought of me doing those kinds of dissections and stuff was hard for her (Ingrid, 1).

Dissection has a significant impact on Ingrid's mother. Not only is her diet altered, but she keeps this secret from her daughter. These last two quotes, and Vicky and Chris's justification for attending the Maori and Pacific Island blessing, reveal a previously unacknowledged impact of dissection, and medical education generally. Although the medical student attends medical school knowing they will undertake tasks like dissection, the family and friends of the student can also be affected. Family and friends may not be at ease with what the student does, but live with it and they may feed this back to the medical student. Through the course of everyday conversations with others', students receive information and learn of other peoples' perceptions, and this adds another layer of thought or meaning to their own personal experience. They may be reminded of the difference already between them and others, as well as the uniqueness of their actions, and they must handle the discomfort of others. The student is not training to be a doctor in social isolation; people outside of medical school act as relative points of stability, against which the medical student may see their own changes or points of difference. Within the laboratory, however, there is a hive of activity where everyone is participating in the same task. Dissection is normal in the laboratory.

Personalised Bodies

While some students become less concerned about the laboratories, the dissection of certain parts of the body provoke particular feelings of discomfort. In some instances the emotion-invoking body parts are similar to those identified by Hafferty's students (1991). Hafferty notes that some dissections remind students of the person, and not just the cadaver as an object, that is being dissected. In particular, the hands, face, and genitalia refer the student back to the body's status as a human being.

> And the hands as well were hard for me to do (Paula, 1).

> I think the most shocking thing for me was seeing the feet and the hands (Annie, 1).

> Just people's faces and just things like cutting their eyes and stuff. I didn't like that too much (Georgia, 1).

> But cutting up the eyes and things like that. They are more kind of central to who the person was (Stella, 1).

Most students find it hard to explain why these dissections have the impact they do, and Stella is particularly clear that certain parts of the body remind her of the person. Gustavson (1988) and Snelling et al. (2003) also note students' discomfort at dissecting face and hands. While the body has been objectified by dissection, certain parts of the body remind students again that this was a person (Hafferty, 1991). Some students in this thesis find other body areas disturbing.

> I remembered being freaked out when we cut into the spinal cord…Because they got out the chainsaws and went through their spine. I think it was because a friend of mine has had back surgery and I kind of imagined that (Annie, 1).

The empathy of Annie with her friend is highlighted by the use of large mechanical tools ordinarily kept for trees rather than bodies. While it may be argued that is necessary to use such tools to access the inner body, there is a tension – on one hand students are told to respect the bodies and gift of the person, and on the other hand a chainsaw is taken to the body. The chainsaw is loud, big and relatively unsophisticated when compared to the soft and pliable body of Annie's friend.

Desensitisation or Normalisation?

> I think we shifted between looking at it clinically and going 'wow' and then going, 'Oh my god they're cutting a real person'. That sort of dichotomy just flying back and forward in the first couple of labs. It was interesting to see the transition down the line as you got more and more into it and it got more and more routine for us (Ingrid, 1).

Some students change their views of dissection and the anatomy laboratory over time, with a general reduction in discomfort as others have noted (Charlton, Dovey, Jones & Blunt, 1994; Snelling et al., 2003). Ingrid can see the body 'clinically' as a medical object or medical body, and is able to learn the anatomy and science of it. The disjunction between

the two views becomes less uncomfortable for her, as she sees the scientific body and not the person.

Coombs asserts that students depersonalise and objectify the cadaver, concluding that dissection is a mechanistic not humanistic process (Coombs, 1978). Through her observations in the laboratory Fox (1989) frames students' approaches to anatomy as developing 'detached concern.' Alternatively, Gustavson (1988) acknowledges both the practical work that is required, as well as the emotional impact of dissection. On observation, the laboratory seems to become normal quite quickly – within one or two sessions. Students rapidly establish how to work in the laboratory – what to take in with them, and what to do. Noise and activity levels quickly rise as students talk, laugh and walk around looking at prosections, and each other's dissected bodies. Not all students describe being comfortable, but in the activity of the class it is harder to notice the quiet or withdrawn students. All the while, the more students dissect, the bodies look less like bodies. To the observer the anatomy laboratory seems to be a space where students work, talk, and laugh just like any other laboratory class.

Staff normalise the laboratory by continuing with their work as if it is any other laboratory. From the first day of dissection, when students enter the laboratory, it is business as usual. Students are told their task in that session and what is expected of them. There is no reference made to the orientation or to emotional responses or discomfort.

In this study as in others, students don't share their feelings with others. Students internalise their fears and feelings as doctors do, and so this is a key step from a professional socialisation perspective (Hafferty, 1991). Doctors undertake painful and unpleasant tasks on patients, and put aside any of their own anxieties to do so. Students need to put aside their own feelings, or work out some way of justifying what they do in the anatomy laboratory. Some students describe their own actions in violent terms, and this is in contrast with the caring and helping goals they had in coming to Medicine.

The normalisation or desensitisation to the laboratory is variable for students, and some never get used to it.

I didn't cry each time I went in there like I did that first time but it was very uncomfortable. Every time I see one [*a dead body*] all I can think of is how the hell his wife is feeling, I wonder how his grandchildren are feeling or husband – and the realities of what we do to them (Sarah,1).

Sarah remains distressed and uncomfortable in the laboratory, and only opens and closes the bag around the body. She doesn't touch the body, but despite her continuing discomfort she still attends the laboratory. Her sense of the person is the same as Hafferty's human referent (Hafferty, 1991). Sarah is unable to see the body as a medical object, and to take it apart. As Hafferty notes, human dissection can involves complex reactions and rationalisations by medical students, signifying a less than easy shift into the anatomy laboratory. In contrast, David accepts dissection from the moment that the body is drawn on in preparation for dissecting.

Right from the moment they drew on her, you're pretty detached. It all became like butchery after a while, and like you are cutting up meat (David, 1).

Drawing on dead bodies is not normal, and is the start of something out of the ordinary – the dehumanising of the body. Even with this less invasive act of drawing, David detaches from the body. While there is a sense that treating a human body like that of an animal at the butchers is dehumanising, there is symmetry to it. The butcher takes the dead animal and cuts it up. Each cut is purposeful and skilled. The student takes the dead body – of a human and cuts it up purposefully and hopefully, skilfully. The body's progressive disfigurement eases some students' task, as the body becomes less like a person as dissection proceeds.

It got more and more routine for us. We'd talk about our weekends, make jokes, we'd talk about other things and go, 'Oh look at that', and that kind of thing. I'm amazed by how fast we were desensitised to it. We got over the whole thought of actually cutting into somebody else (Ingrid, 1).

The feeling changed and by the end of the year they were all in absolute pieces everywhere so they weren't really a person anymore anyway. That sounds really bad but that's how it was (Marie, 1).

Dissecting, and the laboratory in general, appear to become more routine and normal to Ingrid, and this appears so on observation of the laboratory. Students get on with their work, and casually chat as in any other laboratory. Lella and Pawluch (1988) also note

most students' ability to work and dissect despite initial apprehensions. However, as Hafferty notes, human dissection involves complex reactions and rationalisations by medical students, signifying a less than easy shift into the anatomy laboratory.

Some students accept dissecting easily, seeing the body less as a person and more as something to be learned from. Students in this study are able to shift between seeing it as normal work, and the apparent violence of the work.

> It was really surreal. It's hard to explain it. We'd just walk in there and sometimes you'd think there's forty dead bodies and everyone, like little girls are just in there chopping away and you just walk in there and you just stop thinking about doing it. You just hack away and then you feel really bad when you have a good time' (David, 1).

While there were twenty bodies in the laboratory, David's exaggeration of the number of bodies shows the overwhelming sense of death present in the laboratory. Describing dissecting as 'hacking' and 'chopping' sounds violent and purposeless, and contrasts with the skill and purpose which will be expected of students in dissecting a human body, and in their future work as doctors. David feels guilty because he is having a good time, while apparently defiling the respected body. Hafferty (1991) suggests this language of violence and destruction reflects the destruction and dehumanising process of dissection. He notes students' lack of scientific language in this area, and this is evident in this research. One interpretation is that this lack of scientific language, and the dominance of violent language, reflects students' ongoing discomfort with dissection, despite the apparent need to have participated in dissection to become a doctor.

The advantage of interviewing students about their experiences of dissection versus only participant observation of students at work in the laboratory is seen here.

> I was worried about the faces one [*laboratory*] being disturbing, so I did all the skin on the face, which was the one I is most worried about. I have a tendency, I think, when I think it's going to bother me, to try and just push myself into doing something (Connie, 1).

On observation, Connie, appears as if she has no difficulty in dissecting the face. However, as Connie notes, her actions help her manage her discomfort. This challenges assumptions made through simple observation, and questions students' motives for their actions. Becker

et al. (1961) reports students' apparent ease in undertaking dissection when the students are observed or talked to in public. Hafferty disagrees.

> I believe such reports reflect the version of lab represented…to outsiders rather than the reality of the lab as it is directly experienced by medical students (Hafferty, 1991, p. 101).

Students' experiences of the anatomy laboratory and human dissection in this study support Hafferty's findings, and challenge Becker et al.'s (1961) perception that dissection is unproblematic for students.

Whether students become desensitised or normalise their experiences in the anatomy laboratory is probably a moot point. Most students note feeling more at ease in the anatomy laboratory, over time and with experience. This increasing ease occurs at the same time as the bodies become more mutilated, and less like a real person. The process of depersonalising the body through dissection may contribute to students' shift. Some students never become more comfortable, and many students return to unease when faced with dissecting the head and face of the body. Whether comfortable or not, most students undertake dissection without question. Feelings are managed and masked for the sake of learning the science of Medicine.

Conclusion

In this chapter, I have presented anatomy learning through human dissection as one of medical students' first significant and important transitions towards becoming a doctor. Students are given the opportunity to see and learn about the human body in a way that is denied the rest of society. As Lella and Pawluch (1988) note, students came to medical school aware that this is part of their training but are still apprehensive. Students set aside any apprehensions to undertake the task, but often remain cognisant of the violation they perpetrate.

Hafferty notes the scientific object and human-person dichotomy in students' reflections on anatomical dissection (1991). This dichotomy mirrors the biomedical model – biopsychosocial model dichotomy. Department of Anatomy staff equally acknowledge this dichotomy by providing the orientation. The orientation provides a staged and progressive

introduction into dissection, acknowledging staff awareness of the emotional challenge that entering the laboratory holds for some students. There is nowhere else in medical training that utilises such a purposeful, multidisciplinary approach to students entering a new stage of training. The orientation enhances the importance and sense of occasion for students.

Once in the laboratory, the orientation fades and the work begins. The scientific object of the body takes precedence once students are in the laboratory to dissect. This respected gift of the body is duly dismembered and 'butchered', reducing it to bit and pieces. As dissection proceeds, the focus is not the body as a whole, but the relatively small or limited part of the body to be dissected. Cutting and separating layers of tissues, dissecting down, following nerves and arteries, finding the pieces and forming a real and three-dimensional picture of anatomy is the work. Students work together as a group to complete their tasks but some may limit their involvement. However, it is as individuals that they consider the nature of their work, what the body is to them, their emotional responses and deal with the awkward moments with outsiders of family and friends. Students give the appearance of detached concern while internalising their reactions and thoughts.

Medical students' own experiences with death are entwined with their reactions to the laboratory. Some students note the tension in taking their experiences of the laboratory into the outside world, and knowing that what they have done is extraordinary. Although students are instructed not to talk about the laboratory, people know about it and will comment on it to the medical students. The reactions of family and friends can problematise what some students accept. This distances students from their non-medical social circles emphasising the transitional or liminal stage of the rites de passage in becoming a doctor (Van Gennep, 1907).

In this chapter as in other research, the appearance of students actively working belies the experiences of students. Students consider what the body is to them – luggage, a shell, a member of a grieving family, or a body to be dissected, as the person wished in their self-donation. They do this individually and so the meaning of dissection to each student remains personal, never being developed within a clinical framework. The task of discovering the structure of the human body takes precedence as part of the formal curriculum, and so science and its learning dominates over students' experiences, reactions and feelings. This theme of activity or doing will recur in the following chapters.

Entering the anatomy laboratory is in itself a privilege; it is the first privilege medical students are entitled to by being medical students, and it separates them from other students. These issues are paralleled when students enter the clinical environment and encounter patients. However, before students enter the clinical environment, they begin to see and undertake aspects of medical work in the classroom in the preclinical years.

Chapter 5

Early Clinical Experiences

Introduction

> It's been good. I think it's the best bit…when they have a patient and you
> start from the start and you go through everything, how to do it properly.
> How to take a history and how to go about an investigation, like take
> bloods before you do something a bit more tricky. It's just good
> investigating…It's enjoyable, it's fun to do and it's quite good learning
> and the patients have been good as well. You come in and it's like real
> life. You can get a feel for what their problem is and how it affects them
> (Trish, 1).

While human dissection may define the medical student as a medical student through the experience of dissection, there are other experiences in the early years that teach students about the work of the doctor. These clinical experiences involve direct student contact with patients, or involve the medical student to a limited extent in the work of a doctor. The early clinical experiences include: class-based clinical sessions, practical sessions in the Clinical Skills Resource Centre, and a Clinical Methods course. These early clinical experiences shift students into the clinical environment; students initially observe doctors talking with patients and then learn to elicit the patient case history themselves. Students also learn physical examination and procedural skills. The clinical sessions represent the start of doctor-like work for the medical students at the University of Auckland.

In this chapter, I will explore the students' clinical experiences in the preclinical years with respect to medical students' professional socialisation. Much of what is taught in the preclinical years reinforces the disease-based, biomedical approach to Medicine. Students are taught to focus on eliciting the signs and symptoms of patients' diseases and observe how doctors apply the science of disease to patients. The class-based sessions and the clinical skills sessions are based in the classroom. The Clinical Methods course is held in the hospital, an afternoon a week, in the last semester of third year. There are common aspects across the three types of early clinical experiences. Students observe and learn aspects of doctors' work – the doctor-patient interaction. They start to interact with patients

and perform medical examinations, and so are learning to act as doctors. Students' early clinical experiences are important to this research because they are their first introduction to clinical experience and the work of doctors, despite being embedded in the classroom- and laboratory-based preclinical years.

There is an element of safety for both patients and students across all of these sessions. Patients are not directly exposed to novices, and students are not at risk of harming others, because students learn and practice under close supervision of doctors. In the classroom, a teacher who is usually a doctor is present. Students are taught clinical examination skills and then practice on each other in the Clinical Skills Resource Centre with a doctor present as a tutor. During the Clinical Methods course, students begin to examine patients who are inpatients in the hospital. Doctors often select relatively well patients for students to work with during these sessions. Although the clinical settings and set-ups are artificial, students appreciate the opportunity to see, think and act clinically.

Compared to the didactic teaching that dominates in the preclinical years, students undertake more apprentice-style learning in these first clinical experiences, observing the doctor-patient interaction and seeing how Medicine is practiced. Initially watching doctors in the classroom, at the end of the third year students move into the hospital for teaching. Being taught in the clinical environment provides a different background or context for student learning. This background is the students' future learning and workplace. I will show that students' early clinical experiences are an important aspect in their transition into fourth year, when students are in the clinical environment for most of the year.

Clinical Experience in the Classroom

In the second and third years of medical school, preclinical science content dominates the curriculum, and the class-based clinical sessions that are held most weeks are a novel change for medical students. They are novel because they are interactive and involve patients. Students see a doctor introduce a patient, and hear the patient tell their story or answer questions asked by the doctor or students. The doctor demonstrates elements of the physical examination to the class. The patient's signs and symptoms are related to the basic or preclinical science covered in lectures. Students begin to see how the systems-based

science teaching of the body is applied to the patient, and how the patient's signs and symptoms are interpreted though biological science. As Stella notes, these sessions are different to other classes.

> The main thing that struck me is the difference in the class, everyone is so attentive and you know like on their best behaviour (Stella, 1).

The ambience of the classroom is also observed to differ from other classes, and the clinical sessions are consistently well attended. Shuval describes similar sessions at medical schools in Israel, although she noted poor student attendance. This difference may represent the teachers' commitment at the University of Auckland medical school compared to the 'experimental' nature noted by Shuval (1980). Students at the medical school are presented to the patient as medical students and prospective doctors, and the students are observed to attend to the patient and doctor with a level of professionalism and concentration rarely otherwise seen in these years. Students see how to talk to and about patients, and are shown the relationship of signs and symptoms to science.

This style of teaching has been paralleled with dramatic theatre (Atkinson, 1981). The doctor and patient act out a drama or tell a story of the patient's disease or illness. Students sit as an audience with the actors performing on the stage. As 'stooges', students contribute to the drama being played with the patient and their disease, by asking questions and being amazed (Atkinson, 1981). Students observe the story unfolding, waiting to see what will happen next, and demonstrate their appreciation through applause. This first taste of clinical experience enlivens and activates the learning of Medicine for the students. This is explained by students in this thesis.

> It's just a practical way of learning as well. You just hear the symptoms and stuff that they come with and it sticks a bit better than if you just read it (Trish, 1).

> The clinical sessions and lectures with the patients coming in are really good because…I get bogged down with all the sciences stuff and lose sight of where I am actually going and so the clinical sessions bring it back into a real situation. It's a real person. It's not actually a science abstract thing happening somewhere (Stella, 1).

These clinical sessions are identified by Stella and Trish as important, because they show the relevance of science to medical practice. In the clinical sessions, teachers draw

relationships between the symptoms and the background science of the disease of the patient in front of the class. To students, patients make the science real and alive through their personal experience of the disease. Students medicalise patients through their diseases. While sociologists refer to the 'objectification' of the patient by students and doctors (Conrad, 1992; Waitzkin, 1989), I will refer to 'medicalisation'. Objectification obfuscates the purpose to medical communication which is to present the patient through their medical problem. Medicalisation acknowledges that patients are remembered because of their diseases. Medicalisation and not objectification will be used in this thesis. Students remember the patient because of the patients' signs, symptoms and diseases, and therefore, medicalise patients.

Students are not only learning about a textbook condition, they are learning what it is like to live with the signs and symptoms of disease. The real live patient presents the opportunity for students to see embodied illness, and patients' stories bring diseases to life for the student. Whereas a paper-based case requires students to imagine what it is like for the patient, the real patient leaves little to the imagination.

> They know their stuff better than we do; their pathology et cetera and they are very good at expressing themselves. You can put a face to a pathology and it's a lot easier to assimilate that knowledge and recall it (Jenny, 1).

> Actually being able to see, especially in second year because it is all theoretical and we aren't really getting a feel of somebody living with that certain condition that impacted on their life and how they feel about it and how it makes them see themselves. I think we've learnt something from every session and not so much facts or anything but you just look at it in different ways, from the patient's perspective (Ingrid, 1).

Because patients are well practiced in telling their medical story (one of the reasons they are asked to participate in the clinical sessions), they give medically relevant information. Patients are assisted to do this through the doctor's directed questioning. Not only do teachers show the importance of the science, and the biomedical approach, but these 'primed patients' work to reinforce the science- and pathology-oriented approach of Medicine. However, students are also seeing the patient as a person, and are learning from the patient information that may be useful, or important in their prospective work as a doctor. 'Putting a face to a pathology' is humanising a disease and disease process, but also implied is that the student remembers the patient to aid memory of the disease and the

underlying science. Diseases are associated with people and so students are 'personalising' diseases.

As well as the patient being a learning opportunity for the student, the doctors presenting the patients also provide the students with examples of how doctors regard patients.

> Some of them really let the patient do all the talking and just kind of nod every now and then and some of them are quite directive in sort of the things they want to know (Stella,1).

> Just the fact they gave the patient a chance to speak and acknowledged what they are feeling, just kind of validated them (Georgia, 1).

Stella and Georgia identify different styles of communication taken by different clinicians, as they observe the doctor-patient interaction. The directive approach sees the doctor managing the patient's story in a way that the doctor wants. This is an approach that supports the biomedical model because the doctor focuses on deriving the patient's diagnosis. The alternative biopsychosocial approach, where the doctor 'nods every now and then', allows the patient to direct their own story. The patient's feelings are acknowledged by the doctor who does not direct the patient to discuss their illness. This listening approach reflects the approach students learn when they are taught communication skills. There is an ambiguity between what students are formally taught, and what they see happening with respect to communication skills reflecting a space between the formal curriculum and the informal curriculum. Despite this ambiguity, Stella justifies the two different approaches to doctor-patient communication. Students are observing the doctors and their ways of being with patients, as well as focussing on the experience of the patient.

> Well some patients had the kind of personality where they really enjoyed getting up and telling their story in front of the class. Some other patients, I didn't feel they quite wanted to do it and are quite reserved and quite embarrassed (David, 1).

> She had liver failure and is she saying that she is really embarrassed about her skin being so yellow. She is obviously quite upset about it and he made her like stick her hands under the projector to show everyone what it is like...I thought it is horrible (Georgia, 1).

Students are sympathetic to the patient's comfort or discomfort at being in front of the class. It is clear to students, that the patient has no choice but to comply with the doctor who is responsible for the patient's presence in the class. Students perceive that only some

patients may be comfortable with this public display-style of teaching. Chris expresses concern at how patients are treated.

> It seems to me that they are treated like they're some sort of specimens and they're not really introduced…right at the start. I think the students feel it as well…Sometimes you see the doctors moving around patients and they are not comfortable...No one explains anything, to the patients either, when they're talking about conditions (Chris, 1).

As well as communication differences between doctors, students pick up on several other facets of the doctor-patient relationship. Students observe the elicitation of the medical history, and how doctors can treat patients. These role-modelling opportunities by doctors are not necessarily positive but, as Shuval (1980) notes, students are able to differentiate between good and bad role models.

In the clinical sessions in this study, the patient is sick and in a strange environment, placed at the front of the classroom. The teacher has the knowledge and the power to treat the patient, and is comfortable in front of the class. The teacher knows what is happening and when it will happen; they are in control. Chris's use of the word 'specimen' implies a removed, impersonal, objectifying relationship between the patient and the doctor; the patient as an object under a microscope. The patient needed to be introduced by the doctor, and involved in the class. It is unclear to Chris and from the interviews, what the doctor-patient interaction is outside of the sessions. It is also unclear what sort of briefing the patient is given by the doctor. Therefore, students can only judge the doctor-patient relationship on what occurs in front of them. On some occasions the patient is not introduced, and the doctor appears uncomfortable with the patient, who is apparently told nothing about their disease or what is happening.

These sessions provide students with a sense of becoming a doctor that students in earlier students found difficult to grasp at this relatively early stage of their medical education (Becker et al., 1961). The doctor-patient relationship is central to the practice of Medicine, and students are exposed to different doctors' approaches to the doctor-patient relationship. In contrast to this study, Conrad (1988) notes in a review of four medical autobiographies that students were not necessarily taught how to talk to patients. Students in this thesis are taught communication skills, and consider how the doctor talks to the patient. Students see

that patients can either be 'validated' or treated like 'specimens' being used to demonstrate pathology and disease.

This tension in the doctor-patient relationship in Medicine is central to socialisation into Medicine, because the doctor-patient relationship is typified by an imbalance of power between doctor and patient (Waitzkin, 1989), and involves a complex interaction between people (Ong, de Haes, Hoos, & Lammes, 1995). The traditional perspective of doctors controlling patients' participation in the consultation has been challenged somewhat with the introduction of communication skills teaching at the University of Auckland medical school (Buchanan, 1991). There is acknowledgement in the literature that a good relationship between patient and doctor is important, and that 'being with' a patient is sometimes more important than tests and medication (Ong et al., 1995; Western & Lipkin, 1989). However, students in this thesis identify different ways doctors communicate with, and treat patients, noting the ambiguity that exists.

These clinical sessions are artificial and contrived compared to learning in the clinical environment. The patients chosen to participate clearly demonstrate signs and symptoms of a disease relevant to the current teaching. The doctor manages the class interaction, and keeps the patient's story relevant to the students. The students sit in a group separate and distant from the patient, and so no one-on-one interaction can occur. Students are observers more than participants, and see patients both as people and as an embodiment of a disease relevant to their science learning. A student might ask a question, but no relationship develops between the student and the patient, and in fact, the student can opt not to contribute and actively participate. The patient is effectively 'passive, acting as interesting teaching 'material', often no more than a medium through which the teacher teaches' (Spencer, et al., 2001, p. 851). While students in this study are unable to have personal interaction with the patients, students find the sessions interesting and motivating. Students empathise with the patient as they observe the doctor-patient relationship.

The Clinical Skills Resource Centre

In the Clinical Skills Resource Centre sessions, students begin to learn physical examinations upon each other. They learn the physical examination in fragmented pieces, learning how to handle equipment and bodies, as they will as doctors. Tutors provide

observation and feedback to students in an environment that is 'safe' for students and patients (Wearn & Bhoopatkar, 2005). The sessions are less frequent than the class-based session; students have four in each of second and third year. The body as a vehicle of disease must be examined to elicit the signs of biology, and to consider the physical presentation of the pathology of disease. Students consider the anatomy and physiology of the body in relation to physical examination of the patient, gaining dexterity and manual skills.

The Clinical Skills Resource Centre sessions are the only medical school-based opportunity students have to do things, or perform tasks like a doctor. Stella describes the sessions as follows.

> We had some sessions…based on clinical problems and we went around and learnt about examinations that you do for that particular problem and what the symptoms and signs mean. It's been really been good to learn how to use like the blood pressure things and stethoscopes and stuff because it's like its basic stuff but you don't get taught it anywhere else so it's been good (Stella,1).

Stella describes these practical sessions as making her feel that she is becoming a doctor, because she is actively participating and doing things that doctors do. She knows she will come to do these tasks on true patients. Stella's reference to 'what the symptoms and signs mean', is taking both the patient's reporting of illness and the doctor's elicitation of signs of disease, and making medical sense of what is relevant from a medical perspective.

Students work in small groups, learning facets of the physical examination upon each other. The student acts as doctor and patient in the clinical skills sessions. Sarah also sees that there is relationship between what she learns in the Clinical Skills Resource Centre and becoming a doctor.

> Every Friday [*Clinical Methods teaching*] I think that I am doing the right thing but Monday to Thursday I don't know. It's such a long haul and just being in the lectures is so unstimulating – very much down to the cellular level which I can't think you are ever going to need. I get the 'is it all worth it every day except Friday afternoon and actually after James's session [*Clinical Skills Resource Centre*] as well. I get quite excited by that (Sarah, 1).

The 'cellular level' seems removed from the patient and from medical practice while the Clinical Skills Resource Centre sessions relate directly to patients and medical work, and Sarah can foresee the usefulness of what she learns there. While the participation aspect of the Clinical Skills Resource Centre differs to the most of the class-based preclinical work, these sessions still support the biomedical model. Students learn to elicit the signs and symptoms of disease that represent the biology of the body or the presentation of disease.

During the Clinical Skills Resource Centre sessions, students learn how to use medical equipment such as the sphygmomanometer and stethoscope. Students perceive this equipment as basic, but essential to being a doctor.

> You kind of knew a little bit and you had done a few things here, so you had a few foundations to go on. That made things a bit easier, rather than turning up to a patient and going, how do I take blood pressure. You'd done it before and you knew which hand to hold the stethoscope in (Connie, 1).

The ability to use doctor's equipment is important in apprentice-style learning, and especially legitimate peripheral participation (Lave & Wenger, 1991). Doctors' equipment and the use of 'medical' technologies give students access to participation in Medicine, through manipulating and using the stethoscope, and interpreting the medical information accessed through its use. Initially, the use of the stethoscope is conscious and students focus on how to use it. However, as students learn how to use it, they can focus not on the stethoscope as a medical artefact, but on what they hear through it. The stethoscope has a mediating function, giving students access to the audible sounds of disease. The advantage of learning in the Clinical Skills Resource Centre is that students are able to develop some dexterity with equipment with close tutoring, while not at risk of harm to patients. In terms of professional socialisation, students are learning to 'do' like a doctor to measure blood pressure, take a history, and also to use their senses like a doctor. Students observe, feel, and hear, seeking the doctor's perspective of the body. Students also begin to understand the body, as it is used for the physical examination.

Clinical Methods: Learning in the hospital

In the second semester of third year, students go on to the hospital wards for a half day a week, for ten weeks. This is an introductory course, giving students direct contact with patients, and to a lesser degree, orienting students to hospitals. Becker et al. (1961) covered the equivalent physical diagnosis course of his students, in a mere paragraph whilst reporting that students' first contact with patients 'means a great deal to students for it is their first actual participation in the core drama of Medicine' (Becker et al., 1961, p. 186). Given this statement, the lack of examination of this period of students' education is surprising, as a more comprehensive examination of this time in medical students' professional socialisation might have been expected given it is 'core' to medical student learning and professional socialisation.

To walk onto the wards for the first time as a medical student is a significant moment, because students are entering the clinical environment as prospective doctors. Students are told that 'dress must be neat and tidy' and men should wear ties (2003 Phase 2 Guidebook, 2003). Students should wear name badges at all times. They wear or carry stethoscopes as doctors do, and therefore are identifiable as members of the medical profession. The wards represent students' future work environment, and are a new place of learning. Internationally, introductory courses into the clinical environment are not unusual for medical students, although they tend to be shorter, than the University of Auckland medical school Clinical Methods course (Moss et al., 1987). These courses have been shown to encourage better history and examination techniques, and communication skills, than when students are taught these skills solely within clinical attachments (Güldal, Özçakar, Yeniçeri, Dontlu, & Ulusel, 2005).

While students' time on the ward is minimal compared to that in successive years (30 weeks in the following year), it is an opportunity for students to start understanding doctors' work. Both clinical methods and the earlier clinical experiences are relatively fragmented and distanced from direct patient contact. However, students begin to see a fuller picture of the clinical environment by being in it. This is the beginning of apprentice-style learning, or situated learning through legitimate peripheral participation (Lave & Wenger, 1991).

Learning in the clinical environment entails the student learning about the processes and relationships of Medicine, while gaining experience in medical practice through their participation. This reflects the legitimate peripheral participation approach to learning in the workplace. The student who learns in the work environment learns more than academic knowledge required for examinations. They belong to a community of learning and know they are working towards becoming a fully-fledged worker. The student shares an understanding with other medical students and doctors about their purpose. Medical students are legitimate members of the hospital. They have legitimate access through their preclinical studies and membership to the medical student group. They dress as doctors, walk with doctors, and effectively speak as doctors. Consultants and senior registrars teach students in public hospital spaces, implying to other staff that the students have a right to be there. The teaching is not always held in a place that suits the other staff.

> We had to have our class in the corridor and then like all the nurses are going 'You better move away from here because this is our tearoom. We need to get in and out' (Leah, 1).

While students are entitled to be on the wards, they do not officially belong on the wards. They do not belong with or on medical teams, as they will in later years. Teaching is not the priority in the hospital, and so occurs where ever there is time and space. Students not only learn about the case history, but also learn informally about the workplace – hospital staff protect their own space, and this space is not available to students.

On the wards, students receive small group tutorials on the patient history and physical examination from doctors, and have the opportunity to talk to and examine patients, either on their own or in pairs.

> Our guy took us into the respiratory ward…because that is where he's based and he did a history. We watched and asked a few questions and everyone gathered back up after about an hour and they taught us about exactly how you should take a history…then the next week we'd take a history and then we would go and have a lecture on vital signs examination and then we start with that (Tessa,1).

The doctor takes a tutorial with the students, and each student then goes to see a patient to practice what they have just been taught. The following week, the students review the previous week's work with the doctor, and have another tutorial before seeing another

patient. The patient's illness does not strongly feature at this time as students are learning not about disease, but about how to elicit patient case history and perform a physical examination. It is through these techniques that students will later access the disease and its signs and symptoms.

The clinical methods sessions happen while students still have the class-based sessions described earlier and they are completing the majority of their preclinical science teaching. Jenny notes students' questions in the classroom change, once students have been in the hospital and had to do undertake their own interviews of patients:

> It's been amazing to see even in the last two to three weeks how the questions from the class have come more structured, more relevant and more like how a doctor-patient interview would proceed (Jenny, 1).

Students take their learning from the ward-based clinical methods sessions, and transfer it back into the class-based sessions. Jenny is able to identify the structure of the doctor-patient interview, and sees how quickly students shift toward this approach. Students are learning to identify what is medically important in the patient's story, and direct their questions accordingly. Their case history-taking is becoming more doctor-like.

As well as learning to interview patients, students are undertaking physical examinations. They learn practical examinations on one another in the clinical skills sessions, but the shift from peer examination to patient examination is not smooth.

> I remember the first time being told to interview this patient, or examine this patient…and having absolutely no idea what I was meant to be doing. It was like we hadn't been shown how to do this…There is something very different from practicing on each other and actually asking a patient can I pull your top up and listen to your heart and stuff like that (Connie, 1).

In the Clinical Skills Resource Centre, students can opt out of peer examination and will usually choose to examine friends (A. Wearn, personal communication, November 1, 2005). Now on the hospital wards students examine strangers as if the students are doctors, including asking patients to bare their body for examination. Students are responsible for initiating the case history and examination, without being introduced or directed by a teacher. They are required to treat the patient as a patient, and to behave like a doctor,

through focussing on the signs and symptoms of disease. Students must approach the patient's body as a doctor would do. Students are uncertain of their knowledge when they begin in the clinical environment.

> We actually went back to our patient and did an exam on him…and that was quite intimidating because she [*the Consultant*] expected us to know how to do a respiratory exam and we totally didn't. She said, 'now what would you start with' and we were like 'observation', like everyone knows (Annie, 1).

Annie is confused at this time; while being able to perform an examination on a patient, Annie is flummoxed talking through the examination to the consultant. This performance is in front of the patient, which commonly provokes anxiety for students who are often scared of showing their lack of knowledge to the patient, as well as the doctor.

These medical student-patient consultations are examples of 'cold medicine' (Atkinson, 1981). The patient in this encounter is medically stable and undergoing treatment. The medical student-patient encounter is contrived with the medical student proceeding with their history and examination, as if it is the patient's first time telling the story of their illness[2]. While this style of practice may be described as 'cold medicine' it is far more doctor-like than examining each other or simply observing others doing the history and examination, as in the class-based sessions of Clinical Skills Resource Centre course.

> We were terrified because we are worried about screwing up and getting questions that you don't know the answer to. It was just like being alone with the patient and trying to figure out what is wrong with them (Megan, 1).

This situation contrasts with the class-based sessions where students sit within the safety of the group, and have a teacher managing the process. Now each student is responsible for facing and being with the patient, and can be expected to have knowledge and expertise beyond their learning. Haas and Shaffir (1987) note that students are commonly apprehensive when they first see patients, whether students see patients the first year or several years after starting medical school. This sense of responsibility is suggested as a possible key domain defining students' development of professionalism (Hilton & Slotnick,

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[2] 'Hot medicine' is exemplified in the next chapter, and is where the patient tells their story for the first time. The doctor or medical student is responsible for eliciting the case history, performing a physical examination, and providing a differential diagnosis and management plan for the patient.

2005). Students are unable to truly act for the patient. However, this does not diminish their sense of responsibility to the patient. The student is in a position of learning, and might have to tell patients they don't know the answer to their queries. This situation is far riskier than the classroom and Megan indicates that she is taking on this responsibility, as part of becoming a doctor.

While students are directed to learning the patient case history and physical examination, this cannot actually be done without some knowledge of diseases, and how they manifest in patients. This leads to students attempting to consider the diagnosis of the disease which is, after all, what doctors do. Students try to put together signs and symptoms with diseases, based upon the information given by patients.

> It was a bit hard at the start because I didn't really know what it is about very well. I didn't really know what to ask sometimes unless I had a couple of moments where I had stop and read my red book to see where to go next. There was another problem. I was trying to build a formula in my head and I was getting too occupied thinking about what was wrong with her and I should have just worried about doing the interview properly and not try and think at all what was wrong with her, just ask everything. I was too busy trying to be smart with myself and try and work out a diagnosis as I was going. That was pretty hard (David, 1).

> You're sitting there thinking of how you're meant to do things and that you've been taught to take a history and you need to make sure you get answers in this particular way and it's almost like at first it stilts you from just being how you normally would be (Connie, 1).

Connie and David consciously learn to take the patient history, asking relevant questions and responding with further appropriate questions. However, they are also considering possible diagnoses tying together the patients' signs and symptoms. They have only elementary knowledge of all these facets, and manage each aspect simultaneously. Doctors do this automatically but, as David notes, it is hard. The application of the biomedical model to the patient is learnt through understanding diseases, and the questions to be asked of the patient. What students learn in theory in the classroom must be applied to a patient. Medical language doesn't necessarily match patient language and, as Connie notes, students must work between medical and patients' language.

The shift from novice to experienced doctor has been shown to involve a shift from returning to pathophysiological causes of symptoms to using identifying features based on

previous experience to make a diagnosis (Schmidt et al., 1990). The students in the thesis learn to identify symptoms as indicators of disease, but in the presence of the patient at this early stage, they also focus on how to communicate like a doctor. They are trying to make medical sense of the patient's information with limited experience.

An issue that is rarely addressed in medical education literature or in medical education itself is patient gender during general physical examinations. It is addressed with respect to sensitive examinations (vaginal and breast examinations, for example) during clinical skills teaching. Students are made aware of culturally-based differences in approaches to parts of body through teaching in the Practitioner Development course. However, students are very aware of gender when doing more general examinations, and report difficulty when confronted on the wards with examining women patient's cardiovascular systems. This involves the patient exposing their chest for the doctor or student to listen to the patient's heart and lungs.

> I still find it quite awkward to ask a female patient about listening to heart sounds; I found it difficult to ask (Nick, 1).
>
> The first time that we did an older lady and she had these big pendulous…breasts. That is something that we didn't know how to deal with (Connie, 1).

When Connie exposes a woman's chest, she exposes her breasts. Doctors do this *de rigueur,* and effectively ignore or work around a woman's breasts to examine her heart and lungs. Students are expected to negotiate their way around a woman's chest in a depersonalised and professional way like a doctor, when it is unlikely they have seen this done. Regardless of the gender of the student, they feel uncomfortable doing the examination because, as noted by Connie earlier, they intrude into a patient's personal space. Students are still self-conscious about bodies, and are mindful of the patient's personal space as lay people would be. In the Clinical Skills Resource Centre, students would remain clothed or men students might take off their shirts, if they felt comfortable. Students have yet to learn to ignore gender, and treat the patient's body as a depersonalised body.

As well as learning the mechanics and sensitivities of physical examination on real patients, students learn there are language sensitivities when communicating with patients.

> After you've done the first one, people sort of knew the kind of questions you'd ask with GI [*gastrointestinal*] problems and that sort of thing, like weight loss and that. I think also people are getting over things like asking about bowel motions and stuff. It used to be quite, 'How can I put this?' but now I just ask straight out and most of the patients, because they've had problems with this kind of thing, aren't worried but I think it's important to note when you're in the hospital you see that kind of thing every day, but there are people, patients that come in, that could be really uncomfortable with it (Tessa, 1).

Tessa is still conscious of the difference between medical and lay language. Tessa acknowledges that bowel function becomes 'everyday' to medical students, but not necessarily to lay people. Medical students continue to change their boundaries when talking to patients and examining them. No longer lay people, they use medical language and ask personal and private details from patients. They have to be 'intrusive' despite their own initial reservations. Their own hesitancy is indicative of the newness and discomfort they still feel.

When patients describe their signs and symptoms with medical language that students have learnt at medical school, students are impressed because their class-based learning translates to the clinical environment, and the patient. As medical students find in the class-based teaching sessions, the patient presentation of signs and symptoms reinforce their learning of diseases and symptoms.

> You hear the classical description like 'this is what they will say' and you're like 'yeah right, no one ever says that' and the guy says 'I had this real tightness in my chest' and you're like 'wow' and you say 'how many pillows are you using' and they say like 'three'. You ask 'How long they have been using them for?' and it's like three months. It was actually true. They actually do say that kind of stuff and they have crushing pain in their chest and it does move to their left arm (Megan, 1).

The patient uses the language Megan associates with textbooks and doctors' descriptions, and she relates the patient presentation of disease to her teaching. The patient centres her understanding of this condition, and reinforces medical language and diseases for Megan. As well as learning from patients, students watch and think about how doctors work.

> He asked very direct questions. As soon as he had a symptom he asked direct questions about that. There was no, how's your life, is everything alright at home, that sort of thing. That was just totally cut out of it. It was quite direct, not rude or anything (Tessa, 1).

The doctor's directness contrasts with the more socially-oriented and open history-taking Tessa has learnt in the Practitioner Development course. Tessa does not perceive the doctor as rude, justifying this approach as medically-directed. As in the class-based sessions, there is a difference between what students learn in class at medical school as part of the formal curriculum, and the practice of Medicine by some doctors. Tessa shows what is seen earlier, in that students continually observe and consider how doctors work with patients.

Students also negotiate their way around the realities of different patients in a way that doctors have to. This includes talking with 'difficult' or unwell patients.

> I think my most difficult patient was an elderly lady who had suffered a stroke and so therefore couldn't talk properly. It was very hard to understand what she was saying (Andrew, 1).

> He always changed everything he said. He was really confused and not all there mentally. He said he was in for pneumonia…First of all, his wife had rung the ambulance and then no, no it was his daughter and then it wasn't his daughter. It was a friend (Trish, 1).

These patient-based experiences contrast with those had in the class-based sessions. In the class-based sessions patients are selected by doctors because they tell clear medical stories, and the doctor directs the patient to tell medically relevant information. On the wards, patients are also chosen by the doctors for the students, but there is a greater diversity of patients with some patients being confused or having difficulty communicating. There is no doctor helping the student with eliciting the case history from the patient. The students' task is more difficult, because as well as learning how to take the patient history, they must do so with patients who don't, or can't make it easy for students. This is part of doctors' work, but makes student learning challenging.

Although only on the wards for brief periods of time students are starting to find their way around the hospital including what they have access to, for example, how to access patient notes.

> If you wanted [*patient*] notes or something like that, all you had to do was ask and you got the feeling for the first few that we were so scared of being in the way and people tripping up over us, we tended to keep to ourselves. By the end we were asking for notes and where papers were and that sort of thing, getting some confidence (Andrew, 1).

Just as students have no official place on the ward – they do not belong to a medical team and they fear being in the way, so they are unsure if they have access to patient notes. While Lave and Wenger (1991) note belonging to the work environment is important for student learning, student access to the clinical environment is not black and white. It is negotiated and learnt, as students spend more time in the hospital wards. While students are present on the wards addressing their formal curriculum learning requirements, they are also learning what is not defined in the curriculum documents. Students write patient case histories, but the patient notes are not given to students for them to learn from. Patient notes tell the reader about the patient but also about how to undertake medical writing. Students are not shown patient notes, however, students learn they can ask for the notes and will receive them.

In summary, while Clinical Methods introduces students to learning on the wards, students still face challenges regarding communication, gender, access to information and must manage these challenges independent of teachers or doctors. While students are actively addressing the learning goals of learning the patient history and examination, they are beginning to understand and gain confidence in the clinical environment through participating in it. They observe the differences between what they are told to do and what doctors actually do, reflecting a gap between the formal and informal curriculum.

Conclusion

The shape of the medical students' transition from the preclinical to clinical environment becomes visible through an examination of their early clinical experiences. It could be argued that some of these clinical experiences are not authentic in that they are fragmented, brief, and contrived. Students do not see the nature of doctors' work, and while the procedures and skills required of doctors are addressed somewhat through clinical skills teaching, this lacks the true context in which skills and procedures are used. None the less students see the patient as a person and remember diseases through the personal stories of patients. Wilkinson, Gower and Sainsbury (2002) have shown that even brief early clinical experiences increases the relevance of theoretical knowledge to students.

The application of their preclinical sciences to patient diseases is seen in the class-based sessions. Patients 'make it real' but this reality is a purified reality as these patients are well, and good story-tellers. In comparison, the patients that students talk to during Clinical Methods are in hospital and therefore not completely well, and are potentially unreliable historians. Medical students' sessions on the wards are the beginning of an apprenticeship-style of learning, and a move towards developing a new professional identity. They learn from the patient and the doctor in the clinical environment. The concepts of communities of learning, and learning as peripheral participation, are applicable (Lave & Wenger, 1991). The student is becoming a member of the medical community, and while they are not able to fully participate, they learn the work and craft of their profession. Students are participating in the clinical environment, and their learning is an interactive experience, and not solely academic.

Through these preclinical experiences, students feel they are becoming doctors because they are 'doing'. For the student, to be able to act and do something simulates being a doctor. If this action separates the doctor from the scientist as Freidson (1970) proposes, then this is another step towards students' professional socialisation. The doctor acts for and upon the patient. The medical student, who can perform a blood pressure measurement or physical examination, is differentiated from the science student. Students in the Clinical Skills Resource Centre are interactive with one another, but in a patient-free place. It is the Clinical Methods sessions that offer the more complex medical environment for students to learn in.

Students learn aspects of doctors' work that include communication, language and physical examination. While wanting to validate stories and be respectful to patients, students need to transgress social norms and ask about personal boundaries and bodily functions, and examine intimate parts of the body as well as take up the patients' time. Students learn to examine the patient as a body, and not as a man or a woman with normal lay sensitivities to gender. This is normal work for doctors, and students are learning to do it. Students discern the varied ways of communication between the doctor and the patient: patient or disease-centred, and the difference between lay and medical language. They see the tension between lay and medical language. When patients use medical language, this reinforces the biomedical approach for the students. Learning the professional way of the doctor involves learning the depersonalisation or medicalisation of the patient. This medicalising allows

students to ask personal questions of strangers, and examine peoples' bodies regardless of the patient's gender. As well as medicalising, students personalise diseases through the patient. In the following chapter these early clinical experiences are expanded upon as students shift towards becoming a doctor.

Chapter 6

Learning in the Clinical Environment

Introduction

> Patient contact is the cornerstone of the authenticity of their medical experience. It is also crucial to their own developing self perception as young doctors in the making (Atkinson, 1981, p. 28).

In this thesis I argue that the disease-based approach to Medicine that dominates in the preclinical years is challenged when medical students face patients. Students are given access to patients because students need to learn the patient case history and how to examine a patient to become doctors. The case history and physical examination are structured to elicit information about diseases, which is the focus of the biomedical approach by doctors to patients. This structured approach may not always be sufficient to support all student-patient experiences as is seen later in the thesis, but it does provide students with access to the clinical environment and opportunities to talk to patients.

This chapter addresses students' application of their preclinical knowledge and approaches to learning and the learning of the patient case history. The patient case history may be considered to be the enactment of the biomedical model, providing doctors' access to patients and diseases. Students' approaches to learning the patient case history are examined here, because it is an important aspect of the professional socialisation of medical students. When students enter the clinical environment, they focus on learning the patient case history. The patient case history provides the interface between the patient's presentation of illness and the doctor's interpretation of disease. The patient case history is only one aspect of medical students' socialisation, but it serves as a key to other aspects of medical work and familiarisation to the clinical environment that students need to become doctors. Initially, the differences between learning in the preclinical class-based years are compared with learning in the clinical environment to provide an understanding of the changes students experience in entering the clinical environment.

From Third to Fourth year

> I just think that for me the things that have made me passionate about Medicine is not books. It's people. It's like if I meet a patient and they have a disease, I'll become interested in that disease because of the patient (Leah, 2).

Third Year

The differences between the third and fourth year of medical education are significant at the University of Auckland medical school. These differences underlie the students' shift in focus across the two years. In their preclinical years, students spent most of their time in the lecture theatre, learning through lectures and books, or 'chalk and talk' (Moss et al., 1987). The emphasis has been on academic learning; grades and assessment have been focussed on facts. There are more scientists than clinicians as teachers in the preclinical years as other researchers have noted (Becker & Geer, 1958b; Sinclair, 1987). The classroom and students' timetables have provided boundaries for students in the preclinical years. These boundaries include where students should be, and when and what they are taught every hour of their day. This structured approach in the preclinical years is typical of medical education (Moss & McManus, 1992). Students take the disease-oriented teaching from lectures and read in textbooks, and learn or understand it to pass examinations, usually on their own (Wenger, 1996).

Fourth Year

In fourth year, students are based mainly in the clinical environments of the hospital and general practice, which are very different places for learning compared to the classroom. Using Sinclair's analogy of Goffman's theatre of everyday life (1959), students are now acting or participating in the frontstage theatre of Medicine (Sinclair, 1997). Students receive less structured teaching than in previous years. They have teaching on campus one week of every seven. Ward-based small group tutorials are also held in the hospital and general practice.

Students are informed that they will apply their 'knowledge and basic professional and clinical skills learned earlier in the programme to an increasing range and complexity of clinical situations' and that they should review their 'organ systems and professional skills teaching' from the earlier years (University of Auckland, 2003, p. 11).

The structure of the students' days in the clinical world is less predictable than in the classroom. Students usually attend ward rounds (particularly if the consultant is present), and follow junior members of the medical team in their work, having breaks when they do. Alternatively, students see patients to complete assessment logbooks. In the logbooks students note the clinical conditions they see, and document procedural skills undertaken (Department of Medicine, 2002). Being a medical student in the first three years meant going to prescribed classes like a university student, but as fourth year medical students in the hospital, there is greater uncertainty of their role and place.

In fourth year, the academic focus is on diseases and pathology. Pathology is the study and science of diseases as they affect the human body – the 'when things go wrong' part of Medicine. This bodily malfunction, which can be seen as a normal part of life, aging and death, is the basis of Medicine and includes diseases and their underlying processes and effects on the body. This is the focus of the next three years of learning and in particular, the presentation, investigation, and treatment of sickness and disease. Students learn about diseases through patients, in the clinical environment.

Apart from the formal learning students are engaged in, students are involved in informal or indirect learning of many aspects of medical work, through their placements in the clinical environment. This learning occurs both within and outside of structured teaching situations, and is often patient-based. Medical students are now exposed to 'the 'reality' of clinical medicine' (Atkinson, 1981). This 'reality' includes the place of patients in students' learning and in the work of doctors, and the clinical environment of hospitals and general practices, where learning is social and interactive. This is important in workplace learning (Wenger, 1996). Students wear professional clothes and not the casual clothes of the generic student, and although they are still students they now look more like doctors, for example, they carry stethoscopes. While earlier work on professional socialisation of medical students noted the frequent wearing of white coats by students (Becker et al., 1961, Coombs, 1978), white coats were less frequently worn by students in this study.

In their fourth year, medical students spend their time with patients, doctors and other medical students. Being in the clinical environment, students now relate to many people in addition to their classmates and lecturers – patients, their families, doctors, and nurses. Students have become part of the social network or fabric of hospitals and Medicine. These many and varied relationships have long been considered to be important in the social environment of learning for medical students (Merton, 1957). It is through these experiences that students are socialised into their profession. Students now belong in the everyday life of the ward, clinic, and general practice.

Directly and indirectly the patient is the centre of student learning, and this constitutes a major change between the third and fourth years of medical education. The clinical environment contextualises all previous learning and theory, as well as the patient- and disease-based learning of the up and coming clinical years. It is the frame of reference within which the students' knowledge sits, and gives students an understanding of the science and clinical knowledge they learn and acquire.

Learning in the Context of Patients

Changes in Learning: Reshaping knowledge

Students must carry what they have learnt in the classroom into the hospital and general practice, and are challenged to apply the scientific knowledge learnt in the preclinical years to the clinical years (Prince et al., 2005).

> You kind of wish you had done more at the time. Like what bone is this?
> And you can't even remember the bone (Trish, 2).
>
> I think I know this but I don't. Where did it all go? You supposedly got an A+ for your cardiovascular paper and you can't read an ECG [*electrocardiograph*]! (Vicky, 2).

In the preclinical years students may learn the importance of science in Medicine, but they don't see the context, and application of the science to a patient. In the clinical years, students now reshape their preclinical learning to apply the science of Medicine to the patient.

Gordon et al. (2000) note that students' use of preclinical knowledge in the clinical setting is limited because of the difference in contexts. Learning that is meaningful and within context is better recalled by students than that learnt distant from its point of application (Regehr & Norman, 1996). For Trish and Vicky, there is a delay of months and possibly years between learning the facts, and then recalling and using them. In addition, there is a change in the context between where the information was learnt, and where it is recalled. Students need to recall what they learnt in the classroom, but now it is in respect to a patient. Prince et al. (2005) observe students are able to list symptoms of diseases, but have difficulty producing possible diagnoses when a patient presents their symptoms. They note that students' learning is not based upon significant features of diseases but around concepts of disease, and as a result, when students shift to the clinical environment, they need to shift the focus of their learning. Regehr and Norman (1996) also claim that despite students being able to describe the symptoms and signs of disease, as might be done in a test or examination, students are unable to recognise the disease in a patient presenting with similar signs and symptoms.

In the clinical years information needs to be structured and organised differently, than it was in the preclinical years. In the preclinical years, subjects were well-defined and categorised by body parts or systems. Textbook chapters such as Pelvis, Upper Limb, Head and Neck in anatomy books (Moore, 1985), and Cardiovascular, Respiratory and Blood, for example, in physiology texts (West, 1990) directed the structure of students learning.

> In BHB [*Bachelor of Human Biology; the preclinical years*] everything was in blocks and it was always structured the same…It wasn't really challenging. Whereas now it's a lot more flexible learning and when you see something it inspires me to learn about it more. It's more integrating. It's not basic fact learning (Georgia, 2).

Despite this tidy organisational structure of the body in the preclinical years, what is needed by students in the clinical environment is an understanding of how patients present with diseases.

In the transition from the preclinical to clinical years, these 'blocks' of teaching need to be integrated, with one another and with the patient, to fit their new application. Facts have been clustered into related bodily systems that had been taught independently of one another in the preclinical years. Students restructure their knowledge to ask questions, and

consider diagnoses relevant to the patient complaint. Even in medical schools that have a problem-based learning curriculum structure (as opposed to a traditional curriculum with separate subject 'blocks'), researchers note that students have problems shifting their knowledge across the different contexts (Norman & Schmidt, 2000). They encounter a 'shock of practice' when entering the clinical environment (Haas & Shaffir, 1987; Prince et al., 2000). It has been postulated that this is due to the differences between the preclinical learning context and the clinical learning context regardless of the curriculum structure (Koens et al., 2005). The restructuring of previously learnt knowledge and appreciation of the patient in students' learning represents an important aspect of the transition from preclinical to clinical years for students.

Students develop a knowledge base that will be useful as a doctor. They learn and develop clinically relevant ways of relating patients' stories of sickness and illness to their own medical knowledge. The social interaction and personal contact with patients makes learning more meaningful and relevant for students.

> I just figured out that this is the way I learn – sort of more, a visual, seeing people and being able to connect with the patient with the illness and I just found it like, thrilling in a way (Leah, 2).

> Things are becoming a lot more relevant and it's easier to learn stuff when you've got a patient that it's applicable to (Stella, 2).

When Leah reports learning 'visually', she notes the personal connection with patients that highlights the relevance of medical knowledge, and for her and Stella learning is easier from patients than books. Leah and Stella come to terms with the nature of Medicine, compared to medical textbooks. In Medicine, patients don't necessarily present with diseases already diagnosed or with even a definite location of pain or disorder. Patients don't say, 'I have pneumonia', or 'I have heart failure' (directing the student to read the chapters on the heart or chest). Rather they present with symptoms or signs that form the basis of further questions that lead to the differential diagnosis. For example patients may say 'I feel short of breath' or that they have a cough. This translation of patients' stories into medical histories through the application of medical knowledge is important learning in becoming a doctor.

It is through the medicalisation of the patient's story that doctors communicate with one another, formulate diagnoses, and treat patients. The medical student must be able to ask the patient questions they understand, and then translate answers into medical language and concepts. Students must know that shortness of breath can relate to the cardiovascular, respiratory, renal, haematological or gastrointestinal systems, or to none of these. The importance of each system varies with each patient, and their story directs students in their learning.

> I looked at a textbook and it would…take me a weekend to read about [*heart*] failure…I am much better at picking out important information and I realise that being on the wards…It doesn't help you to know the name of some chemical (Leah, 2).

Science without application to a patient is science. It is the meeting of science and patient through disease that directs Leah's learning, as she becomes a doctor. Leah is focussed on learning the medical knowledge necessary to be a doctor. How she approaches her learning challenges Schmidt et al.'s (1990) proposition that the medical student returns to basic scientific principles when confronted with new clinical problems.

Sinclair (1997) also notes a separation between textbook and patient-based, clinical learning. He refers to textbook and lecture learning as 'knowledge' and clinical learning as 'experience'. Coombs (1978) suggests that students' predilection to science-based facts reflects the domination of science in Medicine. He also proposes that students favour science, because the majority of preclinical teachers are scientists and not doctors. The science-based focus of the preclinical years means the clinical context of student's knowledge is relatively minimal, and so students' preclinical learning reflects the learning of biological science. In fourth year, Leah's contact with patients has directed and re-focussed her reading to that which is relevant to the patient's disease. The names of specific chemicals and metabolites are not relevant to eliciting the clinical history from patients. Using Sinclair's terms, 'experience' is used to reshape students 'knowledge.' This 'knowledge' is focussed on diseases but now includes how patients present with diseases, and not just pathological processes underlying diseases.

It is commonly acknowledged that students can't learn everything because of the vastness and continuingly changing nature of medical information. Therefore, students must select

what they learn. Becker et al. (1961) contrasts short-term versus long-term goals for student learning in their observation of medical students. In their research, students ascertain that it is impossible to learn everything, and so focus on imminent examinations over that of what they think they will need to practice as doctors. This perspective has not been confirmed in the current research. Students do not refer to assessment in the interviews, nor report a conflict in directing their learning in the clinical years. Students in this study use their clinical experiences with patients to direct their learning. This reinforces their learning of the biomedical model or approach to disease and patients, because students return to books to learn diseases, symptoms and signs.

The difference between this study and Becker et al.'s may reflect the clinical, as opposed to the preclinical focus of this research. Students discuss their immediate experiences, and are not facing imminent end of year examinations at the time of the interviews. Also, students in the current research have some clinical exposure in their preclinical years unlike earlier studies, and this may blur the boundaries between long-term and short-term learning for students in this study. Now learning in the clinical environment, the patient focuses student learning as students apply science to the human body.

Talking to Patients: Medicalising and personalising

> You do the first three years which is all theory and there's this build-up talking to the patients…they're just normal people really. You just talk to them like they are anyone else…It just becomes a lot more normal and natural, as opposed to feeling you feel like it's a big event every time you talk to some body (Stella, 2).

Talking to patients is stressful for students, particularly when they start in their clinical years (Firth, 1986). Students engage with people with different life experience and stories, in their role as medical students, as they will as doctors. In the clinical years students expect to talk to patients. However, with the mostly science-based learning of the preclinical years, Stella is surprised at how talking to patients is normal. The 'normal and natural' experience of talking to patients may reflect several possible changes for Stella. In the preclinical years of medical school, there was a build up to talking to patients through the Practitioner Development course where students learnt 'communication skills', watched videos of good and poor examples of doctor-patient communication. Students practiced

communication skills with one another and actors, and were observed and critiqued doing so. This practice was distant from patients in the clinical environment. Students were sequestered away from patients in their first three years. The delay in talking to patients, and the focus on theory and biomedical science in the preclinical years, enhance the perceived distance between students and patients. By talking less formally with patients on the wards, students' anxiety is reduced. Students shift from social chatting with patients to more medically-oriented talk.

> Initially I really just wanted to get to know them and hear their stories…As I progressed it became definitely more clinical and even seeing signs and symptoms. It's a brain change…You change your thinking completely…You start to think in just a more medical perspective (Paula, 2).

Paula presents a sequential picture of her approach to patients – from a more socially-oriented 'getting to know' patients, to developing a clinical view of patients and this signifies her shift to becoming a doctor. Her perspective of patients becomes more medical as she starts to identify the specific medical information of signs and symptoms from the patient. Paula picks up or sifts out what doctors hear from and sees in the patient that is relevant to the patient case history. As students become more attuned to the symptoms and signs of disease, they begin to think more like doctors. This may partly be due to a larger knowledge base about diseases but also because students have a more specific knowledge base in terms of the questions to ask.

> Of course your medical knowledge has got a little bit more so you can ask the second question and not just the first question (Sarah, 2).

It is easier for students to focus on diseases or the patient's illness when students have more medical knowledge. According to Sarah, they are able to apply this knowledge to the patient. Students' questions direct the patient's story, but the questions must be learnt. These questions take students into the disease-focussed approach of Medicine. In the clinical environment with opportunities to talk with patients more often and less formally and by associating with doctors, students learn medical knowledge and medical work. It is through talk and language that medical work is carried out (Atkinson, 1999), and students now observe it as everyday hospital work. By talking to patients and talking to doctors about patients, students hear and use medical language and the phraseology of medical work. Students medicalise patients, translating the patients' stories into the patient case

history. Anspach (1988) uses 'depersonalisation' to refer to doctors' separation of the disease from the patient, and the use of medical language instead of the patient's words. However, medical language has a specific purpose and function that is not indicated when it is described as depersonalised. Medicalise will be used in this thesis.

While students medicalise patients, remembering them for their disease, patients also provide students with enlivened and embodied experiences of disease, and motivate student learning and interest in diseases, and Medicine.

> A lot of the signs and the symptoms and putting that all together, their stories, they just make it all real. It's just the best way to learn. Someone comes in with acute pancreatitis and you'll never forget that because you can now identify it with a patient and different people's experiences…You remember it more now. I think I just want to spend more time with the patients and on the ward (Paula, 2).

Paula supports Atkinson's claim (1981) that patients provide 'vivid exemplification' and a 'dramatic enactment' of disease. The patient makes the disease memorable through his/her story, and so the disease is personalised through its association with a patient. While textbooks provide thorough and succinct descriptions of disease, the personal story of the patient is more memorable for Paula. Patients have been shown to increase students' motivation to learn, and also increased students knowledge in the early clinical years (Prince et al., 2005). Patients use their own language and words to tell the story of their illness, and students can ask questions of the patient to fulfil their own understanding.

The patient is an ambiguous character for students such as Paula and Stella; a concrete example presenting the disease to be learnt, but also a 'normal' person with his/her own story, providing a personal connection between disease, and Medicine. This tension is reflected when students remember individual patients and their stories, while also focussing on the disease and the medicalised patient.

Patient-Focussed Learning

While students need to pass examinations, patients provide a focus for student learning. They learn that patients' symptoms have scientific causes, even if they are still learning the range of illnesses that are possible with respect to a patient's symptoms. Students base provisional diagnoses on their current and relatively limited knowledge.

> I think I took a case history off him and thinking he's an alcoholic and his problem is that he's got liver disease and then finding out he had pancreatic cancer (Connie, 2).

This is another example of the contrast between the patient's presentation of illness versus medical school learning. Students have only limited clinical medical knowledge when they enter the clinical environment, and come to conclusions regarding the differential diagnosis based on this knowledge. It is through reading the patient notes, or talking further to the patient that students clarify the diagnosis of the patient's disease, and so increase their own knowledge. In the clinical environment, students gather this knowledge and learn to discriminate between diseases with similar symptoms, and also learn to make diagnoses. Patients who present with good clinical signs are discussed and shared among students.

> In the clinical environment, patients presented their problems in their own way. The thing that helped me the most was word of mouth, like a student would say to me, go and listen to this patient or come with me, they've got a good [*heart*] murmur (Jenny, 2).

Jenny learns that patient language and stories of their illnesses differ from medical language. She must see many patients to learn to hear the patient's story as a doctor does. This is possible through students' cooperation and networking, which increases the number of patients that students can see and learn from. It is feature of apprentice-style learning that apprentices quickly pass information between one another to benefit their learning (Lave & Wenger, 1991). Medical student cooperation is a recurring theme in medical socialisation literature; whether deciding the focus of learning as in Becker et al.'s (1961) analysis or considering student cooperation as 'fundamental' (Sinclair, 1997), students provide support for one another. This mimics doctors' co-operation in their work where they seek formal and informal second opinions, or specialist opinions, about patient care and management. Student networking can be seen as a learning equivalent of the collegial relationship in Medicine. From a learning perspective, Jenny's and other students' recognition of potential learning opportunities from each other exemplifies reactive learning. This type of informal learning is intentional learning, but occurs with little time for preparation or formal tuition (Eraut, 2004a). It takes advantage of the opportunities that arise as indeed 'good' patients come to the attention of students.

Patients provide students with 'good' clinical experience, which is valued by students. Patients are needed to complete students' logbooks. Despite the hospitals being full of sick people, students limit their own access to patients. Patients who are very sick, hard of hearing, suffering dementia (and unable to give a clear history), or don't have sufficient English to give a clear history, are avoided by students. Patients can be away for investigations and operations, or may be unwilling to see students. Leah describes a 'good' patient.

> It's somebody that's not too sick, because I can't sit them up and down and listen to the chest and do all that. Also just somebody who is willing to talk. Also patients with good signs. If you can get one with all three, then that's great (Leah, 2).

A 'good' patient allows students to mimic doctors' work where the history and examination are completed for each patient. Although this is what students want, they do not prioritise this learning over a patient's suffering. They choose patients carefully. Seeing patients not only teaches students about diseases, but helps them to undertake a more professional level of practice.

> It's the whole thing about being professional and introducing yourself, doing things without pushing people around…as you might do…with a classmate…It makes them a bit more important so you're a bit more focussed on it and take a lot more out of it (Peter, 2).

The application or practice of knowledge is as equally important as academic knowledge in learning to be a professional (Eraut, 1985; Maudsley & Scrivens, 2000). In the Clinical Skills Resource Centre, students practiced examinations and procedures upon one another. However, in the clinical environment students learn not only medical knowledge, but also about professional demeanour, that is, 'how' to go about approaching patients. Peter has observed doctors examining patients, and he works to emulate these doctors.

The Role of Repetition

In the hospital, students see not only patients on the wards but also patients in the outpatient clinics. Clinics provide students a chance to see multiple patients with similar or common problems. This supports an important aspect in students' learning of medical knowledge – different patients with the same disease present differently from one another. The classic or textbook presentation of a particular disease is not always so, because

patients' symptoms arise from sensations that are not observable (Hobbs, 2004). Patients having a 'heart attack' can present with very vague symptoms, no pain at all, or with classically described textbook symptoms. Seeing a variety of patients exposes students to both typical and atypical presentations of diseases. Medical students note that seeing many patients with the same condition, and repeatedly examining the same body part (as is likely to happen in orthopaedics), reinforces their examination skills of specific body areas.

> You got to see so many spines. You really got the systematic whole assessment thing stuck in your mind (Jenny, 2).

> I quite enjoyed it because I think it's quite simple and it's nice to have something that you know pretty much everything about the knee (Leah, 2).

As well, students observe clinicians repeatedly examining the same area of body in different patients, and this reinforces students learning. While Leah speaks of the patient as 'the knee', depersonalising the patient, this phraseology reflects the focus of her learning. Leah and Jenny are not talking about the patient but about their own learning in relation to a part of the body. They use the patient to learn diseases and the clinical sciences of Medicine. For students to feel that they have mastery, to some extent, of some area of the body and in examination of that body part, is not common at this stage of training. They have become familiar with those particular examinations, and associated diseases. When a patient presents with a textbook or classical presentation, students recognise the disease.

> I really enjoyed the abdominal patients…because they can be quite boxed. They can actually present like the textbook says…once I got the hang of say pancreatitis…I could get those next questions (Sarah, 2).

While patients with surgical problems usually have symptoms and signs limited to one body system, patients with medical problems may have more than one system involved in their illness. Consequently, students feel they are more likely to be able to identify the problem in a surgical or orthopaedic patient than in a general medical patient. Sarah raises the issue of 'the next question.' By seeing many patients with the same illness or disease Sarah refines, and progresses, her medical history.

In summary, the shift between the preclinical years and clinical years is significant for students because of the differences between the two learning environments. The student now learns within the settings in which doctors' work. Knowledge is reshaped or re-learnt

to suit its new use with patients as it will be used as a doctor. The biomedical model is not only science, it is science applied to patients. Students are learning how science is manifest in patients and their diseases. This manifestation is made visible through the patient case history. The patient and the clinical environment provide a context to what and how students learn. This is the eventual work environment of the student, and so more than 'knowing about', diseases and medical work, students are developing a professional identity because they are learning with patients and in the clinical environment (Bleakley, 2002).

Learning the Case History

The oral presentation of patients between doctors is central to medical practice and medical work (Haber & Lingard, 2001). Doctors present patients to one another in order to discuss investigations and management, and to transfer the care of patients to one another. The patient and his or her story are medicalised, by being translated and structured into the case history. This is seen with the use of impersonal language and the absence of the patient, when doctors talk about patients referring to them by their disease (Anspach, 1988).

The case history is both a verbal and written form of communication, and is the accepted structure of the patient's story. In becoming doctors, students learn the structure of the case history, and how to elicit the case history and the manifestation of diseases concurrently, because these two foci of learning are interdependent. The case history is a method of inquiry that cannot be learnt or practiced without understanding the symptoms and signs of diseases upon which to construct questions. Students learn about diseases, signs, symptoms, and which questions to ask, in order to elicit information to make the diagnosis. This requirement to learn different but related information concurrently differs from preclinical learning. In the earlier years, subjects were related, but were taught and learnt as separate blocks.

The presentation of the case history focuses the attention and engages the listener (or reader), showing that the newcomer or apprentice is learning to talk like a member of the community (Lave & Wenger, 1991). The case history is necessary because it presents the patient's disease as a medical reality, and this allows the doctor to diagnose diseases based on the patient's symptoms. These diseases are central to the biomedical model and

therefore, central to doctors' work to provide diagnoses for patients (Good, 1994). Through the case history, tests will be requested, diagnoses made, and treatments initiated which confirm or reject the doctor's proposed diagnosis. Patients' experiences of illnesses are made real, or brought into life as medical diagnoses. Students begin to learn the case history and how to present it in Clinical Methods in third year. Now in fourth year, students hear and see signs and symptoms of diseases, which is part of the everyday work of doctors (Atkinson, 1995). The intricacies of the case history and case presentation are learned from the observation of others, practice, and the feedback given by their tutors.

> From those presenting cases and the doctor going through and critiquing them…what was important when...[*other students*] got up and presented cases (Paula, 1).

> When you see something the second time, you've got at least one more question to ask in the right direction (Sarah, 2).

Students are required to verbally present cases (usually as part of their assessment for the clinical attachment, or as part of usual medical work), and this is practice for their subsequent work as doctors. Watching others is an opportunity for vicarious learning. After the presentation, the student is asked questions which directs them how to improve their history taking. By learning the case history in the context of a patient, students learn and remember more than learning in the classroom. The activity and its context are interdependent, and must be learned contiguously if the student is to remember what and why they are learning (Brown et al., 1989).

Through exposure to case histories, students learn medical language and phraseology, constituting part of each student's professional socialisation (Anspach, 1988). When students present the patient through the case history, they are also presenting themselves and their progress in becoming doctors (Anspach, 1988; Erickson, 1999). Students simultaneously demonstrate their prowess eliciting the case history, their knowledge of diseases and symptoms, and their ability to organise the information to construct the case history. The current study confirms these findings.

As well as feedback and repetition, students describe working out the structure of the case history quite consciously.

> You start off with this idea you've got to go through and break it up into subsets and slowly you just do it without thinking and you start to realise which system enquiry questions that you need to ask. You slowly get better at that...and the feedback provided was really good (Mike, 2).

In the process of eliciting the case history, a patient's answer to a doctor or medical student's question leads to one line of enquiry, while another response takes the student or doctor through an alternative set of questions. Mike has enough knowledge, and knows the doctors' approach well enough to know where to begin with the patient. He learns that certain symptoms are associated with certain bodily systems, which he forms into 'subsets' of questions related to bodily systems. These body systems will direct Mike's further questioning of the patient. This becomes automatic for Mike after a time, and is made easier with feedback from experienced clinicians. An alternative approach for students is to start with general or open questions, as Georgia reports, using clues from the patient's answers to help guide her questions.

> It's the whole thing of letting them talk first, encouraging them to talk as much as you can and try to make sense of what they are saying and then ask a few deductive questions (Georgia, 2).

Students need to understand the elements of the patient's story of their illness which are relevant to the medical history, and to use those to direct their next questions. However, by opening the case history to the patient to give their own story Georgia lets the patient give the cues to the direction of the history to be taken. Georgia undertakes a fishing exercise where she waits to see what the patient will tell her, to help her locate the next questions to be asked. To 'make sense' is to understand the medical aspects or points of the patient's story. Georgia recognises what the patient says, and directs the patient's story into the medical case history. Observing doctors in this aspect of their work equally helps students.

> I have become more and more comfortable with taking histories. I know what to ask now, not always, sometimes I get stuck, but I know more about what to ask. I have a general plan in my head and I don't have to think about it. I think there are things that I have picked up from watching doctors that are helpful (Leah, 2).

Leah modifies her own plan, as she observes doctors, and she demonstrates the importance of being in the clinical environment. Her comfort reflects her familiarity with the case history and patient presentation of diseases. Like Mike, she no longer consciously works

upon the case history. With her increased knowledge and experience, she refines what she does. While observation may be perceived as vicarious learning as opposed to active participatory learning, Leah learns from observation, indicating her engagement with the situation. Her motivation for learning in this way is driven by her own wish to learn. Students describe practicing the case history, observing and adjusting their own approach throughout their clinical attachments. Learning changes as novices become expert.

> In the beginning you sort of forget what order you're supposed to go through and what questions you are supposed to ask, but by the end you just know (Marie, 2).

Marie and the other students in this section demonstrate a shift from the 'labored, conscious, and overtly controlled (declarative) processes of the novice that gradually give way to the smooth, unconscious, and covertly controlled (procedural) processes of the expert' (Reber, 1993, p. 16). They increase their mastery of this aspect of Medicine to the extent that they are not aware of their knowledge and expertise. While students began with books of questions, they then develop sufficiently to be able to elicit the case history, without memory aids. Practice perfects students' elicitation of the case history. They can sit with the patient like a doctor, and direct the patient's stories to the medical case history. The patient is comfortable enough with the student to disclose their medical details to them. Another indicator that students have become more skilled in taking the patient history is the reduced time needed with the patient.

> I think the duration is the biggest thing. It takes me 45 minutes to get a good history now, whereas when I started it took about three hours (Cleo, 2).

With experience gained from clinical attachments, students have acquired more knowledge about diseases, and know which questions to ask to form the case history. Students can shape their questioning better in order to be more efficient. They don't need to let the patient talk to give clues and cues. Cleo is more directed and medically-oriented. She uses questions that give her the answers she wants, limiting the patient's story. With this progress, her learning has shifted from a focus on what questions to ask, toward understanding the significance of the answer in terms of a diagnosis.

> You think 'Could anyone ask these questions?' I think for me it's the process of taking that information and processing it and then coming up

with a differential diagnosis…Not all the general public has that ability to come up with a differential diagnosis (Marie, 2).

Marie's consideration of the differential diagnoses indicates a new level of learning that goes beyond questioning patients. She now can question patients, and interpret their responses in light of her knowledge of diseases. She is now approaching the patient like a doctor.

In medical education research, educational psychology approaches still predominate, and one of the consequences is that uniform theories of student learning result (Bleakley, 2002). The various psychological models postulated around medical student learning (Barrows & Feltovich, 1987; Regehr & Norman, 1996; Schmidt et al., 1990, for example) do not take into account the social context of learning, and it is evident here that the social context is invaluable to learning about elicitation of the case histories, and approach to diagnosing disease. Being in the clinical environment allows students to use many approaches in their learning.

The current study presents aspects of student learning of the case presentation and patient examination in greater detail than previous research. In *Figure 1: Learning the Case History,* the different approaches students use to learn how to elicit the case history are presented. The formal curriculum establishes the requirement for students to learn the case history. Students undertake this learning in the fourth year, independently learning the details and questions to be asked of patients.

Because students are learning in the clinical environment, they are able to draw upon different approaches and resources to learn how to elicit the patient case history. It is shown in this thesis that students' progress from chatting to a patient, to eliciting the case history, to being able to formulate a diagnosis of the patient's illness. The word 'form' (in formulate) acknowledges the manipulation of the patient's story along with the student's knowledge, to establish a diagnosis. Applying a diagnosis of a disease to a patient's symptoms is an important aspect of learning to be a doctor, but does not address all aspects of doctors' work as will be shown.
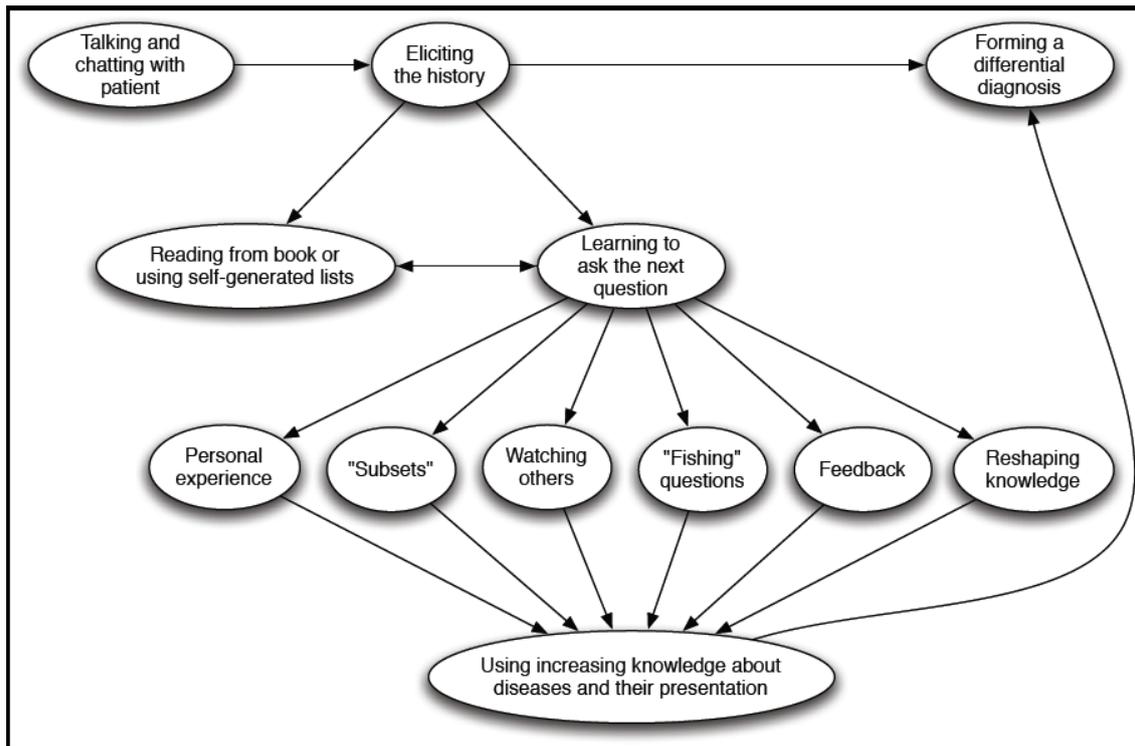
Figure 1: Learning to Elicit the Patient Case History

Although students remember diseases because of the association with a specific patient, they also learn to medicalise the patient and his/her illness, and so undertake a disease-based approach to medical practice. Initially, students use clinical methods textbooks to structure the case history when they talk to patients. (For examples see Swash, 2000, and Talley & O'Connor, 2000). In the clinical environment, students use diverse methods in learning the intricacies of eliciting the case history. Many of these methods involve doctors or other students, and using what has been learnt in the preclinical years in a way that is relevant to a patient. By asking open-ended questions, students can 'fish' for information upon which to base further questions, taking their cues from patients' responses. While students negotiate the questions to ask patients, they learn and use their knowledge of diseases to give meaning to patients' signs and symptoms, and so progress to differential diagnoses. The inquiry strategy a doctor uses to question and form a differential diagnosis list is individual, and relates to their clinical experience (Barrows & Feltovich, 1987). So it is here that students discuss different ways of developing their own questioning and approach to taking the case history.

Students undergo a 'brain change' and begin to think more like doctors, focussing on the patient for the medical problem itself. Students understand how diseases manifest in patients, and how to translate the patient's words and stories into medical language, and the patient case history. They have normalised the medical approach by being able to elicit a patient case history and formulate the differential diagnosis list.

Writing the Case History

As well as learning how to talk to patients, students continue to learn how to write about them. This is the formal presentation of the medicalised patient story. Concurrent learning of several aspects of work is expected in apprentice-style learning when students are learning in the work context (Lave & Wenger, 1991). Writing and speaking like a doctor are learnt concurrently. Writing the patient history involves writing in the formal structure of the case history as identifiable to all doctors (Hobbs, 2004). The need to write about patients is central to the practice of Medicine and medical work (Atkinson, 1995, Atkinson, 1999). Patient notes document the history, investigations and management plan for the patient. The progress of the patient and their disease, successful and unsuccessful treatments, investigation results, and plans for the patient, are charted in the patient's notes. This documentation is standardised in western countries (Coker, 2003), and has legal implications. Medical notes can be used as evidence in legal cases, in cases of disciplinary action against a doctor, and in courts of law. The admission notes or the case history

> constitute a key training tool by means of which residents experience and internalize the cognitive processes which constitute medical reasoning and analysis (Hobbs, 2004, p. 1579).

Students had started writing case histories in third year, and this continues in the clinical years. The written format mimics and so reinforces the verbal history. As Hobbs notes, students learn the medical approach and way of thinking through the case history. The student must take what the patient says and shape the patient's story to fit the structure of the written history.

> I always I feel like I get heaps of information…but then when I write them up…judging from last year as well my marks were pretty average. I reckon I get so much out of a patient and I never quite get it onto paper (Trish, 2).

The patient's narrative must be shaped to fit the accepted format of the written history. What is important and not important to the case history of the patient must be selected by the medical student. There is a process of medical translation. It is not the quantity of information, but the type or quality of information that is needed to present the patient through the case history. The patient's story is reduced to the narrow frame of the case history. Specific feedback highlights students' omissions or errors.

> I got one back and it was a lady with cellulitis and he said you haven't included a description of her leg…I had mentioned it in the presenting complaint but I hadn't mentioned it on the examination! (Mike, 2).

The patient presents with an infection of her leg – to a qualified doctor it might seem obvious to describe the patient's inflamed, hot, and tender leg in the case history. One possible reason for Mike's omission may be that a patient's cellulitic leg does not actually fit into any of the typically taught examinations. Mike is not only learning which bodily system may be involved in a patient problem, but also the medical problems that fall outside of the learnt medical systems, and how they are integrated into the patient case history. Mike adapts or manipulates what he has been taught, to the patient in front of him. Through informal learning through feedback and discussion with others, Mike learns the nuances of the patient case history.

Students progress to writing up the patient history in the patient notes. In this instance, Stella had observed the doctor taking the patient history, and was instructed to write the case history.

> I kind of went 'Oh no!' but once I did it, it was really good and she was really helpful with feedback like 'This is good' and, 'you didn't do this very well' …Whereas with other consultants didn't actually make me do anything, so I didn't learn as much (Stella, 2).

As noted earlier, when students were required to shift their practice from student-like to doctor-like, they reported increased learning and professionalism, showing an understanding of how doctors work. Participating in the doctor's work and being supported in her learning through receiving feedback is identified as an important way for Stella to learn in the workplace of Medicine, as in other fields (Eraut, 2004a; Lave & Wenger, 1991). Stella is directed by the doctor to fit and present the patient as a medical case. While

Stella is still learning for her own sake and acquiring her own knowledge, she is also participating in medical work, and this reinforces the place of the case history as a technique or tool of medical practice.

Good (1994) notes the organisational process to writing the case history, but also adds that writing the patient case history authorises the medical student, and justifies their interaction with the patient. Stella's Consultant acknowledges that Stella is able to contribute to the patient's care. In a sense, she is promoted and the Consultant is indicating that Stella is ready for this level of participation. Just like the verbal case presentation, students find practice important to learn how to elicit, and present the patient's story as a case history, learning the nuances of the history that are valued by the teacher, as much as those that are dependent on patient.

> You've just got to keep practicing on lots of different people. Sometimes I find they teach us all these detailed type things and…in reality you just don't do all the detail (Marie, 2).

Part of Marie's learning involves her selecting what to learn from doctors. This reflects each doctor's own idiosyncrasies in patient history and examination, as well as specialty differences in how the same part of the body is examined (Sinclair, 1997). Doctors develop their own approaches to medical practice which they then teach to medical students. Marie describes doing this herself, as she moves towards becoming a doctor. In apprenticeship learning, Lave & Wenger (1991) note that understanding the overall picture or outcome of the work process is important for novices, because they get to see the application of earlier pieces of work to the final outcome. Detail is beyond the novice's initial learning, as they come to grips with an overall or broader understanding of the work or task. What is learnt is placed in context, and so is more meaningful for the student than if learnt independent of the context.

Procedures

While learning to talk to patients, write case histories and admission and discharge planners, students also perform examinations and undertake procedures like doctors. These include taking blood, inserting luers, performing spirometry, and assisting in the operating theatre. Less commonly performed are the more invasive procedures of insertion of urinary

catheters, and rectal and vaginal examinations. Atkinson (1981) observed in his research that students were keen to watch doctors undertaking procedures, although there was little opportunity for medical students to perform them. This contrasts with the experience of students in this research, and may reflect the introduction of preclinical skills teaching whereby students are more prepared and already somewhat experienced in procedures. Procedures reinforce to students that 'doing' is important.

Procedures including physical examination require medical students to touch patients, or perhaps handle patients. This handling must seem confident and competent to the patient – like a doctor's touch. Minimising pain to the patient, but eliciting the physical sign or doing the procedure, requires the patient's physical space to be invaded. While these aspects of medical practice can be demonstrated ad infinitum, it is through students' own experience, that they learn how to do them. Procedures have consequences – causing pain and making a patient bleed through venesection, or initiating medication for high blood pressure. By undertaking procedures students, are responsible for the consequences. Sinclair notes that 'experience is personal' (1997, p. 203), and so students must gain this experience themselves, with individual patients.

Many examination skills and some procedures were introduced to students, through clinical skills teaching in the Clinical Skills Resource Centre. In the safety of the Centre, students learnt and practiced on each other, supervised by clinical tutors, aspects of physical examination such as measuring blood pressure and pulse rate, and reading scans and radiographs. This early introduction indicates the importance of these aspects of medical practice. These experiences provided a base for student learning in the clinical environment.

> It was pretty good because what we did here last year, for clinical skills,
> was similar. You kind of knew a little bit and you had done a few things,
> so you had a few foundations to go on (Peter, 2).

The skills perceived to be simple by students are those that many doctors and nurses do, and most patients have done on them. Despite the frequency of use, these skills are not simple. They required coordination, dexterity, and some knowledge of anatomy and physiology to be performed. In Medicine, skills and procedures can be defined as 'static' or 'dynamic' (Guest et al., 2001). The ability to carry out any task or skill in Medicine is

partly dependent on practice of a defined sequence of actions, in the same way a dancer learns and rehearses a routine. These types of skills can be referred to as static because what is required does not change. However, there are also dynamic skills in Medicine. These skills reflect the complexity and variations in the task that may be needed, depending upon the different situations and circumstances where the skills are applied. They may require improvisation to accommodate the individual patient or situation variations. Dynamic procedures may contain elements of static tasks within them. However, the user must be able to adjust their practice to different patients at different times, and in different settings, including the judgement of when and why procedures should be performed. Performing procedures constitutes 'experience' over 'knowledge' in Sinclair's terms (1997), and the former is highly valued by students. It is this 'experience' that gives students the feeling they are becoming doctors. Students initially begin with less invasive procedures.

> They let you do more even if it's just a blood pressure…and it's all starting to make a bit more sense (Tessa, 2).

Tessa notes performing everyday skills or procedures leads her to feel more involved with the patient care and the team. It helps Tessa 'make sense' of hospital work and patient care, because the procedure is in the context of the patient, and medical work generally. To be asked to do a procedure is to be entrusted by staff as being competent, and responsible to do so.

Medical students also do more invasive and painful procedures to patients, which bear greater responsibility. It is the implicit role of the medical student to increase their responsibilities as they progress through medical training. The exception is inserting intravenous lines. It is made clear to students that they should complete their anaesthetics attachment prior to performing this procedure on patients in other clinical attachments. The dilemma in letting students decide their level of responsibility is the risk of them taking on responsibilities prematurely, in advance of their ability (Merton, 1957). There is no way of ensuring this doesn't happen. Students have varying experiences on each clinical attachment, and there are no standardised guides or approaches to this that can easily be set by staff. This means that the student who is given the opportunity to undertake procedures, and is supported in doing so, advances more rapidly than the student who is not. This does not seem to push students to undertake procedures until they feel prepared.

Students are often keen to perform procedures, but with the responsibility of doing so students are often concerned at the risk of causing pain to patients.

> I guess with the things like putting in lines, I just want to get it right and I
> don't want to put a patient through any more than is necessary (Stella, 2).

Any mistake in taking the patient history or in performing the clinical exam will be rectified by the doctor, and the patient won't necessarily know if the student hasn't taken a complete history or missed aspects of the physical examination, or not picked up a clinical sign. However, with procedures there is less room for mistakes, and patients are more likely to know if the student is unsuccessful in their task. Procedures are often invasive and painful, and can have consequences for patients – the risk associated with repeated procedures, infection and distress. Students are aware of patients being unwell and vulnerable and/or suffering, and they do not wish to add to the patient's suffering by their own inexperience. Some skills, such as measuring a patient's blood pressure and inserting a luer, are common in hospital, but they are not necessarily easy to perform.

> This is a simple skill [*inserting luers*]…on the scale of being a doctor but
> I remember when…I had just started and I missed people all the time and
> it upset me so much. I remember bursting into tears (Connie, 2).

Students approach procedures seriously, and failure is a risk Connie finds difficult. Connie highlights the difficulty of the procedure, and her inability to do it despite her training in the Clinical Skills Resource Centre and in her anaesthetics attachment. More invasive tasks such as excising skin lesions and cervical smears are not normally the domain of the fourth year medical student year, but Vicky describes having the opportunity to perform both in her general practice attachment. In terms of excising the skin lesion

> It was easy because it was on his back so he wasn't facing me and
> couldn't see when I was thinking 'I can't get these scissors undone'
> (Vicky, 2).

Supervised by the GP, Vicky learns how to use equipment as well as how to do the procedure. Even common tools of daily life, such as scissors, take on a different meaning for the student when they are to be applied to the human body. Vicky begins to use scissors like a doctor. This normal medical event of excising a skin lesion is anything but normal for Vicky. Not being faced by the patient means her lack of dexterity with the equipment is

not seen by the patient. Procedures are the public display of medical work, and so a student's competence as a doctor-to-be can be seen by others. Vicky observes the doctor as

> He did the first cut and said 'this is how you do it' and I was like, okay
> (Vicky, 2).

This is a common way to learn how to do procedures in Medicine – watching, and then being observed while the student copies the doctor. It reflects the apprentice-type, practically-based approach to learning. The same approach is taken by Vicky doing cervical smears on women. Vicky had practiced this skill on a mannequin in her preclinical years, being taught about issues such as appropriate language, equipment, and privacy in the Clinical Skills Resource Centre. She acknowledges her anxiety at being dexterous enough to do the procedure quickly and painlessly, and recognises that it was an 'invasion of personal space' of the patient. She also reports that her anxiety diminishes with experience.

A common aspect to performing procedures for students is the unpredictability of the opportunities. Students, like doctors, never know if or when they will be called on to perform a task. When they are, there is relatively little preparation time afforded to the student, because the patient is waiting.

With respect to medical student professional socialisation, performing procedures shares some common aspects with patient examination. The student's dexterity, professionalism, and potential anxiety are visible while the patient's personal space is intruded and invaded upon. Students take on increased responsibility by undertaking procedures, and they put the patient at risk if the procedure needs to be repeated because the student is unsuccessful. Becoming a doctor entails manipulation of equipment, and medical students are learning how to handle equipment like a doctor does. This includes when something should be done as well as how it is done to the patient. This participation is generally supervised and students note that 'doing' is not simply about the procedure, but requires a greater understanding of patient care and disease management in the clinical setting. Like the case history, procedures reinforce the medical approach to the patient in terms of 'doing' as a doctor does.

Conclusion

The transition from the classroom into the clinical environment expands students' learning from fragmented text- and lecture-based, science-focussed learning to clinically-based, patient-centred learning. What students termed 'basic facts' learnt in the preclinical years, is now integrated with patient-based information, to direct the students' further learning. The knowledge and learning that students bring from their preclinical years is not easily transferred and applied into the clinical environment. In the clinical environment it is not enough to know facts; students must know what the facts mean with respect to a patient. As Hobbs notes

> These problems illustrate the discrepancies between textbook descriptions and their imperfect or confusing real-life instantiations that typify the world of medical practice, a world that must be experienced to be understood (Hobbs, 2004, p. 1600).

The challenge for students transferring knowledge across different environments has also been seen with students at medical schools that use problem-based curriculum structures (Prince et al., 2005), implying that it is not simply the structure of teaching that establishes the challenges for students' when they meet patients. The challenge for students is to reconcile the black and white information learnt at a distance from patients, with the complexities and uncertainties that may be present in a clinical environment with real patients. The context of student learning is now the authentic patient, and the student faces the prospect of diagnosing the patients' diseases, directing their further work with patients.

The patient now provides the nexus for learning the case history which is the basis of doctor-doctor communication (Atkinson, 1995), as well as learning about diseases, and how patients present with signs and symptoms. It is in the clinical environment that students learn medical language and phrases that enable medical communication. This communication includes the medicalisation of patients, seen with students referring to patients by the parts of the body that the student is learning about. This focus reflects students addressing the formal curriculum of diseases, which is learnt through learning to elicit the patient case history.

The case history brings together, and extends, the students' knowledge of diseases with the patient's experience of signs and symptoms of illness. The case history is not simply a

series of questions; different answers lead the student to different lines or directions of questions. The patients' answers must be understood within the context of diagnosing potential diseases. It is in bringing together the scientific knowledge of diseases with the patients' manifestations of disease and illness that the student learns through the case history and physical examination. Students take advantage of any opportunity to learn the patient case history and the questions to be asked. As apprentices, they learn from patients, other students and doctors as well as returning to textbooks.

The clinical experiences of second and third year are a relatively small part of the students' preclinical education. The clinical context of medical work was relatively contrived and patients were absent in the preclinical years. However, early clinical experiences provided the first steps, or early exposure to the work of doctors, and the first steps toward some of the skills students used in fourth year. In the clinical environment students are able to observe doctors and be taught and supervised in undertaking more invasive and painful procedures upon patients. Students are not assessed or examined with respect to these procedures but the procedures are part of medical work and the diagnosis of disease. Through undertaking procedures students contribute to the work of the medical team. There are differences between specialities, and inpatient and community-based medical practice that students come to terms with, in their early clinical experiences. This is the focus of the following chapter, *The Heterogeneity of Student Learning*.

Chapter 7

The Heterogeneity of Student Learning

Introduction

This chapter examines the differences between various clinical specialities for medical students, as they attend their different clinical attachments. Atkinson (1995) is critical of research into medical work and medical student education that reduces the clinical environment to a singular place, ignoring the differences that doctors accommodate in their daily work. Participants in the current study note the heterogeneity across clinical specialities and the differences explored in this chapter reflect those addressed by the students. For medical students these differences include the nature of psychiatry and general practice work, relative to other medical work.

The different communication styles between doctor and patient are noted by students and will be seen to reflect the varying relationships between doctors and patients across different clinical environments. This type of learning is deeply embedded in medical work but is largely unacknowledged in the medical education literature and in the stated curriculum. It is implicitly accepted by doctors, and lay people as the way medical care is provided through different specialisations of Medicine. More than the application of knowledge about diseases, diagnosis and treatment, this knowledge is about how medicine is structured and patients are treated across different areas of Medicine. This is an aspect of the 'craft' of medicine (Conrad, 1988).

In terms of the transition from the preclinical to clinical years, students take on a more doctor-like approach to patients and medical work as they become more knowledgeable and accepted in the clinical environment. I will show that while students work to complete Faculty-set formal learning objectives, they undertake to become a member of the medical team, following and assisting the team in their work. Here they are working and learning the doctors' approach to Medicine and disease, through the patient. Students negotiate their own place in the hospitals because there are no defined roles, prescribed responsibilities, or expectations of what students will contribute to the medical team or patient care. This

chapter will show how students participate in the work of the team, and how this gives them access to patients and learning how to be a doctor.

General Practice and Psychiatry: Different clinical environments

Atkinson notes the history of researchers viewing all medical work as the same, and that medical culture is treated as a single culture (Atkinson, 1995). Likewise in most sociological literature, the case history and approach to the patient is treated as a single entity, with differences across specialties being rarely addressed. With respect to the patient case history there is individual variation between clinicians, as there are speciality-based variations that students learn on their clinical attachments (Sinclair, 1997). Every new clinical attachment has different diseases under its umbrella, and these are associated with different signs and symptoms with which the student has to become familiar. Just as medical work differs across different areas of Medicine so too the physical examination can also vary depending on the specialist area of the doctor. For example, a rheumatologist and an orthopaedic surgeon will differ in their examination of the same part of the body (Sinclair, 1997). Students see each doctor's idiosyncrasies and varying approaches across different specialty areas. In this study, there were two areas of difference noted by students.

The areas of general practice and psychiatry differ from the rest of Medicine in terms of their approach to patients or the patient case history. Sinclair (1997) notes these two areas of Medicine are seen as the very lowest status areas of Medicine. In general practice this may be a result of several factors. First, upon graduation students must work in a hospital for at least two years before being able to work as a general practitioner (GP) or undertake training to become a GP. This informs the junior doctor that hospital Medicine and experience is important for general practice, but knowledge of general practice is not necessary to work as a hospital-based doctor. Second, in the preclinical years, there are usually no GP teachers. The Clinical Skills Resource Centre is the exception at this medical school. Third, as Sinclair also notes, hospital doctors disparage their community-based colleagues. In respect to psychiatry differing from other areas of Medicine, psychiatry lacks the 'diagnostic exactitude' (Fox, 1979) of other areas of Medicine, being relatively new compared to the 'concrete pathology' of other medical specialties (Sinclair, 1987). In this

section, students' approaches to these two areas of medical practice are considered because of their prominence in the interviews.

General Practice

While there are differences between all specialties in Medicine, students in this study focussed on the differences between their experiences in general practice and those in inpatient hospital experiences. Students at the University of Auckland medical school complete a 6-week general practice attachment in their fourth year. They spend half of their general practice attachment in an urban centre, and the other half of their time at a rural centre.

In general practice, doctors usually know patients over a long period of time, seeing them on multiple occasions for different and continuing problems. The patient is usually less sick than hospital-based patients, and the medical consultation is relatively short in general practice compared to a hospital inpatient consultation. Staff in each general practice include a practice nurse or nurses, other GPs, and reception staff. Therefore there are fewer staff and other health professionals compared to hospitals.

Medical students' general practice experience is absent from most of the previous professional socialisation studies (Atkinson, 1991; Becker et al., 1961; Coombs, 1978; Sinclair, 1997). This indicates students do not have general practice experience early in their clinical years or the researchers have not included it in their research. In general practice, students are on their own with the GP, rather than being on a team as in the hospital. Occasionally, students might attend a general practice in pairs. Recent research has shown that in community-based practice, students have both more patient contact time, and increased time being supervised by clinicians, than when they are in hospitals (Worley, Prideaux, Strasser, March & Worley, 2004). This could be due to there being fewer staff present in community-based practice compared to hospitals.

Through their general practice experience students note differences in communication between what is learnt at medical school, and what is learnt in the clinical environment. This is particularly so in the use of open and direct questions. Students were taught communication skills in the classroom in the preclinical years. Without examining the

nature of students experiences in general practice, Sinclair (1997) reported students being taught communication skills during their psychiatry and general practice attachments (Sinclair, 1997). Despite communication skills being taught in the clinical environment, Sinclair noted it made little difference to students' hospital work. He observed a conflict between the newly learnt approach, and the more traditional question and answer approach. In the current study, teachers in the earlier Practitioner Development course emphasised students should use open-ended questions, in preference to closed questions in which the respondent can answer with a simple yes or no. The argument for this is that it is important for the patient to be able to tell his or her story, and feel listened to. Given the chance to speak freely, other issues for the patient may be articulated that would not come out in response to closed questions. Students observe this difference in questioning, and their own change.

> When I was doing GP [*general practice*] I saw heaps of patients…I guess I did use the skills from PD [*Practitioner Development*], like open questions but then you do get quite direct because you don't have much time (Tessa, 2).

Direct questions are more efficient for the doctor as they elicit a 'yes' or 'no' answer from the patient. This contradicts what students were taught in the preclinical years, where they learn to ask open-ended questions. This difference in communication styles was similarly observed by students in their early clinical experiences. Tessa develops her own style of communication as she now learns as she works in the clinical environment. She tries the different styles of questioning, and adapts her approach to the limits of the practice. Because of the lack of time for the consultation, Tessa reverts to direct questioning to be able to make a diagnosis more quickly, as is the goal of the medical consultation. She wants to diagnose the illness and present the patient in the accepted medical format.

Traditionally, students have not been taught how to talk to patients (Konner, 1987). Students at the University of Auckland medical school are not only taught how to talk to patients, but learn to modify what they are taught. Tessa notes that she takes her prior communication skills learning and adapts it as a result of her clinical experience. This modification of communication skills is not identifiable as a goal of student learning in curriculum documents, but is another example of informal learning and shows how the motivation to diagnose diseases like a doctor, drives students' approaches to learning. In

spite of the formal learning of communication skills, the biomedical model takes precedence over the open-style of questioning students learnt in Practitioner Development. Students work to elicit the signs and symptoms of the patient so the diagnosis of the disease may be made.

Beyond communication styles being tested and developed in general practice, students note that the general practice is a different environment for learning in compared to the hospital. Where the work of hospital doctors is structured around acute-call days, occasional consultant ward rounds, operating theatre sessions if the doctor is a surgeon, and outpatient clinics, the GP spends his or her clinical time in consultation with patients. It is a different learning environment for students compared to the hospital.

> I found that GP [*general practice*] was probably the place where I learnt to take a history best, because it was a non-threatening environment. The patients were friendly, they're not in an environment which is foreign, you know, it's like a friendly office (Leah, 2).

The physical environment of the general practice is significantly smaller and less complicated compared to a hospital for both the student and the patient. Most patients will have attended their general practice on many occasions and will be familiar with the physical surroundings, people and how general practice works. Because the GP knows the patients well (whereas in hospitals most patients are not known to the doctor and vice versa), the introduction of the medical student to the patient is easier. Leah notes that the environment is less formal and students describe more personal interactions between themselves and their GP teacher.

> We had already made idiots of ourselves in the morning. The questions he's asked us, we had already looked blankly at him…so we felt quite relaxed to do whatever in front of him (Marie, 2).

In Medicine when students are asked questions they cannot answer they sometimes feel belittled and humiliated. Questioning is often done in public places. This is possibly also due to at least partly, to the questions teachers ask, which tend to have a wide frame of reference. Students have to narrow this down to try and identify what it is the doctor wants to know (Atkinson, 1988). While medical students and some teachers might justify a humiliating approach to learning as motivating for student learning (Musselman et al., 2005), students in this research are inclined to withdraw when consultants are abrasive. In

general practice, as noted in the previous quote, Marie does not feel humiliated about having shown her lack of knowledge, perhaps because there have been no ill consequences. The different knowledge used in general practice was noted also by Sarah.

> At GP [*general practice*], I thought I was going to go in knowing something. I thought I was going to be able to answer questions, but I couldn't. The only ones I could answer were anything to do with babies, from personal experience. Everything I could answer was from personal experience (Sarah, 2).

> The thing is that a lot of the general things like what people go to GPs about; we don't really have much knowledge of. It's that basic stuff that we don't know. It's like when people come to you with a sore throat and sore ears (Marie, 2).

There is more ambiguity and greater uncertainty for the GP compared to hospital doctors, when identifying serious medical problems in patients (Atkinson, 1984). Hospital doctors have more tests available to them than GPs. The types of conditions seen by GPs span a wide and varied range of problems, while only a small number of such patients are referred to hospital-based specialists. Patient concerns and illnesses don't necessarily match medical diagnoses and diseases, and the GP discerns which patient problems are medical problems, and what action needs to be taken. While this approach focuses on the doctor making diagnoses, and therefore directly reflects the biomedical model, doctors still must address illnesses that do not correlate with a known disease-based diagnosis, as well as patients' psychosocial problems. Marie intimates that in general practice the less important, not life-threatening conditions that are the more regular work of general practice, receive less teaching time during formal teaching given to students in the classroom. This probably reflects the predominance of hospital Medicine in the curriculum, and that the clinical teachers are most often hospital specialists. Medical students find they are lacking in formal knowledge relevant to general practice, and so they draw on personal knowledge as Sarah describes.

The use of personal experiences in medical education and medical practice is rarely acknowledged in the medical education literature. In other research areas this is referred to as personal knowledge, although the meaning and significance of personal knowledge in workplace learning is ambiguous (Eraut, 1994). Eraut has observed in the area of teaching, that students' work and development as teachers is affected by their own previous experiences, and their family and friends' experiences. Eraut suggests that the importance

of such experiences needs to be theorised about by the learner for the experiences to be considered significant, when considering how personal experience contributes to workplace learning. As reported above, Sarah uses knowledge she may or may not have theorised about, but it none the less contributes to her learning and work. Her experiences are based upon having a child during her medical training, and so are 'insider' experiences. Insider experiences contrast with those had by the student before entering medical school. As an insider, Sarah now has some knowledge of human biology and Medicine and uses her combined personal experience and medical education in providing patient care in general practice.

Particularly in rural general practice placements, students observe a different world of Medicine where the medical and learning environment extends into the community. The GP is an active member of the community they work in, and students observe and participate in the relationships between patients and the doctor, in a more intimate way than in urban general practice or hospital practice. Sometimes the student lives in the doctor's house, and so not only observes the doctor's medical work, but also participates in their life generally.

> He had a good rapport with his patients and the way he talked to them didn't seem very formal…Because town was so small, whenever I went out, when I walked down the road, I would see all the patients…It was kind of weird. The weirdest one was when I saw the husband of the woman who had…cancer. He was out for a walk. I wasn't quite sure if I should say anything, so I just stopped and said, 'How was last night for Alice?' I don't know whether that was appropriate or not (Leah, 2).

Living in the community of medical practice Leah faces different issues than in the hospital. Medical students in hospitals have to approach patients sometimes without introduction, and the relationship is defined by the patient being in hospital, literally limited by the walls of the hospital. In rural general practice in particular, the GP introduces Leah to the patient as well as into the community. Medical work is not limited to office hours, and the GP and medical student may always be on duty in the rural community. Leah attends the funerals of patients, sees patients when out and about, and even takes a children's tennis lesson on behalf of the GP. Her work and learning in general practice, reflects that of her GP-teacher, which entails more than his consulting in an office.

In the city there are fewer chances of doctor and patients seeing one another outside of the hospital compared with rural communities, where doctors and patients are likely to meet out of the office and have other friendships or relationships, beyond the doctor-patient relationship. Because most of medical student training is city and hospital-based, there is uncertainty for Leah as to what is appropriate between the doctor and the patient in the everyday community. Aside from these social or interpersonal differences between fields of medical practice, students note being able to address less common aspects of history taking.

> With a lot of stuff in GP [*general practice*] and the runs I've done previously, if you haven't done asthma, you just learn about that, so you're more comfortable asking about that. Say a mum comes in with a little kid and you might have to ask mum about smoking. At that start I would have been like, I don't really want to ask about this, but now I'm quite happy to ask a parent about smoking, stuff like that (Peter, 2).

In general practice, Peter focuses on general health issues, compared to medical practice in the hospital where the patient's medical history tends to be focussed on the current or acute illness. Students face initial personal discomfort at addressing politically sensitive topics but with practice they become familiar with the questions and their phrasing. Students become more comfortable with their position to be able to ask about these areas of people's lives as a doctor does. The sexual history is also a source of discomfort for students.

> I proceeded to take a sexual history off an 11 year old, when I hadn't taken a sexual history before full stop (Connie, 2).

Connie might have learnt this specific area of the patient case history at medical school, but she has rarely watched others eliciting the sexual case history and never practiced them. The sexual history is not addressed in the student's clinical methods book, The *North-Nanson Clinical Manual* (Richmond, 2001). Sexual stories are usually limited to 'adult entertainment' and are otherwise not part of the public domain. Now students are expected to delve into the sexual practices of patients in a professional manner. As well as these reasons for Connie's discomfort, this patient is young. Connie puts aside her own moral position, taking on the professional persona of a doctor to counsel the patient, as doctors are expected to do (Merton, 1957), and so Connie shows her own shift towards becoming a doctor with her professional behaviour.

Psychiatry

Psychiatry is seen as another low status area of Medicine (Sinclair, 1997). It is the area of Medicine that has probably been most challenged in the literature for its biomedical approach, including the often quoted text *Madness and Civilization: A history of insanity in the Age of Reason*, showing the medicalisation or transformation of insanity into illness (Foucault, 1988). Fox (1979) notes the relative newness of psychiatry compared to other areas of Medicine and the inexact approach to diagnosis within psychiatry. Within the biomedical approach, the psychiatric history and assessment of the psychiatric patient differs from the general medical history and approach. Questions are oriented toward thought processes and behaviours, rather than symptoms associated with bodily function, except where those demonstrate some relationship to abnormal thought processes. Psychiatric patients do not have any 'concrete physical referent' or 'concrete pathology' for students to come to terms with (Sinclair, 1997, p.245). As a consequence the psychiatric history differs from the medical case history.

> My last run was psych which is a totally different history…I had to try and switch back to medicine and remember how to do appropriate things (Andrew, 2).

As Andrew notes, the symptoms about which psychiatry patients are questioned are rarely generalised to other areas of Medicine. Psychiatry stands alone in its specific questions used to elicit the history of the presenting complaint or problem. (The past medical history, social and family history are mostly the same as for the general medical history.) The approach of staff to patients is noted to differ from Medicine generally

> The Psych unit staff are really blunt…that was a really interesting side to interviewing…I started doing it with patients (Cleo, 2).

Cleo describes copying what was done around her and again shows the importance of apprentice-style learning. Being in the environment means she observes and has the opportunity to try what she sees. She learns that there is an appropriate place for this style of interviewing, but this 'blunt' approach does not generalise beyond the psychiatric unit. Sarah notes the apparent informality between the doctor and patient in her psychiatry attachment.

> Again it's just that I'm stunned about what everybody knows and how good they are. With psych I just watch them in action and it looks like

they're just chatting to the person, but they're actually getting a lot of information (Sarah, 2).

This informality belies the skill used by the doctor to gather information from the patient. Having become more familiar with the medical case history, students return to a position of not knowing with respect to the psychiatric history. Shuval (1970) notes students' decreasing interest in psychiatry as they progress through their training, while other researchers claim students place less value on psychiatry as a speciality area compared to other areas of Medicine (Coombs, 1978, Sinclair, 1997). This study is not longitudinal and so a comparison is not possible with Shuval's study. It is evident here that students equally value the work of psychiatrists compared with other areas of Medicine. Sarah argues that psychiatry is harder than other areas of medical practice.

Like I sort of find that the decisions psychiatrists have to make are harder than the medical decisions because they have to base it on talk, whereas you've got all these other mechanisms to help you make your decisions in medicine (Sarah, 2).

A consequence of the nature of the psychiatric assessment is that differential diagnoses and treatment decisions are made according to the patient history and verbal assessment, and not with tests and investigations. In psychiatry, the patient's history is not just a straightforward account from the patient, but itself becomes part of the equivalent of the physical examination (Sinclair, 1997, p. 245). Because of the inherently interpersonal nature of the patient history in psychiatry, students express concern regarding their impact on the patient's mental or psychological health.

You're always worried on psych that you'll say the wrong thing. You want to put everything right, I find I'm worried that I'm going to say something that the patient won't like, might affect their treatment, their progress that they're making (Ingrid, 2).

Perhaps it is that 'much treatment is talking' in psychiatry (Sinclair, 1997, p. 245) that makes students more conscious about what they say. Students are concerned that saying the 'wrong thing' might have a detrimental effect on the patient and they assume that upsetting or challenging patients is bad. This may stem from Practitioner Development where happy patients were satisfied patients, and satisfied patients meant the doctor was doing their job well. However, Hafferty (1991) notes similar apprehensions when students talk to terminally ill patients. His students fear trivialising conversations with dying patients.

Common to both studies is that students feel they do not know enough about what it is like living with death in Hafferty's study, or mental illness in this thesis, to feel comfortable with these patient groups. Certainly patient management and treatment are less clear cut in psychiatry for students as Connie describes.

> I suppose there was that aspect that it wasn't quite black and white and it wasn't about reading numbers and figuring things out. I liked the fact that it involved thinking about the way people's minds work and there was quite a lot of almost arty stuff to it (Connie, 2).

Students learn that there are different approaches to patients, the case history and communication in general across different areas of Medicine. While the differences in types of work in Medicine can be obvious, for example, surgeons operate on people, and physicians treat people with medication, differences can be more subtle. By being in the clinical environment, students see and understand the differences, and also start to accommodate these differences in their own practice across different clinical attachments. Through their experiences students learn to adapt the questions they ask of patients and their style of history taking – according to students, this constitutes an important aspect of learning at this time.

In summary, students are clear that there are differences between general practice and hospital practice, as well as rural and city-based general practice. The relationship between doctor and patient in the rural community differs from that in the city, and so the relationships and participation of the doctor in patients' lives differ from that in city hospital Medicine. As a colleague of the GP, students can be equally drawn into patients' lives. This is a different type of knowledge or aspect of medical practice used by GPs, compared with that gained in hospital Medicine or diseases. Students don't learn it in class or from a book but informally through being in the clinical environment. Students learn that there is heterogeneity in medical practice across inpatient and community-based environments, and this learning goes beyond the diagnosis of diseases which appears as a key learning outcome in the formal curriculum.

Open-ended questions may be more patient-centred but students adapt their history taking depending on the environment, most often reverting to the biomedical approach which will lead to a diagnosis. Students saw in the class-based clinical sessions, doctors using

directive questions that drove the patient's responses to the differential diagnosis, and students informally learn this, and do it in their own developing clinical practice despite their formal teaching to the contrary. The informal curriculum takes precedence over the formal and this has been equally demonstrated with respect to students learning medical values (Stern, 1998). Hafferty (1998) asserts the importance of knowing what students learn as opposed to what they are taught, and this study supports this by highlighting students' selectivity with patient questioning. While aspects of student teaching may seek to broaden the students approach to the patient by encouraging the student to use an open-ended, less biomedical approach to questioning, students respond to the approach of doctors and the goal of Medicine which is often to make a diagnosis. Medical enculturation goes beyond the formal curriculum, extending into the informal and hidden worlds of the medical profession, as the medical student is socialised into their profession.

Understanding the heterogeneity of the case history and the doctor's relationship with the patient is an informal and sometimes even hidden aspect of the practice of Medicine. It is learnt through clinical experience in the different areas of Medicine. Understanding the variation in medical practice between hospitals and community-based general practice and across different specialties, contributes to students' overall understanding of medical practice and patient care. While students graduate to work in hospitals initially, patients receive care across different fields of Medicine. Students understand what and how care is provided in each place, and how one area is part of a jigsaw of patient care.

Student Roles: Gaining access and acceptance

Grant (2000) writes upon starting work as a newly qualified doctor, that he had mastered being a medical student but would now have to learn to be a doctor. Becker et al., (1961), concur and students in this research equally note needing to find a place or role on the wards as medical students.

> If Anaesthetics had been my first run, I don't think I would have had the
> guts to turn up and say, I'm here for the day, kind of thing. But now that
> doesn't bother me. I'll just do it (Trish, 2).

Trish acknowledges that with experience comes a confidence in being in the clinical environment because she identifies what she can do as a medical student. The ambiguity of

being a medical student on the wards remains obvious to researchers who observe medical students (Atkinson, 1981). However, this ambiguity reduces for students in this study. Here Radcliffe and Lester's (2003) findings, that medical students became more comfortable on the hospital wards when they have been there for long enough to know what to do, are supported. The student role in the clinical environment is never explicitly addressed in the medical education literature or in the medical students' course books. Students in this research are told what is expected of them in terms of number of patients to be seen and conditions or diseases to be covered, tutorials to be attended and ethical practice with regard to patients (University of Auckland, 2003). However, students themselves negotiate and learn everything else in terms of the medical work and where they fit into the medical team. Becoming part of the medical team is important because it gives students insights and experience in medical work, and access to doctors and to patients necessary for their learning. Students undertake fragmented aspects of doctors' work participating in patient care. This contributes to students' professional socialisation because students learn how to participate in medical work in a 'professionally and socially acceptable fashion' (Merton, 1957, p. 41).

In the current study students are learning the work of the doctor within the context of the clinical environment. They are also finding a role or place on the medical team. However, their roles go beyond 'learning the ropes' (Atkinson, 1981). While learning about what doctors do and how to do things in the clinical environment, students learn their place in the clinical environment as medical students. In the hospital, students have no role or place in terms of the service of the hospital but they need to be there to learn. Access is important for allowing students to enter and be in the learning/working environment as apprentices (Lave & Wenger, 1991), and medical students are ensured access through passing third year examinations and the administrative organisation of students to attend certain teams, hospitals and general practices. While Lave & Wenger (1991) note an increase in participation of apprentices through the accumulation of time and experience, in the clinical environment students' participation fluctuates.

Students spend only relatively short periods of time on each clinical attachment in their clinical years, and consequently have to renegotiate their participation on each new clinical attachment (Turner et al., 2001). Students learn what they can and can't do on each new clinical attachment. Their role on one team does not necessarily transfer to the next team.

Students want to help with medical work but are still learning and are not sure what they are able to do. Staff on the wards are used to students being present as there are often nursing, physiotherapy and occupational therapy students there. However, students are not necessary for the functioning of the hospital or the team, so need to find a niche on the team. This team varies with consultants, registrars, and house officers on annual or conference leave, or covering night shifts. However, where the students belong in the team and on the ward or in the specialty service or in the hospital generally, is not clear and can change. Students describe being uncertain of their place and role on the ward or team.

> Being able to take on more responsibility and not being that 'space occupying lesion' that you sort of feel. You just feel redundant a little bit (Paula, 2).

A 'space occupying lesion' is a medical euphemism that has traditionally referred to a cancer (Atkinson, 1981). The interpretation in the medical education context has probably changed to refer to a mass that fills space but is without a function or use, and requires energy or input from others. Ingrid reports being told not to be a 'space occupying lesion' by one of her doctors who refers to her lack of purpose or role on the team or on the hospital ward. This is probably the most distant students can feel from being a doctor or member of the team whilst being in the clinical environment.

Students seek a role or place on the ward but have to find or negotiate their role themselves in an environment that doesn't need them. By comparison, in general practice students were more directed in their participation in medical work and reported no tension. In the hospital setting students are cognisant that they are not able to be responsible for patients, and help their colleagues in a busy environment. Students attend tutorials, junior doctor training and education sessions, as well as complete assessments that require them to see patients. Apart from not being able to help they were sometimes unsure how to get access to patients for their learning.

> It was quite nerve-wrecking. We still didn't know where we fit in. It was very much tip-toeing around. 'Is it alright if we see this patient?' and we didn't have much confidence (Andrew, 2).

Andrew's lack of 'confidence' reflects the lack of role and explanation as to what he can or shouldn't do. During Clinical Methods students saw patients selected by the doctor taking

the tutorial. Students would see patients chosen by doctors because they were prepared to see a student and were well enough to see them. Now on the wards students are relatively independent needing to approach patients themselves, and are required to do so for their logbooks and case histories. Through doing this, students find their own role and place.

> I suppose you find a way to be a medical student…In the beginning I felt really useless…like a waste of space…I'm obviously not very useful, but there is some sort of role for me…like sometimes people do like to talk to you about stuff. You can provide a bit of companionship to someone for a little while (Georgia, 2).

Georgia finds something to do and her own place in the clinical environment until she is more certain of her contribution to medical work. While she cannot offer or provide something directly medical to the patient, she provides something else – companionship. Georgia does not acknowledge this companionship as an aspect of medical work. It is through familiarity with the routines and activities of the team and the ward, that students work out how to be more involved in a medical way.

> Just being in the hospital setting more and doing more. You've got a bit more responsibility. They let you do more, even if it's just a blood pressure that type of thing (Tessa, 2).

By being in the environment students see the nature of the work of the medical team. By understanding what the team and in particular the junior doctors do, students are able to undertake small medically-oriented tasks. These tasks are fragments of work which contribute to the team's work and patient care. Even without an official role or position, simply attending and being seen to be there, allows students to participate beyond the learning requirements of the medical school. Importantly this allows medical students to start clinical work. Students are developing a sense of belonging whilst contributing to the team and therefore becoming members of the medical team.

> You should see yourself as a junior member of the team…but it's difficult to offer anything…I think I'm a lot more proactive now…and say 'I'll do this' or 'what do you think I should be doing now?' (Georgia, 2).

Georgia's role is not clearly defined because students aren't integral to the medical team or the function of the hospital. Even house officers who are employed to provide a service of medical care can be unclear about their role (Kendall, Hesketh & MacPherson, 2005).

However, all members of the team have a specific position within the team necessary for the medical team's function, and patient care through their specific responsibilities and duties. There is an overlapping distribution of knowledge in Medicine as in other areas of work where apprentice learning as been analysed (Hutchins, 1996). House surgeons know the patients and details of investigation results, and how to request investigations. Registrars know about the patients, but will also have more advanced knowledge of the diseases, interpretation of investigation results and treatments options. The consultant is expert in the field of one area of medical knowledge, but in some ways may have the least contact with the patient. So the student must find their own place or niche in the team.

Initially, students follow the team or junior doctors and observes. They can be asked to do things or to participate in activities which sanction the students' existence in the hospital.

> It was a memorable case because my consultant actually asked me to help
> him, just me and the consultant alone to do the operation (Nick, 2).

As the most junior member of the team, students are more likely to do more menial tasks such as fetching charts, retrieving test results from the computer and so on. These are low risk or safe tasks that don't involve the student interacting with the patient or assessing them in lieu of a qualified doctor. To be drawn into a higher role as the surgeon's assistant is a significant moment, as Nick has the best, least obstructed view of the operation and is be able to assist the surgeon. This is hands-on medical work. The surgeon will directly talk to and often teach the student, and so the student's visibility to the surgeon is increased. This is access to one of the most specialised areas of Medicine, requiring very specific clothes and behaviours.

Vicky is given a similar privilege with a senior registrar in orthopaedic operating theatre.

> He was covering the nights and there was a femur fracture and he got me
> to put in the drill and stuff like that, which was fun (Vicky, 2).

Such involvement of fourth year medical students in the operating theatre is relatively rare because preference is usually given to members of the team more senior than the medical students. Junior registrars, and even house surgeons and trainee interns, vie for the chance to assist. Students' place as the lowest member of the team is irrelevant because they are working in place of more senior team members. Notably, Vicky refers to the patient

through their medical condition. Her place in the patient's care and medical work is defined by the medical condition, and what the doctor sees that Vicky can do. Assisting in the operating theatre is an affirmation of Vicky's place on the team. Annie repeats Vicky's sentiment.

> I was the one who was holding the mask and standing there and going and fetch things…It was cool, it was nice, good [*being a part of it*] (Annie, 2).

Holding a mask over the face of an unconscious patient means Annie is ensuring the patient is breathing. This participation is important for drawing her into the scenario with her hands physically on the patient, and contributing to the care of the patient. Annie can see what is happening to the patient, and who is doing what and how they do it, while she has her own place on the team.

Because junior doctors try to get as much procedural experience as they can students are less frequently asked to undertake procedures. In the following instance the procedure (a blood sample from the patient's artery) is unknown to Annie, and more advanced than she feels able to undertake.

> [*She*] went you do it and just thrust the kit in my hand, and I was like, I've never seen one done, I don't know what it is, and she was like, oh it's easy. I just said oh no it's alright, I'll just see you do it (Annie, 2).

Annie refuses to do a procedure she has never seen or been taught and so is setting her own limits. This doctor does not know Annie is a fourth year student and assumes she is able or willing to perform this procedure. Annie is seen by the doctor to be a member of the team and has the right to do this test. This indicates it is not only students who are unsure of medical students' place in the hospital; patients and other staff also think students are more senior or responsible than they are.

> You're just taking yourself around and some people are like can you just tell us about this, they've charted this, can you change this and you're like no I'm a fourth year (Annie, 2).

Fourth year medical students have no specific responsibilities for patients and patient care. However, nurses and other staff are unfamiliar with the student's place in the hospital and have difficulty differentiating medical students from junior doctors. This indicates the level

of integration that students achieve, or the lack of discrimination between medical students and doctors, and has been noted previously (Atkinson, 1981). Medical students look like doctors and follow doctors in their work. Their name badges differ from doctors' identification badges but this is obviously of no consequence to staff or patients who approach doctors and medical students alike. As well as nurses confusing medical students for junior doctors, patients also may be confused.

> I explained to him three or four times that I wasn't a doctor but he still insisted on saying 'Hello Doc, how's it going?' and I kept saying 'I'm not a doctor yet' (Mike, 2).

The place and role of a medical student in providing patient care is probably more confusing for patients, than for staff. The ward routines and staff aren't explained to patients. There is an unpredictable to-ing and fro-ing of different teams of doctors into the room. Staff may not introduce themselves and explain their role in the patient's care. Students were instructed in their course books to be clear in identifying themselves to patients (University of Auckland, 2003), but despite Mike doing this, the patient repeatedly addresses Mike as a doctor. Students in this study are clear that they are students regardless of any ambiguity for others. Also, students in this study differ from students in earlier research, who liked to be mistaken as doctors and would not correct the patient who would call them 'doctor' (Shuval, 1975). This may reflect the different time of the research or a cultural difference between countries (Shuval's study being based in Israel).

In general practice, students face less ambiguity than in hospitals. Under the more direct guidance of the GP in a smaller and more limited general practice environment, students are seeing patients constantly with supervision by the GP. They are directed in their work most of the time. The role of the medical student in general practice is not confusing. But within the hospital, a busy environment with many people working doing different things at the same time, students have a variable role on the medical team. Students can do some things (particularly when invited to do so) but not others, and they are part of the team but without independent responsibilities. They are learning to be part of the team whilst learning about, and contributing to medical work. This membership fluctuates with students generally feeling a greater sense of belonging with time as they better understand the work and structure of the work and so are able to assist the team.

In summary, these experiences demonstrate students entering the clinical environment with little sense of their place in the hospital. However, this sense of place develops as students come to understand the nature of medical work and are able to participate. In the general practice setting, students find it easier to understand and participate in patient care. In the hospital, they observe and come to identify what they can offer to the medical team in terms of medical work. The more students participate, the more they learn about Medicine and being a doctor. As they fit into the medical team, others such as patients and staff see the medical students as more able and responsible than they are at this time. This ambiguity is a source of discomfort to students who are not prepared to be considered as doctors yet. As apprentices, students see and participate in doctors' work, and are able to learn while they do so. Their learning and belonging is enhanced by participating rather than standing on the periphery as an outsider.

Third Year Patients versus Fourth Year Patients: Starting medical work

While students saw patients in third year during Clinical Methods, these patients differed from those seen in fourth year. In third year patients were already admitted to hospital, and were medically stable and undergoing treatment with their health generally improving. These patients had been seen by many doctors and other health professionals. Patients were primed about what questions they would be asked and the physical examination that would be done on them. These were 'cold patients', that is, medically stable and practiced in their story telling (Atkinson, 1981). Students note the difference between these patients, and the patients they see in fourth year.

> I really enjoyed acute days and it made such a difference being the first
> person to see a patient (Jenny, 2).

In hospital the newly presenting patient has yet to be 'worked up' – history taken, examination and tests completed, and the differential diagnosis, if not the actual diagnosis, identified. The patient is not familiar with the questions being asked and the mystery of the disease has yet to be solved. The doctor or medical student has the chance of making the diagnosis of the patient's problem if they see the patient first. This is 'hot medicine' (Atkinson, 1981), and students demonstrate acquiring an understanding of Medicine in terms of history and diseases, as well as knowledge of the work of doctors and hospitals by

seeing the patient first. Students know what to do and how to do it. Compared to Clinical Methods in third year, students have progressed. Their increased participation gives greater opportunity for further learning.

> It was quite good going down to ED [*Emergency Department*] and doing your own histories and examinations and then present the case to the registrar. That was really good. You actually felt you were learning something. You can actually do something now (Marie, 2).

> This year we are probably more competent…so we can get into more detail, like ask very specific pathology of the symptoms and try to put that with the textbook (Nick, 2).

Taking the case history and physical examination from a newly presenting patient is a sign of increased professionalism compared with writing case histories for academic purposes. This is contributing to medical work as Marie notes. Presenting the case history to the registrar offers her the chance to learn through the registrar's questions. This is more immediate than a case history written over some time, and returning graded. Marie has the chance to return to the patient and fill in any gaps in the history or examination, but is otherwise writing it immediately after seeing the patient. This is a sick patient who needs to be cared for and she is now able to 'do something' to help, which shifts her into a professional role.

In terms of learning, Nick is tying together signs and symptoms of the patient, and directs his questions to clarify the patient's disease. He attempts to understand and integrate the patient's presentation of the illness in conjunction with his textbook learning. The patient's disease drives Nick to learn the textbook knowledge around the disease, but this textbook learning now is contextualised by a specific patient. As students progress they shift from taking their own notes for a case history, to writing up the hospital paper work.

> As you moved on, you start writing up in the admission and discharge planners and then get those signed off and checked (Mike, 2).

The 'admission to discharge planner' is the set of hospital forms that are completed for every patient. It includes the patient medical history and examination, and is placed at the front of the patient notes. The admission to discharge planner needs to be checked and signed off by more senior staff not only for the benefit of the learning student, but also for medico-legal reasons. 'Routine forms of medical practice will secure medical adequacy'

(Måseide, 1991, p. 556), and help minimise the doctor's risk in their practice. The standardised presentation of the patient story as the patient history, and the examination, is reinforced by the use of standardised paper work. Completing the paperwork denotes a level of confidence and involvement in medical work that is more advanced than when the student first entered the hospital. To the extent that seeing real patients differs from practicing on each other in third year, seeing patients in fourth year requires a level of professionalism of students.

> You do them in third year but it's not the same. You didn't have the same pressure to get them right I suppose. Whereas if you are clerking people you need to do them properly (Mike, 2).

Eraut (1994) notes that learning not only takes place as a result of conscious effort but when that knowledge is used as Mike notes. Knowledge is transformed by the learner in the process of using it. For Mike the context or situational aspect of doing the paperwork as a doctor alters the experience of doing the case history and physical examination. He no longer writes it for his own learning. The case history is now a document that represents patient care and staff will read and scrutinise. Omissions, mistakes and differences will be documented by successive staff.

This level of participation in hospital work represents more than an ability to complete a patient history and examination. Students understand what must be done to 'admit' a patient, and how it should be done. They know their way around the admitting wards and where to find patients and paperwork. Inherent in this work is the coming together of the student's knowledge of how to take a case history, as well their knowledge of diseases, signs and symptoms. They can follow the patient's story and transpose it into the medical case. Students perform the physical examination and identify the patient's abnormal findings, and then continue to present the patient with his or her medical problem to qualified staff. Permission to undertake this work indicates acceptance by staff with implicit acknowledgement of the student's ability to be able to contribute to medical work as a novice doctor. This acceptance demonstrates to the student and others that the student is shifting into the role of the novice doctor.

On occasion a student discovers a medical problem of the patient that differs from what the patient had come to hospital for.

> He came in and he had cellulitis on his leg. It turned out when I was examining him that he had left sided weakness...He had a CT of his head and he ended up having metastases in his brain (Georgia, 2).

On further questioning, Georgia reports she examined this patient in terms of their neurological system because she wanted to practice physical examinations. After finding the patient's left-sided weakness, she asked if the patient had noticed it. The patient said he had but had been too worried to present to a doctor with it. He acknowledged his concerns only when she had identified a problem. Georgia's approach demonstrates the way in which students still practice upon patients, and do not limit their examinations to the presenting problem, as doctors do. While students are undertaking medical work they are able to take their time with the patient, and are not yet pressured as doctors are, to see patients quickly and be circumspect in their approach.

In summary, students are becoming familiar with the 'objects' within the 'distinctive lifeworld' of Medicine (Good, 1994), including the verbal and written case history with its nuances across specialities, and the differing practice of Medicine between hospital-based Medicine and community-based general practice. They see patients as doctors do and contribute to the work of the medical team or general practice. At this stage of their training, professional socialisation is facilitated by the student initially becoming a member of the medical team. The student observes and undertakes elements of medical work, as an apprentice under the supervision of doctors.

Learning about Medical Work

As well as learning how to do the work of doctors, medical students describe the learning they gain from others and from simply being in the environment. Students discuss the interactions and observations made of other doctors and how these other doctors provide medical students with information about the hospital environment. This information is not formally taught, and reflects each individual hospital ward or aspects of patient care.

Learning basic systems like the computers enables students to participate and be helpful. This also assists students to develop a sense of role and place on the medical team. Each hospital differs in its computer systems, (which shows blood test results and old notes for patients, as well as other work and Medicine-related information), how to order various

specialty investigations, how to request patient reviews from other services, and all its administrative requirements.

> You have to learn about the computer. I tended to ask the TI [*trainee interns*] and house surgeons (Leah, 2).

Because this is not general medical knowledge but is specific to each clinical environment, it is rarely formally taught. This is codified knowledge that is based within the workplace or organisational knowledge that is learnt informally as evident above (Eraut, 2004a). Leah asks those around her; trainee interns and house surgeons are the least threatening to approach, and also those doctors who students spend most time with.

> I had a really cool house surgeon for surgery, so I did most of my learning off them because I could ask them questions. They were only first year house surgeons but they seemed to know heaps (Trish, 2).

Trish's perspective of junior doctors knowing 'heaps' reflects two points about medical students place in the clinical environment. First, relative to the new medical students, junior doctors do know a lot. Second, the type of knowledge junior doctors know is not knowledge of disease and treatment in which neither student nor junior doctor are expert yet, but the knowledge of the work environment. This knowledge is where services, people and things are located, how to get things done, who to talk to, what happens where and when. Junior doctors are part of the medical team and therefore, community of medical practice, knowing and helping medical students to work in the hospital. The medical team as 'a community of practice' contributes different aspects to students learning (Lave & Wenger, 1991). There are different levels and areas of expertise on the medical team, and each member can provide something to students learning, and understanding of medical work. Junior doctors are knowledgeable without being expert, as the consultant is.

> I spent quite a few times with the house surgeon. I followed him around and I did quite a few procedures like taking blood. He also told me how to read a result from the lab and what I should do if I get an abnormal result (Nick, 2).

This teaching is not part of a formal session but happens because Nick is there at the right time. Medical students in this study have been taught how to read laboratory results but relearn within the context of a patient and the clinical environment. Registrars also teach

students, although they have a narrower field of practice, limited to only one area of Medicine. The examples below relate to students' orthopaedic attachments.

> The registrars, again we could ask them questions and they suggested stuff…The house surgeons, they went through, not so much the orthopaedic stuff, but how to listen to heart and lungs (Peter, 2).

> My registrar was really educational. He basically took us along and explained to us and we can ask questions when we didn't understand (Nick, 2).

Learning how to hear heart and breath sounds takes time and practice, and students are able to continue to learn whilst learning other aspects of becoming a doctor. Students note that as well as relearning what had been learnt in the preclinical years, they now learn information that is relevant to patient care but has not been covered at medical school.

> We got this chest x-ray of this guy who had a Hickman line... and we were like 'What's a Hickman line?' Willie the registrar was like 'Come on we're going to play 'Name that Line.'' We went around the ward…He spent two hours playing name that line and we did a couple of examinations on patients (Vicky, 2).

This is informal and deliberative learning that will not appear in any examinations, but it is important for the students' understanding of how patients receive treatment. This teaching session is directly and immediately clinically relevant, spontaneous, and based upon the students' learning needs as identified by the students and the teacher. The impromptu nature of the teaching means it is flexible and can be based around the opportunities offered with patients.

House surgeons and registrars often provide informal teaching to medical students. The hospital medical hierarchy doesn't consist of solely a master-novice relationship. Rather there are more levels involved, and so a house surgeon or registrar is no longer a novice but is a relative expert with knowledge to offer the student. The expert or consultant in this case, has such a detailed level of knowledge that they can better teach those who already have acquired a certain level of expertise. The novice is still learning relatively basic knowledge, and is not at an appropriate level to benefit from the expert's teaching (Lave & Wenger, 1991).

The areas of learning discussed in this section tend to reflect the daily work and activities of the more junior doctors, as opposed to the consultants. Consultants are expert in their area and have relatively defined schedules. Junior doctors have occasional commitments such as clinics but spend more time on the wards organising their own work around the care of the patients. This work can be ordering and following up tests and investigations, requesting reviews from other services, attending family meetings and completing paperwork. This is work that students can assist with that will be relevant to them when they graduate.

Learning about Hospitals

Students' learning includes an awareness of the more global environment of the hospital.

> It is sort of like a little town in its own right, all the goings on there…because it's going 24 hours. There's always a lot of people in there. More than that, there is the catering that has to take place for the patients and the cleaning and the linen. Everything the processes that take place in there (Andrew, 2).

To understand the bigger picture of hospital life is important because this gives a context to the practice of the Medicine and the needs of patients. This is the future work environment of Andrew and he learns about the hospital by being in it. No where in the students' course and handbooks is this identified as an area of learning; it is informal learning (Hafferty, 1998). Despite it not being stated as important that students know how hospitals function, it is immediately necessary because students need to be able to complete logbooks, case histories, and see patients. To complete this academic work, students need to know when and how to see patients, attend clinics and ward rounds and so on.

> Osmosis. Just soaking it up on wards and seeing and watching, just keeping all senses open. Seeing what they do, seeing the charts, seeing how the nurses run, who runs what, what does the charge nurse do, what are the nurses expected to do, what are the house officers supposed to do and stuff like that. Just basic running a hospital (David, 1).

Osmosis is a scientific term that refers to the flow of molecules from more densely occupied areas to less densely occupied areas. David uses this as a metaphor for the flow of information to his less knowledgeable mind through keeping all of his 'senses open'. He

acknowledges the need to understand the way the hospital works and how things happen, in his becoming a doctor. Anything and everything that he could learn is useful.

> It was quite a big learning curve, just seeing basic things like people writing in notes…and things like that. Just learning all the abbreviations, learning how the charts work, just basically getting into the routine of how the hospital works (David, 2).

David demonstrates his learning by acknowledging the intricacies of medical practice and the routines and processes of hospitals, which is not knowledge many people have unless they work in the hospital. It is important that language and jargon is assimilated and understood because this is the system of written and verbal communication in Medicine. Students learn it where and when it is of most use to them. As well as the way the hospital works students' develop an understanding of what happens to the patient as they enter the hospital.

> You have a better idea what happens procedurally. Like the patient comes in, they are triaged, they see a junior doctor, are reviewed by a registrar and they make a decision as to whether they get admitted…whereas at the beginning you have no idea...Even when you're just filling in 'Us and Es' [*urea and electrolytes – blood tests*] on the blood form is a bit of a mission and where do you get stickies from…by the end I felt pretty good in that respect (Mike, 2).

Students learn through observation and this includes the details of medical work, such as where to find what (patient labels or 'stickies') and how to order patient blood tests. This is similar to learning how to use the computers. While this is systems knowledge and not specifically medical knowledge, Mike is learning about how to work as a doctor and not just what doctors do. However, not everything is clear to medical students at this time.

> I suppose I still don't understand how they're rostered with their hours and what time they're meant to be there. Also, how they're rostered to AAW [*acute admitting ward*]. So far as ED [*Emergency Department*] and things like that…who patients go to (Jenny, 2).

How these particular systems work confuses students because the rosters are complicated and each clinical attachment on every service in every hospital differs from the others. As well as students, most ward staff do not know how the rosters of doctors work. How each team on each clinical attachment works – on-call, consultant ward rounds and clinics also

varies across specialities. This is the routine work of the ward or team, and has to be learnt by students on each clinical attachment.

> There are so many things going on all the time, and just as you get comfortable you go into another run. So you're meeting new people and the dynamics there and at sort of the bottom of the hierarchy (Ingrid, 2).

Although students are lowest on the medical team, being at the bottom of the hierarchy probably means knowing the least, as much as being the lowest in the hierarchy. Ingrid is the least knowledgeable with respect to the team's work and not just medical knowledge. She remains the least knowledgeable but this is less important when she can help with the team's work. Knowing how the clinical environment works – what happens to patients, how to order tests, and how each team works is important learning because it enables students to see patients, and so meet their assessment requirements. Being on the ward and a part of the team provides the background or context for understanding their future work as doctors.

Conclusion

The underlying science of Medicine may be common across all of medicine, but the work of doctors varies across specialties in terms of the different approaches to patients and patient care, as well as the medical work itself. Knowing this is important for medical students to understand the overall organisation and function of medical practice, as well the more detailed aspects of how doctors' work is separated and organised, and how patients are cared for in Medicine. Students learn and understand this overall perspective of medical work, as they move between clinical attachments.

This chapter has explored student learning beyond the patient case history and performance of procedures, and shows students learning the different approaches across different speciality areas of Medicine. The diversity of the medical history and the different clinical environments becomes evident to students through their clinical attachments. These are areas of informal and hidden curriculum or learning. Students are not examined on this knowledge and it is not identified by the medical school as necessary in curriculum documents. However, it is necessary for doctors to be able to work in the clinical environment. This is knowledge about the clinical environment and medical work, and its

diverse nature represents the heterogeneity of Medicine and medical practice that doctors work around everyday, in providing medical care. Understanding these differences permits doctors to seek specialist opinions and refer patients across specialities, despite working in only one area themselves. After graduation, all students initially work in hospitals in specialities that must draw upon the expertise of other specialities. Being familiar with the varying nature of medical practice and care gives students an overall understanding of patient care beyond their own area of work. This heterogeneity of Medicine is learnt through experience in the clinical environment.

The clinical environment provides the medical student a context needed to learn and work towards becoming a doctor, learning and undertaking aspects of medical work as apprentices to more senior staff. As befitting apprentice-style learning, students learn the nature of medical work most often from those closest to them, that is, house officers and registrars. These are the people in positions closest to them and are doing the work students will do in the future. Lave & Wenger (1991) suggest that masters or experts are not necessarily the best person for novices to learn from. Such is their level of expertise that they are able to focus on detail that is beyond the scope of the novice who is still mastering relatively basic components of work.

Gordon et al., (2000) acknowledge the importance of preparing clinical teachers for their role of teaching students without identifying who in the clinical environment provides students with clinical teaching. Junior doctors are important for clinical teaching, and perceive teaching as important in their role supporting medical student learning (Busari, Prince, Scherpbier, Van der Vleuten & Essed, 2000). The current study supports this conclusion because students identify house officers and registrars as the colleagues they spend time with, talk to and learn from.

In a study set in Scotland, Kendall et al., (2005) investigated first year house officers' experiences of the transition into their first year and found similar issues for their participants to those described in this chapter. The need for junior doctors to have a role or clear remit, feel supported, to feel stretched but not overstretched, and to feel included as part of the team are all highlighted as important. Learning the system on each ward advantages the junior doctor in their work. Kendall et al.'s (2005) research and the current

study highlight the informal and unspoken nature of doctors' work and medical student learning in the clinical environment.

The professional socialisation of medical students encompasses the aspects of learning highlighted by students in this chapter. Students become members of the medical team, undertaking and learning about medical work. They are eventually accepted and participate in patient care, eliciting the case history and undertaking the physical examination. However, students also see and work in different clinical settings and this broadens the student perspective of the nature of medical work. Students learn to adapt their approach to communication skills for example, through experience. Importantly the professional socialisation of medical students extends beyond the curriculum learning outcomes. Students come to understand the clinical environment as a place of systems and processes, undertaking medical work and becoming part of the clinical environment, the medical lifeworld.

Chapter 8

Being in the Clinical Environment:

Relationships, risks and responsibilities

Introduction

> Without a context in which you learn you remember very little, and you just can't see it in the wide context, because medicine, being a doctor I think is an art…being able to gather information from all kinds of sources…because every patient is different (Ingrid, 2).

As well as undertaking aspects of the work of doctors, students are learning about the nature of medical or clinical work. This includes the less specific but in some ways more meaningful relationships with patients. Students learn the consequences of illness, diagnosis, poor prognosis and death through more interpersonal or social clinical experiences with patients, or other people in the clinical environment. This happens in the context of students meeting assessment requirements for their clinical attachments, including attending tutorials, completing logbooks and other requirements.

Students' relationships with patients are central to this chapter and therefore central to students shift into the clinical environment and their becoming members of the medical profession. These relationships are both professional and personal, and have a significant impact upon students at times. While being socialised into the medical profession, students' clinical experiences affect them personally, and there are instances when the line between professional and personal blurs.

Students' clinical experiences reflect more the nature of their future work as doctors, than those experiences in preclinical years. The less formalised approach to medical teaching in the clinical years also reflects that of junior doctors. For medical students much of their learning is not structured, planned or examined or even documented by the Faculty. The learning covered in this chapter is more informal or hidden curriculum in nature than formal curriculum, and relates to the 'how' of being a doctor. There is no single teacher-

student relationship but many relationships between the student and doctor or patient. While clearly being fourth year medical students in terms of their university status, the status of students in the hospital is far less clear. They negotiate their way through this with patients, as well as hospital staff.

Patients

As has already been shown, patients provide medical students with a context for their previous medical studies as well as their continued or ongoing learning.

> Traditionally, however, the role of the patient in medical education has been passive, with the patient acting as interesting teaching 'material', often no more than a medium through which the teacher teaches (Spencer, et al., 2000, p. 851).

These authors go on to note that there has been a lack of research into what patients contribute to teaching in medical education. This is remiss considering the central role patients have in medical students' clinical experiences. While this study does not explore patients' experiences, the patient's place in medical student learning is highlighted and the passive role of the patient will be challenged.

Patients as People

In this study students often see patients without a teacher present unless they were receiving bedside teaching from a doctor. The student-patient relationship is not simply a learner-patient relationship whereby the student uses the patient solely for developing their medical expertise. While the patient represents students' access to further learning, and learning that is relevant to becoming a doctor, students value the lay or interpersonal interaction with patients. This is the informal chat about life stories and experiences of people that is beyond the medical problem. Patients are appreciated as people, and not simply as objects and carriers of disease.

In the medical sociology literature, the patient has often been treated as a single, common entity and the relationship between the doctor and the patient has been treated as a simple dyad (Atkinson, 1995; Atkinson, 1999). Others have criticised the doctor-patient relationship as 'over-researched' (Sarangi & Roberts, 1999). By interviewing students in the current study, patients are seen through students' eyes as individuals, and not as a

generic 'patient' or medical object or part of a homogenous group. It is seen that students remember individual patients' stories and don't see them solely as medical cases.

> I like talking to people, I know it's not strictly medical, but about their lives as well and usually some of the old people have really interesting stories about their lives and it's quite interesting hearing about a different era. They can be really interesting. I end up talking a lot more about that than the actual medical problem (Cleo, 1).

> At the moment it's more the people that I enjoy being with, rather than the actual condition that was going on (Sarah, 2).

Sarah and Cleo demonstrate students' interest in patients as people. The stress of talking to patients in the clinical stages of their training (Firth, 1986) is eased for students when they can engage in casual conversation with the patients being approached as people.

Rapport and Professionalism

As well as medical students appreciating patients as people, and not only as medicalised carriers of disease, students in the early stages of their clinical training both identify with some patients, and equally find themselves feeling awkward at the differences between themselves and patients. Students find it easier to relate to patients when they have common points of identity with the patient.

> We had this Maori lady and it was really easy. She recognised me as being Maori so we were just chatting away like nothing (Chris, 1).

> At the same time, the family was fine with me being there because I was Maori and I knew what was going on and stuff. I had only been in the community for a couple of days (Vicky, 2).

In these two quotes, ethnicity serves as the common meeting ground and transgresses differences in professional status between patient and medical student. Chris and his patient undertake usual Maori protocol of identifying common or related whanau (family) and whakapapa (genealogy). This identification and verification of who the student and patient are in relation to family and each other, establishes a rapport between them that enables Chris to continue to take the patient's history.

Soon after Vicky's arrival into a rural community a Maori patient dies. The community knows she understands tikanga (protocol) and she is accepted as part of the tangi (funeral)

along with the GP. Common culture eases students' apprehensions about being with patients because the patients accept them regardless of their place as medical students. Even relatively superficial connections such as shared occupations can provide an entrée for the medical student.

> He was a younger man and I actually got on with him really well as my summer job was exactly what he does up north with logging…so we were able to connect a bit there (Andrew, 2).

This shared occupation connects these two men, and they talk about their respective experiences, each sharing something of themselves and establishing a rapport. As well as common jobs and culture, shared religion could connect student with patient. Connie has this experience in her general practice attachment.

> I saw a Christian guy who I responded with to some extent from what I believe because I could empathise with what was happening to him, He had become a Christian and his wife was a Mormon or Jehovah's Witness. They were having huge problems with religious conflicts (Connie, 2).

Connie draws on her own personal experience and belief systems in her interview with the patient. Her contribution to the consultation expands beyond her medical training to personal knowledge. Connie's quote and Sarah's earlier description of using personal knowledge are examples of personal engagement in medical practice that are probably not rare, but they are infrequently addressed or discussed in the medical education literature.

Good and DelVecchio Good (1993) note in their observations of medical students that students question personal boundaries with respect to patients. How much to reveal of themselves and the extent to which they intrude upon patients bodies and life histories are all dealt with on an individual level, by each student. Clinicians and students draw on previous experience and experiences from other areas of their lives or medical experience, and utilise them in their clinical practice. In the medical education literature it is usually clinical experiences that are discussed with respect to making diagnoses (Barrows & Feltovich, 1987). However anecdotally, doctors describe drawing on their experiences with patients to shape their practice in terms of clinical decision making as well as in terms of personal, ethical and legal decisions. Students start to do this informally without directly addressing it with their teachers.

Students make connections with patients on a more personal level. They draw on personal knowledge in developing rapport and even addressing the patient's medical problem. This use of personal experiences to make connections with patients parallels students' own interest in patients beyond the disease. This is going beyond the mechanical task of eliciting the patient history. While students medicalise the patient to learn about diseases and the case history, they concurrently personalise their medical practice making personal connections with patients and drawing on their own personal experience.

Just as students make connections with people, they also must relate to people who are markedly different from them.

> I was spending time having these nice little chats with rapists with bipolar affective disorder and these guys whose lives were real different from mine. That was quite interesting (Connie, 2).

> I was kind of scared of old white people. I'd never been around any and they look different (Brian, 2).

Patient's physical appearances and backgrounds highlight differences between student and patient. Connie and Brian both went on to say they were no longer troubled at the differences between themselves and their respective patients. However, they show the range of patients they interact with and the potential differences they overcome. While students may have considered these issues in their Practitioner Development course, these experiences are distant from that teaching. It is no longer theoretical but real involving patients. Students put their teaching and learning in these areas into practice with patients, and manage patient consultations and relationships like doctors do, demonstrating a developing professionalism.

In summary, patients represent a focus of student learning and are part of medical students' community of practice. A community of practice

> is a set of relations among persons, activity, and the world over time and in relation with other tangential and overlapping communities of practice. A community of practice is an intrinsic condition for the existence of knowledge, not least because it provides the interpretative support necessary for making sense of its heritage (Lave & Wenger, 1991, p. 98).

When students relate to patients it is often because medical students share membership in cultural, religious and occupational groups with patients, beyond the clinical environment and these groups represent other communities of practice. In each instance, there is a shared understanding between the medical and non-medical members beyond the medical knowledge. While this doesn't necessarily relate directly to medical knowledge for the apprentice or student, it does impact upon it; it eases anxiety on the student or the patient's part, with regard to the medical consultation. This consideration of a community of practice occurs only when students and patients have something in common. None the less, students must act professionally like a doctor, and relate to patients they do not have obvious connections with. Students, like doctors, are expected to treat all patients well and equally, regardless of their personal emotions and prejudices (Smith & Kleinman, 1989). This aspect of practice is not about diagnoses and diseases, but about doctor-patient relationships and professionalism which students are undertaking. This area of learning demonstrates the importance of experiences in the clinical environment, for student learning. Students manage individual relationships with patients in a way that is responsive to the patient's background and medical problem.

Challenges to the Biomedical model

Sad and Tragic Experiences

The clinical years have been described as a 'confrontation with human tragedy and misfortune' (Conrad, 1988). While Medicine is about illness and death, beyond the anatomy laboratory there was little contact with these areas for medical students until fourth year. Medical students come to Medicine to 'help people' and 'make a difference', but they can be challenged in these goals. Helping people is often enacted through the biomedical model by identifying the disease of the patient and treating the patient accordingly, but when patients cannot be treated and can only be cared for, the biomedical model is put aside. Rather than acting upon patients, students and doctors sometimes need to 'be with' patients.

Aside from learning how to elicit the case history, diseases, signs and symptoms, students deal with far more personal and sad stories in their contact with patients.

> I'm a lot more sensitive than I thought I would be…For my last day I had a lady tell me that she didn't want to live anymore and she had had enough and was in pain...I didn't know what to do (Mike, 2).

Mike demonstrates that students may have a limited understanding of biological illnesses but they are able to understand patients' emotional responses. This is supported by other researchers (Helfer, 1970). Mike is concerned at what he can 'do' and so highlights the tension between 'doing' and 'being with', particularly in the context of patients' death and dying. As noted earlier, students felt they were becoming doctors or could see themselves becoming doctors because they could now 'do' something like a doctor. Feeling useless in the clinical environment is a significant stressor (Radcliffe & Lester, 2005). Students' clinical methods teaching and their teaching in fourth year were focussed upon doing. This doing has been seen by earlier sociologists as a defining feature of doctors and Medicine (Freidson, 1970). For students it includes doing histories, doing physical examinations, doing blood tests, and assisting in the operating theatre.

Students receive teaching on self-care in their preclinical years in the Practitioner Development course but this occurs before their contact with patients. Students are warned in their fourth year course book that they will see patients who will not get better and they may see dying patients (University of Auckland, 2003). This warning is all that students formally receive in their clinical years.

> She was only 60 and she had quite severe Parkinson's disease and was unable to walk. She used to be really active and doing lots of things, playing sports and she's having dementia. Her husband can't cope so you think that's all, but no, I ask her how her children are and they've all died. It's just too terrible and you don't know what to say to things like that…The other man I met who had been born with congenital adrenal hypoplasia. He was on long-term steroids, so he had long-term problems with infections and things like he had broken every bone in his body just about. Then I asked have you got brothers and sisters? How are they? 'Oh my brother had the same thing as me but he was electrocuted when he was eleven…I've got Crohn's disease and I've got some kind of arthritis…Those two patients I'll never forget. I saw them both in the same day (Leah, 2).

For Leah these two patients' stories transcend the medical history focussed on the current medical problem. These are life stories centred on loss and tragedy and Leah describes a strategy for managing these distressing stories. She moves from the saddening medical-

related problems of declining health and loss of self, to a more social conversation. Because of the extent of the patients' personal losses, Leah is unable to change the tone of the patient conversation to a more positive tone. Students are unprepared for such disclosures from patients perhaps because they are unpredictable in their timing and nature. Also, these conversations go beyond the strict confines of the medical case history which students are encouraged, by teachers and through the course books, to focus upon.

These stories and events affect students deeply, but as in other research students are often poorly supported in managing their emotional responses (Rhodes-Kropf et al., 2005). Wilkinson and Harris (2002) investigated trainee interns who were struggling in the final year of their training. They identified personal illness as a factor limiting students' professional progress, but the impact of other emotionally challenging events remain absent from the literature.

Doctors learn that patients disclose sad stories but students, as novices, struggle to cope. Learning how to handle their feelings when confronted with sick and dying patients is important for students, particularly in maintaining empathy with patients (Rosenfield & Jones, 2004). Medical educators have focussed on empathy in medical students because it

> Is considered an important element of all caring relationship, whether social or therapeutic. In the clinical context, positive associations have been shown with a range of outcomes including enhanced doctor-patient relationship…diagnostic accuracy (Spencer, 2004, p. 916).

Doctors and medical educators strive to define and measure empathy (Hojat et al., 2004; Spencer, 2004) and teach empathy as a 'skill' that can be learnt through different styles of patient interviewing (Benbassat & Baumal, 2004). This often psychologically-based approach suggests that over-identification with a patient, or fear of getting involved with a patient, can result in the doctor or students developing maladaptive responses which reduce a doctor's or student's empathy with future patients (Rosenfield & Jones, 2004). Becker & Geer (1958) proposed sometime ago that there is a social element to students' managing their feelings, noting that the culture or environment impacts on students' expression of feelings. This is not usually acknowledged in the more recent literature with medical education researchers treating empathy as a solely psychological concept and not considering the effect of the student's surrounding environment on the expression of such

emotions. In the current study, students express empathy and concern at the plight of patients, but don't relate their previous self-care/reflective practitioner training to their current clinical experiences. The clinical environment does not align with the preclinical teaching, and the preclinical teaching is distant from students' experiences.

Even when a tragic story fits into the medical history such as the diagnosis of cancer, the patient's response could challenge the student.

> There was one guy who really sort of upset me a little because I went and talked to him in the second night after he had been admitted and they were doing all these tests on him…and found he had metastatic pancreatic cancer so I think he had two or three months to live. When I first talked to him he was full of hope that it was going to be nothing much and he thought he could go home (Cleo, 2).

Cleo and other students describe struggling to manage their emotions. Cleo struggles with the patient's change from hope to a sense of terminality in the context of Medicine and wanting to help people. Patients who no longer want to live can also challenge students.

The patient who doesn't want to live anymore or who has a prognosis where living is going to be limited in time is a different prospect for the doctor and the medical student. Rather than offering a cure, Medicine can offer symptom control, caring and relief, usually through palliative care services. The limited lifetime of a patient's life and the patient's awareness of this knowledge is expressed with discomfort and unease for Mike. To not be able to 'do' something for a patient may refer to the inability to cure the patient. It also may reflect the tension for Mike in not knowing what he can or should do when there is actually nothing to be 'done'. Mike and others still have very little or no experience observing others in this position, from their place as a medical student. Mike cares about the patient and considers his own vulnerability in this situation.

There is a sense of intimacy when the patient and doctor or medical student engages in a conversation on death. Unlike a class on death and dying or communicating bad news, there is no forewarning. There is no control by a teacher and no safety in the numbers of a group or class. Compared to the medical history of questions and answers directed toward making a diagnosis, these conversations are a contrast.

> For the caregiver, there is a great fear of entering fully into another person's agony, and being overwhelmed by suffering, chaos and disintegration (Barnard, 1995, p. 22).

It appears from students' experiences, that what the patient requires, apart from information and assurance that symptoms will be alleviated, is 'being with' or caring. In Medicine, 'being with' is in some ways the opposite of 'doing'. It is sitting beside the patient and following the patient's lead in conversation and silence. It contrasts with the activity and interventional approach of Medicine. Students' self-perceptions of becoming a doctor have been around their ability to 'do' things – the case history, getting patient charts and so on. Students are challenged because they are not undertaking activities with respect to some patients. Students in this study voice their uncertainty with what to do when the patient says they no longer want to live. Not all students express discomfort at a patient's acceptance of death.

> He just told me he wanted to die and his life had been great and he had no worries about dying and stuff. He was OK about it, so it didn't really bother me (Leah, 2).

The 'matter-of-factness' of the patient seems to protect Leah from being 'bothered' at the patient's acceptance of dying. There is no disclosure or emotion of a sad and hard life, and there are no emotional triggers for Leah. While most students are on their own in these situations, they do occasionally observe a doctor-patient interaction.

> There was one lady that had end stage lung disease, from sarcoidosis. That was just really sad. She had a really good relationship with the consultant; an ongoing relationship for years and years and that was quite nice to see (Georgia, 2).

Georgia is reassured by the longevity and continuing relationship between the doctor and patient. As an observer to the relationship between the doctor and patient she is not responsible for the patient.

Soelle (1975) suggests that patients, who are suffering or dying, seek reassurance from the doctor that they will not be or are not alone in their suffering. However, students who are confronted with these patients are in a different position to that of the doctor. This maybe the student's first medical end-of-life experience and students are still learning what Medicine and doctors can offer the patient at this time. They have had little opportunity to

witness doctors sitting and 'being with' patients. They experience an emotional vulnerability whilst trying to function as professionals. This challenges the idea of 'detached concern' unfolding 'with impressive orderliness' (Fox, 1989, p. 85). Fox describes 'detached concern' as the physician being able to bring 'objectivity and empathy, equanimity and compassion' into balance with one another in treating patients (ibid). Her description belies the experience of medical students' own descriptions of their experiences in this work which demonstrates students' greater sensitivity and less surety of students' role than Fox (1989) identified.

Lave and Wenger (1991) suggest that apprentices can experience 'benign neglect' when they are left by their masters or when work practices determine the structure of the apprentices' learning. This is framed as an opportunity for novices to work together without a master to shape their learning. In this study, when medical students deal with sad and tragic patient events or when patients die, the principle of benign neglect seems to be relevant. Rather than benign neglect having positive results, students seem to suffer and manage their feelings on their own. The consequences of this neglect are also seen in the next section.

Death and Responsibility

Being responsible at this early time in training can have consequences for students and their professional development or socialisation particularly when it involves life-changing events such as death. Dealing with and being around sick people means that occasionally students, similar to doctors, are faced with a patient's imminent death. Being in a situation where they must deal with death and dying is stressful for medical students (Firth, 1986). Atkinson (1981) briefly notes only one episode in his observations where a student was involved with a patient's cardiac arrest, and subsequent death. The impact of this event upon the student is not remarked upon at all. In another study, the sudden death of a patient in front of medical students during teaching is presented only within the context of students' sense of future responsibility for patients' lives (Becker et al., 1961). Students in this research have experienced the death of a patient.

> I actually had a bad experience…There was a chap who turned out was having TIAs [*transient ischemic attacks or minor strokes*]...I had been told 'He's stable, go and clerk him'. I met him and I met his family. He

had a stroke later and it turned out that I had been the only person who had really been to see him…I was alone with a lady when she had a haemorrhage and died…I didn't know what was happening so I dashed off and told the registrar (Mike, 2).

Mike is lead to believe that these patients are well enough to be seen by him, a student. However, being the only medical-person to have seen the patient, or being with the woman when she dies makes him feel responsible. Neither patients' death would been averted by being seen by a qualified doctor, but Mike's lack of knowledge about what is happening and what to do scares him, and demonstrates the appropriateness of Becker et al.'s assertion that procedures, and in this case responsibility for patient care are

'parcelled out differentially to persons of different rank in the medical school hierarchy. Students are allowed to do progressively more each year, interns still more, and residents still more with each year of their training' (Becker et al., 1961, p. 230).

To be in a position of responsibility with respect to a patient's death appears to be beyond medical students' ability or experience. Even house officers (the equivalent of the intern) and occasionally registrars (residents) usually undertake to consult with senior staff before deciding to intervene or not in a patient's death. What is notable in its absence in Mike's story was the lack of support he received. Rather than 'benign neglect' as suggested by Lave & Wenger (1991), there is a lack of sufficient emotional and practical support which is not constructive in terms of Mike's learning. Although, students learn as in the anatomy laboratory, that this is what happens in medicine – students can expect to manage distressing experiences on their own.

The long-term effects on students experiencing the death of a patient, remain unknown (Rhodes-Kropf et al., 2005) but there are concerns that students may develop maladaptive responses (Rosenfield & Jones, 2004). The short-term consequences on Mike are notable; while he questions his ability to become a doctor, he does not discuss these incidents with his teachers. Having felt out of his depth in these situations he changes his approach to his work in the hospital.

I felt safer…just doing practice clerks on people on the wards (Mike, 2).

Eraut (2004b) suggests that learning in the workplace requires students (in this case) to be challenged and supported in their learning. As seen with Mike, a lack of support can result in a decline in the student's confidence and learning, and he returns to seeing ward-based patients. While Mike returns to seeing stable patients as he had in third year, he is now doing it for himself and better able to determine and shape his learning. To the outsider, the context and work may look the same across the third year and fourth year, but Mike's place in it is different. In third year students would be on the ward periodically. They didn't know what happened to patients, and were still at the very early stages of understanding the medical history, and the hospital more generally. In fourth year Mike is seeing patients on the ward while he is attached to the ward. He is not transient and he understands the clinical environment better than in third year. Other students also experience serious events happening to patients.

> In ED [*Emergency Department*] we had a 13 year old come in with a cardiac arrest. He was known to have a history of heart problems. He was born with a septal defect and had surgery, but subsequently developed pulmonary hypertension. He came in and they were trying to resuscitate him and stuff. They lost him…it was quite sort of surreal. You expect it more in the adult section of ED…but sort of someone that young coming in, it's a bit of a shock (Andrew, 2).

Andrew reports a relatively complete medical history for this person complete with medical language. He understands how this information is relevant to the event. While Andrew reports this event being 'shocking' and 'surreal' he describes his involvement of providing the documentation of the medication given to the patient.

> Rather than standing there being an observer, it more felt like I was doing something, being of use, I guess, rather than just standing there helpless (Andrew, 2).

Although a relatively peripheral duty, it is significant because Andrew becomes part of the team involved with the dying boy. He has responsibility for an aspect of the patient's medical care, instead of feeling useless as students often are when they are unable to contribute to a patient's care (Firth, 1986). This study supports previous research in concluding that when students have a role and are 'doing', they experience less stress in distressing situations (Hafferty, 1991). Being involved and useful to the medical team helps Andrew with his emotional response to the situation. The registrar asks after Andrew later, and he is thanked by a nurse for his contribution to the patient's care, acknowledging and

legitimating his place on this team. Being valued in the workplace is important for learning in the workplace as it enhances students' confidence and commitment (Eraut, 2004a).

The other dramatic event described is the suicide of a resident at the hostel where Paula and other students are staying.

> I heard the sound of somebody falling so looked out the window and the guy was down there. We went and ran down, raised the alarm, sent people to the emergency and then ran down the stairs and commenced CPR…and it was hugely traumatizing…He ended up dying (Paula, 2).

This sudden event occurs when students are 'off-duty' and is fatal for the resident. It happens in the community as opposed to the clinical environment, and so there is no immediate back-up from other staff for the patient or students. Despite Paula and another student starting cardio-pulmonary resuscitation, the patient had suffered fatal brain damage and died. The students act like doctors and become involved and take action. The effect on Paula is similar to Mike's response.

> That was quite major in my life. It's been quite big and has made me question, am I cut out for this? Do I want to do this? (Paula, 2).

Paula described follow-up with various Faculty and hospital staff immediately in the days following the event. The resident was a patient and Paula's next clinical attachment is on the team that the patient had been assigned to. Paula has the opportunity to talk to staff involved with the patient and so learns about the patient and also receives further debriefing. She continues with her clinical attachments and assessments in a way that doctors continue with their work after a significant event. Despite having more support than Mike, she reports similar feelings of personal inadequacy about her ability to be a doctor.

In summary, while sickness and death are normal for the experienced doctor, this is medical students' introduction to such experiences. The context is the workplace and the clinical environment as a place of learning, but these events also occur outside of it at times. Mike and Paula respond as health professionals hearing the patients' stories and watching events unfold and being supportive, while dealing with their own personal reactions. This is a shift towards the way doctors often manage their sad or tragic

experiences. Medical students are taught how to break bad news at medical school, but their actual experiences of it are seen to be more profound. Medical students come to Medicine to 'make a difference' to patients, but they learn that sometimes they are unable to do anything, but simply be there for the patient.

If the medical profession accepts that it is good that doctors manage their own feelings with respect to sad and tragic events, then through learning to do this, students are succeeding in another aspect of their professionalisation. The literature regarding students' traumatic experience is sparse. Concern about empathy raised by Rosenfield and Jones (2004) indicates that medical educators are concerned about the relationship between emotional trauma to students and the impact on their future practice as doctors. Accordingly, while students' participation in the clinical environment is viewed as good, it would seem students need supervision and assistance in managing these situations. Sometimes, these events were beyond anybody's control, because they extended beyond the experience of medical training.

Bridging the Personal and Professional Worlds

During their medical education medical students may be affected by personal events that bridge the medical world. Due to the nature of previous research into medical student professional socialisation, this is an area that has not often emerged in the literature. Wilkinson and Harris have noted that personal illness affects senior medical students' progress (1992) however, in the current study, students' experiences in their personal lives affected them as they continued studying and learning.

As Mike noted earlier, sometimes students deal with more than one event at a time and this can be across two or more areas of their lives. This section addresses students' personal experiences of loss and death in the clinical environment. These experiences involve friends and colleagues, where the student has no formal responsibility. Paula describes grave concerns regarding a friend who was unwell, illness in a family friend who was hospitalised and finally illness in her partner's family. Leah sees two patients dealing with sickness and life tragedy in their own lives and also a friend who is sick. Fox (1958) notes a 'casual' approach to patient death in her observational studies of students in the clinical

environment attributing it to peer pressure. The current study challenges this with students describing being profoundly affected.

> The week after I got a ring and he had died. He had been a really good mentor to me and had really been a big help. Like he'd taken me for heaps of tutorials…It really affected me actually because the previous three weeks we had been such close good friends and he had helped me out a lot. He was a really good mentor type and then on the last day he took me through all these different IV (*intravenous catheters*) things and my last tutorial and things like that. Then just to suddenly get a phone call the next day in the next week, that he had died, it was like, how does that happen? (Marie, 2).

Marie also describes the death of another friend following a sporting accident, visiting him in the Intensive Care Unit.

> The first time I went to see him he was conscious. He recognised who I was and the only way we could talk was through squeezing hands. He used to squeeze my hand. He had had a tracheostomy, so he couldn't talk or anything. He recognised who I was and he was really pleased to see me, he was so happy to see me. I spent a bit of time there with him. It was kind of hard when you can't converse. Then as the days went by, I went back to see him and he just got worse and worse. The third time, he wasn't conscious anymore and he couldn't squeeze my hand or anything (Marie, 2).

The death and dying literature with regard to medical students addresses death of patients, but not friends and colleagues. Hafferty (1991) includes the unexpected death of a patient involved in student teaching in his research but these experience have otherwise been absent from the literature. Students deal with the death of friends and colleagues during their medical training in this study. These events and other personal events happen outside of the clinical attachments, but are still clinical experiences as defined by the students. Marie and other students describe being more understanding of the relatives' position in the hospital through these experiences within their medical training.

When medical students are involved with friends and family who are patients in hospital, they take on a different role. They have no responsibility as a 'medical student' but they do take responsibility to use their medical and hospital knowledge with respect to sick friends. They span two worlds, the medical and the patient or lay world, acting as interpreters. They understand the family's concerns.

> They felt that there wasn't a team approach with the staff, to his care, like all the clinical specialties…no one had a general overall approach to him. I could see where the parents were coming from, but I know they had some big meetings with the ICU [*intensive care unit*] staff and stuff and I know they felt a lot better after that (Marie, 2).

Marie goes out of her way to mediate between the medical profession and the family. She has sufficient knowledge about hospitals and Medicine at this stage of her training to relay information to the family and help interpret what is happening. Marie and Paula can see the problems families faced with loved ones in hospital, and try to help.

> I was struck by the fact that they didn't even know what palliative meant…No one described any of the medical jargon to them. It was a bit lack of communication really…I felt that in that situation I did quite a good job because I went in and gave them a whole lot of information. I did some research, so they could feel like they were a bit more informed. I tried to get them to see it from both sides (Paula, 2).

Paula is sufficiently familiar with medical language to interpret it for the family also analysing the problems the relatives are experiencing. By presenting the medical perspective to lay people Paula demonstrates her membership to the medical community. This is the codified medical information, and knowledge about how hospital systems work, what happens to patients and the meaning of medical language. Friends and family are similarly aware of the shift into the medical world as shown by their asking for help.

> One of my other close friend's Grandmother. I knew her. I had been to their house many times…she developed obstructive jaundice, I got a phone call from my friend in [*City*]. 'There's something going on at the hospital, can you go see?' I told my friend to come down as well…and she came down, and right in front of us she died (Ingrid, 2).

Both Ingrid and Paula as members of the medical profession support people and understand what is happening around them but have no responsibility with respect to the sick person. They provided a bridge in communication and are involved on a more personal level.

The stories and experiences students had with sad or sick patients in this section highlight a known phenomenon of student vulnerability. The concern is that student exposure to illness and suffering of patients may lead to the development of maladaptive responses which may impact on medical practice and therefore the doctor-patient relationship (Rosenfield & Jones, 2004). These are critical incidents which are defined as any event that overwhelms

the usually effective coping skills of either a person (Mitchell & Everly, 2000). Only Paula describes any debriefing or support following her experiences and even then she remains self-doubting about her potential to be a doctor. Werner & Kosch (1976) note an apparent 'conspiracy of silence' with regard to doctors' feelings.

While death and dying is normal in Medicine, the issue here is that medical students are at a relatively early stage in their clinical training, and have to manage their feelings and responses on their own. No student in the current study described seeing any other doctor or student coping, managing or dealing with these types of events. 'Survival skills' have been identified by medical educators as important for enhancing medical student learning in clinical environments (Gordon et al., 2000). However, the list of important skills for students excludes skills for managing such events instead focusing on time management and assertiveness skills.

While participant observation studies identify 'detached concern' for patients as part of doctors' socialisation (Fox, 1989; Smith & Kleinman, 1989), the findings in this study are less clear. Students do not describe or display detachment, and the reasons for this are only speculative. They are not examples of 'everyday Medicine' as seems to be described in the literature, but remarkable stories and events. Alternatively, these are not observed events but described events where students were in a private setting and able to talk about them, without observation by others. Hafferty (1991) notes students do not discuss amongst themselves emotional reactions to dying patients and sad experiences. In the setting of this research, there is the safety for students to be as disclosing as they wished. Outside of the interviews students manage their reactions on their own or in their own personal social circles, but in silence in the medical environment as doctors are noted to do (Werner & Kosch, 1976).

In summary, the varied student experiences of using personal knowledge, facing sad and tragic stories about patients' lives, death and unexpected events were remarkable in their spontaneous and unplanned nature. They evolved in the learning environment, and to some extent were typical of what life in the hospital, and life, generally holds – unpredictable and tragic events. The risk of students being in the clinical or work environment is that they are exposed to challenging and personal issues, and so could be deeply affected. The effects in terms of professional socialisation are not always positive, impacting on their self-

perception about becoming a doctor and in some cases to the point of self-doubt about their ability to be a doctor. Patients are in a position where they need to trust their health professionals, but students can doubt themselves due to a lack of knowledge and experience.

Certainly students participate in planned teacher-led activities, however, the experiences described by students, are student and patient-centred (and not teacher-centred experiences) fitting within apprentice-style (Lave & Wenger, 1991). They are real and unexpected activities, requiring students to engage with patients beyond a clinical case or history. The students' place when being with sick friends and acquaintances in hospital appears to be on a middling ground, where the student's role is undefined and ambiguous. However, students are identified by family and friends and also self-identify as having a role as a medical student in the clinical environment. Students are becoming doctors and the lack of ambivalence about this suggests that at least in this aspect, it is unproblematic for this group. While situated and apprentice-style learning is positive for students, increasing their learning and knowledge through participation, it carries risks in the medical environment, primarily through outright neglect. Despite the ambiguity there is no tension in their role described by students, suggesting there is no role conflict (Stryker & Macke, 1978). The risk is in being or feeling responsible beyond their stage of training or personal capacity.

Professional Socialisation in the Clinical Environment

In this section a diagram of professional socialisation through the transitional period between the preclinical and clinical years, as constructed from students experiences in the current study, is presented. The diagram, *Figure 2: Learning to be a Doctor: The transition into the clinical environment*, reflects those areas identified through the current study, in terms of student learning in the clinical environment. Detailed consideration of anticipatory socialisation and role models fall beyond the scope of this thesis, and therefore the diagram.

Wilkinson and Harris (2002) have presented a model of the transition from trainee internship to internship based on their research regarding borderline trainee interns. These trainee interns were identified as at risk of failing. Sequential acquisition and the

application of knowledge and skills, along with students' personal qualities are identified as areas affecting these students' progress. While the Wilkinson and Harris' model extends further than the time covered in the current research, there are elements that are relevant to students earlier years, as covered in the current study. The earliest aspect of their model includes students' acquisition of basic knowledge, clinical skills, medical language, and the identification of common clinical signs, but excludes application of this knowledge and the diagnostic ability of trainee interns. These are addressed in the next stage of their model.

In contrast with Wilkinson and Harris' model, students in the current study are already shifting towards diagnosis, and are concurrently synthesising history, examination findings and textbook knowledge to do so. Students are concurrently participating in the medical work of the team undertaking aspects of doctors' work, which in the Wilkinson and Harris model is a more advanced sign of career progress. The diagram constructed from the current study places these and other aspects of student learning concurrently as opposed to sequentially, because this reflects the current research findings.

In *Figure 2: Learning to be a Doctor: The transition into the clinical environment*, students' learning and experiences over the transitional shift between third and fourth year are presented. There is no fixed time frame as each student's progress is dependent on the individual, as well as on the opportunities presented in the clinical environment. Likewise, although the diagram is based on a limited period of students' clinical experiences, this should not be read as the only time of students' clinical training that this model may apply to. Students' personal experiences and clinical experiences underlie all other experiences in the clinical environment. Personal experience includes all those events that affect students on a personal level beyond their professional work which can then impact on their clinical experiences. Clinical experiences include those experiences that centre upon or refer to patients. They may involve students being in the role of medical students, or acting as intermediaries between friends and family, and the medical profession. Each factor impacts upon the other aspects of becoming a doctor as represented in this diagram.
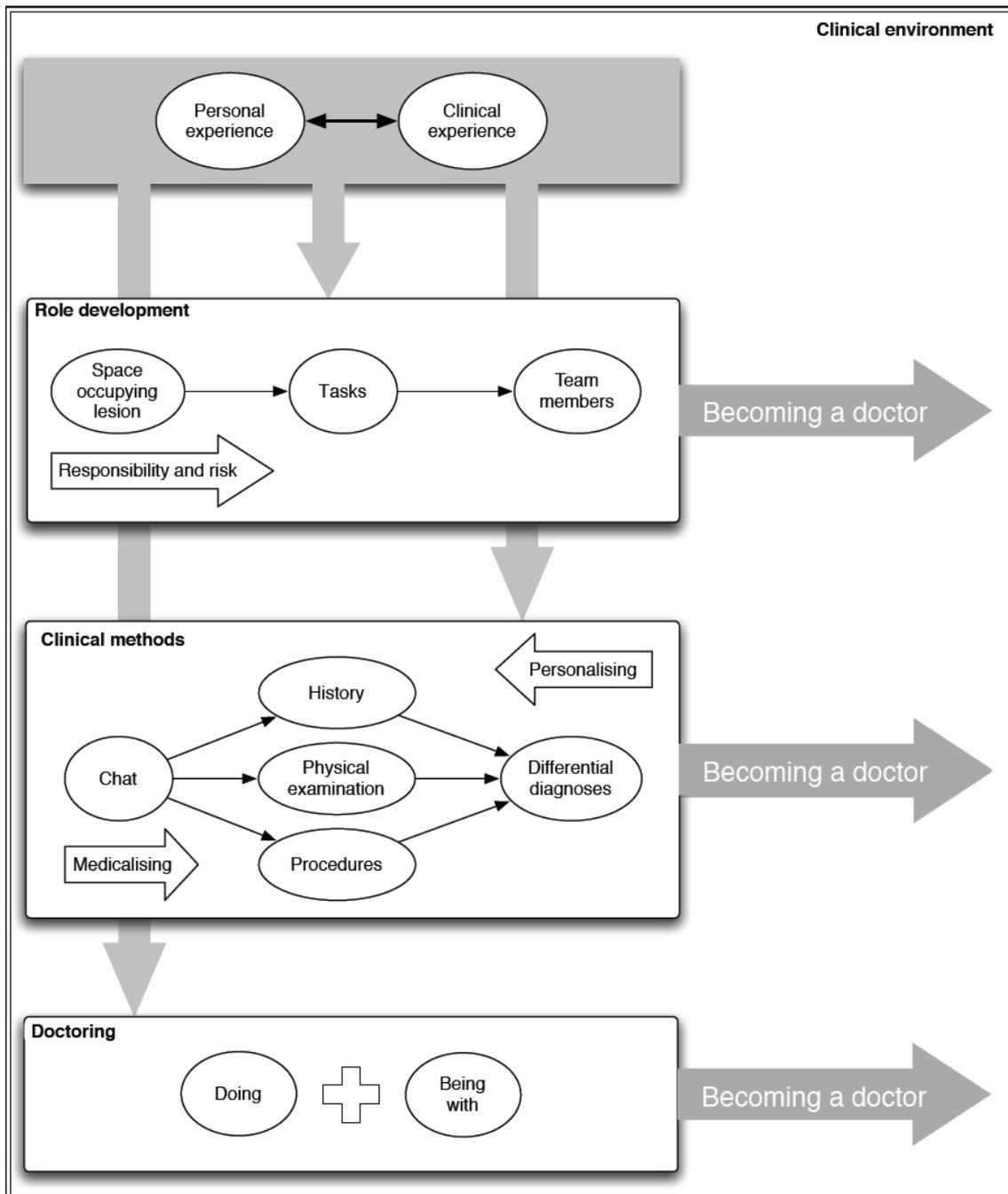
Figure 2: Learning to be a doctor: the transition into the clinical environment

When students enter the clinical environment, they initially have no role or place. However, students shift from feeling useless and being a 'space occupying lesion' to being able to contribute to the team, by undertaking aspects of medical work. These tasks include basic administrative work such as fetching charts or retrieving blood tests, or more clinically-oriented tasks such as taking blood from and inserting luers into patients. Students develop a role and this is important for understanding patient care, medical

practice and as well as understanding what is done by doctors, why and how it is done. They begin to understand what they can do. Helping with the work of the team involves developing an understanding of what medical work consists of, and how it contributes to patient care. As students assist the team they feel more a part of the team, and describe feeling like they knew more about what is happening. Finding a place and a role on the team is important for students, but can be dependent on being asked by senior doctors to participate and may also partly depend on the student's initiative. As students develop a role in the clinical environment, students take on and are given more responsibility than when they have no role. With role development comes responsibility and risk, particularly when patients become unwell or die, or when invasive procedures are undertaken.

Students' relationships with patients are simultaneously personal and medical, as they undertake the case history, physical examination and procedures, and this is represented in the diagram as 'medicalising' and 'personalising.' Students shift from chatting with patients to undertaking the history, examination and doing procedures. Even with relatively limited knowledge they start considering possible diagnoses. This means being able to elicit the history of the disease from the patient, understanding both the pathology of disease and the questions that need to be asked, and understood from the patient. Students continue to learn, practice and interpret the physical examination and undertake procedures. Patients are medicalised in that they are remembered by students because of their disease and their story. In the opposite direction students remember diseases because of the patients associated with them, the patients' story and the relationship between patient and student. Students personalise diseases.

While students are learning in the clinical environment they learn the 'doing' and 'being with' of Medicine and doctoring. The student undertakes activities such as the history, examination and procedures learning through observation but also participation. They are active and busy 'doing'. But the other aspect to the doctor-patient relationships which students see and experience is 'being with' the patient, that is most evident when students describe 'being with' sick or dying patients. In terms of preclinical learning, there is no science in 'being with' a patient: this is the humanistic, interpersonal aspect of Medicine taking precedence over the science. The biomedical model may provide the introduction of the student to the patient but, the student-patient relationship may not depend on the diagnosis or disease, but the student simply 'being with' the patient. The student is

extended to work beyond the biomedical approach, utilising interpersonal skills and humanistic concerns or approaches to provide medical care.

Conclusion

The themes identified in the interviews, and presented in this chapter relate to matters of students relationships with patients and professionalism or professional practice. Patients are again central to student learning, but in this chapter students' responsibility and sometimes the risks associated with medical work and student learning, extend beyond eliciting and the presentation of the patient through the case history. Students' professional socialisation in the clinical environment extends beyond the technical aspects of medical work.

Students' relationships with patients parallel those of doctors in doing medical work, but occasionally students relate to patients or patients' problems on a personal level. Connections between patient and student can ease and even enhance the students' experience of the medical consultation. Students' personal experiences and lives can feature in their clinical approach and work. As often as students find that they can personally connect with patients, they may also note differences between themselves and the patient, and learn that they cannot let these differences interfere with the consultation. They need to act like a doctor, providing unprejudiced, professional care to the patient.

> Medicine, after all, is not a rational exercise; it is as much an exercise in human relationships as anything (Snadden, 2006, p. 98).

Students in this study discover what Snadden notes, and despite believing that Medicine is about helping sick people, students must confront chronically or terminally sick patients, patients who want to or are dying, or die. These moments are not about eliciting the case history, learning about disease, performing examinations or procedures, which are the focus of the clinical experiences in the preclinical years. The biomedical model is irrelevant to the patient here. Students describe being challenged in this situation. Sometimes, these situations highlight students' inexperience, the horror of the event and/or lack of support, but at these times it isn't the students' ability to act professionally that is threatened. Rather, their personal conviction to be a doctor is undermined by self-doubt. Ironically, the

fact that students' do cope on their own actually reflects the accepted professional practice of doctors. The medical education literature lacks any debate, challenge or acceptance with regard to this issue at this time.

As well as the demise and tragedy associated with patients, students face their own personal dramas and tragedies. These experiences are not dependent on the student being a medical student, but happen as part of everyday life. However, these people are now medical students, and the context has changed from the everyday world to the medical world and so the meaning and the place of the student in the sickness and death of family and friends is transformed. While these are still tragic events, students take on a role that reflects their status as medical students. They observe their own shift towards becoming a doctor seeing what lay people don't understand, translating medical language and supporting their relatives and friends. Their professional and personal selves are merging. Students' personal experiences in the clinical environment are now also clinical experiences.

Chapter 9

Conclusion

In this thesis I examine the professional socialisation of medical students through the preclinical to clinical transition, and analyse how this period contributes to medical students becoming doctors. To Byron Good becoming a doctor entails the medical student entering a culture, a particular lifeworld and reality system that is unique to Medicine. This culture includes the shared understandings and perspectives of doctors, as well as the technological aspects of diagnosis and treatment of patients (Becker, et al., 1961). Entering and becoming part of this alternative lifeworld requires the student to learn a new language, forms of communication, and ways of seeing and understanding the body and the person as well as the values, attitudes, skills, interest and knowledge or culture of medicine (Merton, 1957). The professional socialisation of medical students includes learning the techniques of Medicine (the case history and physical examination), but also the humanistic endeavour of Medicine.

The preclinical to clinical transition is of interest because this is students' first opportunity to work with and learn from patients in the clinical environment. While the medical education and medical sociology literature acknowledges the significance of students' first contact with patients and this transitional period (Becker et al, 1961; Radcliffe & Lester, 2003; Stephenson et al, 2001), there has been a lack of research specifically focussing on this period. This thesis elucidates the way students' clinical experiences and approaches to learning, impact upon students' professional socialisation. Apprentice-style learning, the formal and informal curriculum, and the scientific and human endeavour of medicine are important to the current study.

As Hafferty (1998) iterates, the formal and hidden curriculum need to meet for student learning to be understood. The students' stories in the current study, clearly demonstrate the need of a wider perspective to be taken by teachers and researchers, than that seen when only considering the formal curriculum. By unveiling or demystifying medical students' experiences as they enter the hospital and general practice, the informal curriculum is made

visible. Medical educators, teachers and clinicians will use this knowledge in their supervision and teaching of students, particularly in the clinical environment.

Learning objectives and learning outcomes represent the formal curriculum and are viewed as positive in their contribution to medical education (Prideaux, 2004; Simpson, 2005; Steele, Medder & Turner, 2000). While they are applied to medical education and inform students of what is expected of them in terms of learning and thus formalising the curriculum, this thesis highlights the need to consider more than learning outcomes and objectives. Becoming a doctor is not simply a matter of meeting these requirements. It is not enough to understand the biology of the human body, elicit a patient's case history or undertake a physical examination, although these are all necessary. The different areas of knowledge – science, disease, and patients' experience of disease need to be brought together by the student in developing an understanding of the practice of medicine. The medical student needs to 'engage with the complicated practicum of Medicine' (Talbot, 2004, p. 588). The students in the current study show that being in the clinical environment with doctors, nurses, other students, patients and families is necessary to becoming a doctor because this space allows them to bring together these areas of knowledge. More than 'engaging' with Medicine, students are entering the lifeworld of Medicine.

In their preclinical medical education, students learn the science of the human body and the science of disease. Learning the structure and function of the human body provides students an alternative way of looking at the body compared to a lay person. Students learn to see the body as an object of disease. This way of seeing directs the doctor and medical student to seek the signs and symptoms of diseases in patients. It is presumed that all or most illness is the result of a pathophysiological origin and this forms the basis of the biomedical model. The doctor's role is to diagnose and treat diseases through medical practice. This teaching dominates students' classes and study time in the preclinical years. Courses in personal and professional development, ethics, and communication skills are also taught to students. However, as Good (1994) notes, these courses are marginalised by students.

Through the biomedical approach the patient and disease are decontextualised, the patient being treated as a body without social context (Good & DelVecchio Good, 1993). This science-focussed approach remains central to medical education and Medicine. Learning to

see the body as a vessel of disease begins when students learn anatomy and undertake dissection. This thesis shows that dissection is a defining experience for medical students. It provides a threshold that students cross, separating them from the lay world – this is the beginning of the new lifeworld (Good, 1994). In the anatomy laboratory, students observe and undertake depersonalising acts upon the human body. This objectifying approach to the body is an important part of the science of medicine and the biomedical approach and progresses medical socialisation.

In the anatomy laboratory medical students are observed developing the trait of 'detached concern' (Fox, 1989). Detached concern is the equipoise between objectivity and compassion that a doctor must have to be able to provide good patient care. Fox argues that detached concern unfolds with 'impressive orderliness, developing chiefly through the impact of certain curriculum experiences' such as students' clinical contact with patients (Fox, 1989, p. 85). However, in the current study what is seen, starting in the anatomy laboratory, and shifting into the clinical environment, is not orderliness in students' management of their emotions, but tension and ambivalence for some students. While students may learn to manage their emotions as doctors do and 'put on a brave face', they internalise their thoughts and feelings as they begin dissecting. Students enter a privileged sanctum of the anatomy laboratory and the human body, but must normalise their feelings to the outside world, a world that responds with fascination and even disgust at the thought of human dissection. It is clearly seen that students' are moving from the lay world to the medical world, beginning with the anatomy laboratory and continuing through the students' clinical years.

Within the preclinical years, students continue to see the embodiment of the biomedical approach through the presentation of patients to the class by doctors, and students start to learn the clinical examination used to identify patients' signs and symptoms. These early clinical experiences set within the traditional preclinical years are used to assist the student in learning the science of the human body – learning how to identify and diagnose diseases through the medical case history and physical examination of the patient. Students learn that while textbooks hold precise, factual information, it is patients' real-life stories and experiences that aid the students' recall of disease-based information. Students learn to use information from both sources to diagnose the patient's diseases.

With patients and in the clinical environment, students learn to medicalise patients, translating the patient's words and story into medical language and the case history. Students come to understand how disease manifests in the body, and how patients describe their signs and symptoms. Students simultaneously learn the questions to ask and the diseases to consider, in light of the signs and symptoms patients present with. The patient's story and illness is shaped to fit the patient case history, as the medical student seeks to diagnose the patient's disease. This is the medicalisation of the patient and parallels objectification and depersonalisation in the sociology literature (Anspach, 1988). However, medicalisation reflects the focus on Medicine and diseases in the patient, as opposed to removing or ignoring the person altogether as is implied in the term objectification. While medicalising the patient, students also personalise diseases. Students remember diseases because of the individual patient and their story. The patient provides the student a face to remember a disease by. Diseases are personalised through patients' and students' own experiences with patients. This is an important aspect of socialisation into medicine.

While focussed on learning science, students begin to see the humanistic or interpersonal aspects of Medicine and the varying approaches of doctors. Good acknowledges that a traditional biomedical critique of medicine is only partially relevant because of this aspect of doctors' work (Good, 1994). He notes that experienced doctors and students interact with patients differently. Experienced doctors have mastered the basic aspects of clinical work and are able to address more interpersonal issues with patients. Students have yet to gain experience in the interpersonal aspects of medical practice. In contrast to Good, the current study demonstrates that while students do approach patients through the biomedical model, they are also extended to address patients' personal concerns. I have shown that even at the beginning of the transition into the clinical environment, students attend to patients beyond the elicitation of the case history and physical examination. It may be that the balance between disease-based approach and interpersonal or humanistic approach is variable depending on the skill and experience of the doctor or student, and also the patient and their needs. As Atkinson (1995) iterates the doctor-patient relationship is not homogenous and should not be treated as so by researchers. The different approaches doctors take with different patients is an area of potential future research.

Students' participation and learning in the clinical environment is both through formal teaching and informal learning. Students follow and observe others in the clinical

environment, taking on greater responsibility for medical work and patient care. Students become members of the medical team. This participation enables students to meet their assessment requirements and their learning goals with respect to the formal curriculum. It is through learning in the clinical environment that students learn the construction of Medicine (Atkinson, 1981). This is not simply the diagnosis of disease but the organisation of the different clinical environments, medical work generally, different approaches to patients (as seen with respect to psychiatry and general practice in this research), and what happens to patients through their illnesses. Even in their earliest clinical experiences students participate in the medical work of the team and understand what, how and why doctors do what they do. Students learn through apprentice-style learning. This thesis deepens the understanding of the relationship between professional socialisation and situated learning. The two are intimately linked. Experiences in contrasting clinical environments challenge the student to take on medical work in different ways, as doctors do, working across different environments.

While apprenticeship learning is intermittently addressed in the medical education literature (Atkinson, 1981; Merton, et al., 1957; Prince et al., 2005), only recently have the implications of this begun to be formally addressed (Bleakley, 2006; Swanwick, 2005). Through Lave and Wenger's more general work with respect to apprenticeship learning a more comprehensive picture is seen (Lave & Wenger, 1991). Earlier conclusions with respect to medical student professional socialisation and apprentice-style learning are relatively disjointed, but recognise that in the clinical environment there is not one master for the student but many (Becker et al., 1961), and that all the 'socialisers' are modulated by the student (Adler & Shuval, 1978). While the student selects who they wish to emulate and learn from, this was not a strong theme in the current study.

Applying the concept of situated learning to the clinical environment has demonstrated the importance of students learning not just the specified curriculum but the work of doctors. Students' understanding and further participation in medical work is increased when they undertake to help with medical work and patient care. Students are becoming members of the communities of practice. Students' clinical work may be fragmented relative to patient care, as opposed to undertaking responsibility for a patient from admission to discharge or the sequential progression of patient care. Students learn though participating in all aspects of medical work. Being situated in the clinical environment requires students to relearn and

apply their preclinical science-based learning to patients. Preclinical sciences become meaningful in the presence of a patient. This also applies to students in the preclinical years when they have early clinical experiences. While Alford and Currie (2004) do not value these piecemeal clinical sessions, students find them important for providing building blocks in to their clinical years in a way that supports Lave and Wenger's approach to situated learning.

As students become familiar with the clinical work associated with each attachment they are able to do more, they take on more responsibility for patient care and completing the work related tasks. This responsibility is balanced by an increase in risk for the student. For example the responsibility of being the first (student) doctor to see the patient means the student (doctor) bears some responsibility to the family and patient if the patient becomes unwell. This research demonstrates there is equipoise between responsibility and risk for the medical student. It was seen in this research that too much risk can be detrimental to a student's further learning. Situated learning for medical student professional socialisation is important, however, students require support and supervision in the clinical environment. Students learn that while they may feel they are becoming a doctor because they are doing things and acting as a doctor, patient care sometimes involves not doing but the "being with" patients. Students learn the diversity of doctors' work and that patient care is more than being busy. Students could be told this in a classroom but the meaningfulness of this to patients is learnt in the clinical environment.

Lave and Wenger's concept of situated learning provides strong support for students learning and understanding through participation. This thesis has shown that students also learn through observation of doctors (vicarious learning) and other medical students in the clinical environment and this has not been specifically addressed by Lave and Wenger. Also not addressed by Lave and Wenger is students use of personal experiences in clinical work. While situated learning refers to learning in the context of medical work, this research extends the concept and focuses learning not only within the clinical environment but also centres it upon the student who brings all their life experiences into the medical work and consequently their professional socialisation.

Particularly relevant to this study with respect to apprentice-style learning in the clinical environment, is that students learn through observation as well as teaching, and that student learning is opportunistic and not tidily organised and linear (Lave & Wenger, 1991). Students learn what they can, when they can, as the chance arises. Students' teaching is through informal contacts with medical staff and patients. It is the relationships between students and staff and patients, or anyone students learn from, that provides the student with opportunities that shape their development into a doctor and so socialising students into the medical profession.

The area of benign neglect in apprenticeship learning has been shown to be problematic in the current study. In other non-medical areas where situated learning has been examined, benign neglect has not had negative consequences. However in medical education when students have sad and tragic experiences with patients, there are consequences to the student when they are not supported or are 'neglected' in Lave and Wenger's term (Lave & Wenger, 1991). These sad and tragic experiences are unpredictable in nature and timing. Students' relationships and interactions with patients are not only medically-focussed but also have an emotional aspect. As students socialise into medicine they relate to patients as people and not just as objects of disease. Students empathise with patients own experiences of sadness and loss. Students don't see doctors expressing sad emotions and talking about their responses, and similarly they don't display them to others. Comparable to their anatomy laboratory experiences, students internalise their feelings and reactions. This can be to the point of significant self-doubt about their ability to be doctors.

While medical students are actively taught the human biology sciences, they negotiate the transition into the clinical settings of the hospital and general practice with little or no clinical supervision. The doctor responsible for the student on any clinical attachment has no responsibility beyond that clinical attachment. Students in the clinical environment manage challenging clinical situations with patients, internalising their experiences and feelings as they did in Anatomy. The question is raised, what if students did have support during this transitional stage of education? Would this ease the transition and change the personal qualities of the doctors who graduate? Although students are taught medicine as a science with the association between disease and sickness being central, students learn that to be a doctor is more than this.

Students and doctors are not working only at diagnosing and treating diseased patients, but see and hear patients with sad stories of grief and loss. These experiences go beyond the biomedical model. Further questions are raised – should students be protected from sad or traumatic patient-related experiences? If not, what is the role of the curriculum and medical teachers in acknowledging this aspect of medical education and supporting students through such experiences? These experiences, whether had in students own personal lives or with patients, are integral to their professional socialisation because they are integral to doctors' work. Rather than ignoring the personal challenges that medical students and doctors face in their work, this research suggests that acknowledgement that is timely and not too distant from the experience is preferable. After all

> The more faculty members display compassion and understanding within the context of medical education, the less likely students are to be discouraged from being humane. In other words, the profession's success in understanding and treating the whole patient will be aided by an educational process which itself exhibits these characteristics (Marks & Bertman, 1980).

Students' personal clinical experiences warrant special mention. These represent experiences that students may have had before entry into the clinical environment, or during clinical training. There can be overlap between students personal and clinical worlds when family and friends become patients. By considering these experiences, I present the participants in this study, not only as medical students, but as people in their own right. It is through these times that students show the emergence of their professional selves so clearly, as the personal and professional merge. Able to move and translate between the medical and the lay world, students' professional socialisation is visible. Interestingly the students in this thesis, who described these events, do not relate any tension between being a friend or family member and being a member of the medical profession. They apparently shift with ease between the two worlds, translating, assisting and supporting friends and family. This has not been previously understood as part of professional socialisation.

Personal clinical experiences in the clinical setting are not acknowledged in the medical school curriculum documents, but clearly have an impact upon medical students during their education. The formal curriculum in the clinical years is focussed on the student learning to elicit the patient history, the physical examination of the patient and the diagnosis and management of diseases. Students show their learning to extend beyond this

disease-centred approach, as students meet patients who are dying or wish to die. These patients require the student to sit and be with them, and not act medically upon them. This part of medical work is not recognised in the formal curriculum, but is part of doctors' work.

In terms of medical work, the socialisation of the medical student has been shown to include the student moving from 'space occupying lesion' to becoming a member of the team. Students participate in medical work by undertaking fragments of clinical tasks related to patient care. These fragments can be menial, collecting patient files, or more advanced, assisting in the operating theatre for example. Both types of work involve students and provide a way for them to become members of the medical team. By being progressively involved with medical work and patient care, students take on increased responsibility for performing medical work, tasks and procedures. This participation identifies the student to others in the clinical setting, as a member of the medical profession.

In conclusion, the transition from the preclinical to clinical years of medical education is a critical time in students' socialisation into medicine as they learn how to approach patients, diseases and medical work. Early clinical experiences show students the beginning of the doctor-patient interaction and patient history, but also that students must reshape their previously book-based approach to learning to fit the patient's presentation of illness and disease. Students first learn aspects of the physical examination and procedures distant from patients. They then take this learning into the clinical environment and apply it to sick patients. Students immersed in medical work are challenged when medical work is not about doing something to the patient, but 'being with' the patient. At these times, as in the anatomy laboratory, students negotiate their way through their feelings on their own. Students manage some of the hardest aspects of being a doctor early in their career, without apparent support from their teachers or others involved in their education.

Strengths and Limitations of this Research, and Future Research

This study has provided an in-depth focus on the preclinical to clinical transition of medical students through qualitative research methods. The use of student interviews gave

participants the chance to disclose their experiences with anonymity and is a strength of this thesis. This may explain why this thesis has revealed students' reactions to experiences with death and responsibility beyond their ability, when other studies have not. There is an ethical dimension to using students' own words to present their experiences. Their stories provide an understanding of their experiences otherwise not evident. The heterogeneity and diversity of students' experiences has been shown through this qualitative study.

The elucidation of the methods students utilise when they learn how to elicit the case history in *Learning the Case History* provides insights for the clinical teacher.

> As practitioners, we apply a broad range of experiential knowledge and strategies that are hardly mentioned in textbooks (Malterud, 2001b, p. 398).

Students are explicit in what helps them master this medical tool – observing others, feedback, textbooks, reshaping their previous knowledge and asking general questions the answers to which students' then use to form further questions. These techniques can be used by clinical teachers to maximise students' learning. Likewise this student will enhance clinical teachers understanding of how students manage the transition into the clinical environment. This is through performing tasks and increasingly being able to undertake medical work, thus provides teachers with information to assist their clinical teaching and support of medical students.

There is no claim that the students' experiences depicted in this thesis are representative of all students at the University of Auckland medical school, or students at other medical schools. However, through the exposition of the methods utilised, readers are able to decide what is transferable from this thesis to their own environments and situations.

> The real test of any qualitative research, however, is whether the results make any sense to us (Snadden, 2006, p. 97).

Absent from this research is consideration of students' extracurricular experiences that may have affected their medical training and professional socialisation. The aim of this research was limited to the students' time within this period of their medical education – at medical school and in the clinical environment. There is no consideration of students' anticipated (pre-training) socialising experiences. This is a potential area for further research, as are the

successive years of training which were beyond the scope of the current study. Also, the impact and effects of the sad and tragic events upon students needs to be understood from a longer range perspective. How do these experiences impact on clinical practice and the doctor's professional development later?

While students perception of their role models has been identified as an important aspect of medical students' professional socialisation during training (Paice, Rutter, Wetherall, Winder & McManus, 2002), it has not been highlighted in the current study. Also not included in this research, is consideration of students' out-of-class experiences including social experiences completely outside of their education and the clinical environment. McKinney, Saxe & Cobb (1998) argue that these experiences contribute to students' socialisation into their professions. Therefore, these are areas that can be considered for future research.

In the wider picture of medical student education and training, there are other times that are notable for the apparent impact on student learning or practice. This includes when medical students enter their final year of education (trainee intern year), preparing to become house officers. In their final year students take on greater levels of responsibility for patient care and are preparing not for examinations but medical practice. This trainee intern year is unique to New Zealand and an important area of potential research. The other significant transitions are in postgraduate medical education such as when house officers become registrars, and registrars become consultants. These times offer further opportunities for researching transitions in medical education and the professional socialisation of medical students and doctors.

Practical Implications of the Research Findings

There are practical implications for the research findings of this thesis. Firstly, contact with patients stimulates student learning of basic sciences in the preclinical years. Students value the chance to observe doctors working or being with patients as well as how the science applies to disease and the patients' presentation of disease. Learning the physical examination of patients and the beginnings of procedures that they will eventually do upon patients provides the building blocks for students when they enter the clinical environment. Students begin learning in the safety of the class and extend their learning with patients.

Giving students more opportunity to observe doctors working with patients and giving students their own time with patients can further ease the transition in to the clinical environment as well as students' socialisation into medicine. Students can better see the application of their science-based learning to the work of a doctor. This thesis strongly supports early clinical experiences as early as possible in the medical curriculum.

Involving medical students in patient care and medical work can be encouraged in the clinical environment. This participation is important for providing a context for learning and participation in the work environment enhances student learning. Students feel more confident and are more likely to offer to assist and help because they understand what is happening. Briefing medical students and their professional colleagues of how and what students learn at least in the early stages of their clinical experience could benefit student learning. If doctors and health care teams know that participation enhances student learning, greater effort could be made with students without an added pressure to provide more teaching when people are already busy and overcommitted in their work. Likewise encouraging students to participate is important particularly in getting through the 'space occupying lesion' stage when they first begin a clinical attachment. The concept of apprenticeship learning provides a useful structure for addressing the many and fragmented aspects to student learning in the clinical environment. This research should lead to strategic dissemination of the information regarding the nature of students' experiences of learning in the clinical environment, to raise the awareness of all the team members.

The specified curriculum in faculty documents acknowledges the conditions and procedures that students should be seeing and understanding. However, there needs to also be acknowledgement that students are learning not just about diseases but how to be a doctor in terms of language and even the approach to patients that allows the student to undertake intimate examinations. Even in fourth year students are learning the clinical care of patients and not just the presentation of diseases. Students are already learning how to be a doctor – the medical work and organisation of patient care, the decisions to investigate and treat patients in a complex health care organisation. These aspects of student learning are unacknowledged and reflect the hidden curriculum. Further consideration of these points is needed by clinical teachers and supervisors in addressing what it is students actually learn on their clinical attachments.

The final point regarding the implications of this research is addressing the effect of sad and tragic experiences upon students. Students are learning in the same environment as doctors' work, and so are exposed to the same sad and tragic experiences as doctors. However, with little or no experience in such matters and in their new position as student doctor, students are shocked and unprepared for what they are exposed to. Support for students in these areas of medical work is needed. This support needs to be timely and appropriate and could encompass clinical supervision such as psychologists undertake, mentoring or peer group support.

Finally…

Clinical experience is key to medical student professional socialisation because it is through clinical experiences and in particular those with patients, that the medical student learns medicine, not simply through the application of scientific knowledge, but as a complex humanistic endeavour. Medicine was traditionally learnt as an apprenticeship with the young student diligently following the doctor in his patient rounds. Through reviews of medical education Flexner in the United States of America emphasised the importance of students learning the human biology sciences prior to entering the clinical environment (Flexner, 1925). This has resulted in the curriculum structure of science and then patients, of many medical schools. The University of Auckland medical curriculum has undergone changes and the most notable of these is the introduction of early clinical experiences during students' preclinical years. However, the scientific endeavour of Medicine still remains pervasive in medical education. I have shown that it is through clinical experiences with patients that medical students are socialised into the profession, including and beyond the scientific endeavour of Medicine. Beyond the science of Medicine, the student meets the patient.

Appendices

Appendix A

The Faculty of Medical and Health Sciences Medical Curriculum, 2003

	Semester One			Semester Two		
Year One	Biology; Cells Population Health Chemistry Essential Biology			Biology: Organ Systems Physics Biochemistry Behaviour, Health & Development		
Year Two	Disease Processes and Therapeutic Principles Gastrointestinal Nutrition Musculoskeletal Practitioner Development			Cardiovascular Respiratory Genitourinary Medical Humanities		
Year Three	Medical Neuroscience Special Senses Medical Genetics Reproduction, Development and Aging			Practitioner Development Blood, Immunity and Infection Regulation of Body Function Clinical Methods		
Year Four	General Practice (6 weeks)	Emergency Medicine/Anaesthetics (2 weeks)	Locomotor (4 weeks)	General Medicine (6 weeks)	General Surgery (6 weeks)	Psychiatry (6 weeks)
Year Five	Obstetrics & Gynaecology (6 weeks)	Paediatrics (6 weeks)	Specialty Medicine (6 weeks)	General Practice (2 weeks)	Specialty Surgery (4 weeks)	Selective (4 weeks)	Geriatric Medicine (2 weeks)
Year Six	Elective and radiology (13 weeks)	Medicine	Surgery	Obstetrics & Gynaecology	General Practice	Speciality Surgery	Emergence Medicine

Table A1: The Faculty of Medical and Health Sciences Medical Curriculum, 2003. (Taken from 2003 Phase 1 Year 3 Guidebook. The University of Auckland, 2003).

Appendix B

Participant Information Sheet and Participant Consent Form

THE UNIVERSITY OF AUCKLAND
NEW ZEALAND

Participation Information Sheet for Medical Students,

You are invited to take part in a study on "The Professional Socialisation of Medical Students"

My name is Rain Lamdin. I am a graduate student in the Department of General Practice in the Faculty of Medical and Health Sciences and I am enrolled in a Doctor of Philosophy degree (PhD). This study contributes to my PhD. I am interested in investigating how medical students learn to become doctors. Through my research I propose to gain an understanding of how medical students become doctors and the experiences that contribute to becoming a doctor. I am interested in focussing on the transition from preclinical to clinical learning and experience however would also like to consider other times of potentially significant impact on medical students. These times include the orientation days, introduction to the Anatomy laboratory, staff student debates and other social occasions. I have chosen this area of research because I think it is important that we understand what factors are important in becoming a doctor.

You are invited to participate in my research and I would appreciate any assistance you can offer me.

I would like to interview you but you are under no obligation to participate. There are two interviews: first time would be during second semester of third year and then again in the first semester in fourth year. Each interview will take approximately 45 minutes at a time convenient to you and will be audiotaped. Audiotaping is an essential part of the research. The tape can be turned off at anytime or you can withdraw information any time up to December 31 2003.

Your participation will remain confidential. No names of identifying information will be used in the report and all research material will be stored in a locked office and destroyed six years after completion of the study.

The research may be published or presented at conferences but will contain no identifying information.

If you wish to be interviewed please let me know by filling in the form attached and returning it via the internal mail. Alternatively you may contact me directly:

Rain Lamdin	My supervisor: Dr Ngaire Kerse
Faculty Education Unit	Department of General Practice
Faculty of Medical and Health Sciences	Faculty of Medical and Health Sciences
University of Auckland	University of Auckland
Private Bag 92019	Private Bag 92019
Auckland	Auckland
Phone: 3737 599 x 5692	Phone: 3737 599 x 4467

E-mail: r.lamdin@auckland.ac.nz	E-mail: n.kerse@auckland.ac.nz

Further contact people are the Head of the Department of General Practice
Professor Gregor Coster
Head of Department of General Practice
University of Auckland
Private Bag 92019
Auckland
Phone: 3737 599 x 6518
E-mail: g.coster@auckland.ac.nz

If you have any ethical concerns you may contact the Chair of the University of Auckland
Human Subjects Ethics Committee:

Chair, University of Auckland Human Subjects Ethics Committee
University of Auckland
Private Bag 92019
Auckland.

Many thanks

Rain Lamdin

Approved by the University of Auckland Human Subjects Ethics Committee on 15 July
2002 for a period of three years, from 15/07/2002 Reference 2002/203.

THE UNIVERSITY OF AUCKLAND
NEW ZEALAND

Medical Student Consent Form

This consent form will be held for a period of six years.

Title: The Professional Socialisation of Medical Students during the Preclinical to Clinical Transition

Researcher: Rain Lamdin

I have been given and have understood an explanation of the research project on the professional socialisation of medical students. I have had an opportunity to ask questions and have them answered. I understand that audiotaping is an essential part of the research.

I understand that I may withdraw myself or any information traceable to me until 31 July 2004 without giving any reason.

I agree to take part in the research.

I agree that the interview be audiotaped

Signed

Name
(please print clearly)

Date:

Approved by the University of Auckland Human Subjects Ethics Committee on 15 July 2002 for a period of three years, from 15/07/2002 Reference 2002/203.

Appendix C

Participant Background Information

Table B1: Ethnicity and Gender of Participants

Maori Women	1
Maori Men	2
Pakeha (Caucasian) Women	11
Pakeha (Caucasian) Men	3
Asian/Indo Asian Women	2
Asian/Indo Asian Men	2
Total	21

Table B2: Gender, Admission Scheme and Previous Medical Experience Prior to Selection of Participants

ADMISSION SCHEME	NAME	PREVIOUS EXPERIENCE
School leaver	Tessa	Nil
	Connie	Nil
	Ingrid	Personal medical experience
	Trish	Nil
	Andrew	Personal medical experience
	David	Nil
	Nick	Nil
	Georgia	Personal medical experience
	Cleo	Personal medical experience
Alternative Admission	Paula	Overseas educational experience, close relative doctor
	Vicky	International secondary qualification, personal medical experience
	Peter	Science qualification, close relative doctor
	Jenny	Health professional qualification and experience
	Sarah	Health science qualification and work experience
	Mike	Graduate qualification
Maori and Pacific Admission Scheme	Chris	Health professional qualification and work experience
	Brian	Health professional qualification and experience
After year one (Alternative Admission Scheme)	Marie	Nil
	Annie	Close relative doctor
	Leah	Close relative doctor
	Stella	Nil

Note: I have noted when students had a direct relative who was a doctor. In some cases this was a parent or sibling. When students had previous qualifications or experience as another sort of health professional I have also specified this but left it general. Personal medical experience refers to the student themselves having memorable experiences as a patient or someone close to them having been.

Appendix D

Interview One Questions

Question Schedule for Student Participants

The Professional Socialisation of Medical Students during the Preclinical to Clinical Transition

Tell me about your **first day** at med school
What were you told about being a doctor?

How did you find you way around or know where to go?

What has been **memorable** about your time here at med school?
Tell me about it

Since you have been here at med school, have your **thoughts about being** a doctor changed?
In what way?

What were they before med school and what are they now?

Has anyone or anything **influenced your thoughts** about being a doctor   who/what/why?

Tell me about your **first anatomy lab**?
Did you have any **orientation** before the lab? What happened? Tell me about it

What were the rest of the anatomy labs like?

Have you been to any of the **social events** like staff student debate or med revue?
　　　Have you been involved in them or attended them?
Tell me what they are like?

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