

**EXPERIENCES OF CLINICAL PRACTICE IN A
PROBLEM- BASED LEARNING MEDICAL CURRICULUM
AND SUBSEQUENT CLINICAL ENVIRONMENTS**

A thesis submitted in fulfilment of the requirements
for the degree of

**DOCTOR OF PHILOSOPHY
OF
UNIVERSITY OF KWAZULU -NATAL**

BY

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Declaration

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Dedication

To my darling daughters Nikita and Anysia:

May this thesis serve as an inspiration to you to live your lives with determination, dedication and discipline. Remember always that knowledge is the key to success. Engage with the literature, philosophies and theories that have been tried and tested over the centuries; this will surely strengthen your future footing on the fields of this earth. Strive to achieve your full potentials and never give up until your voices are heard! May God guide you always.

Abstract

The study traced the experiences of learning the clinical aspects of a problem-based learning (PBL) medical curriculum and the participants' construction of a relationship with the subsequent clinical environments. In light of international and local medical and technological changes, the Nelson R Mandela School of Medicine (NRMSM) changed its traditional curriculum to a PBL curriculum in 2001. The participants were the first cohort to experience a PBL pedagogy and graduated in 2005, subsequently undertaking two years of compulsory internship and one year of community service within the South African health care system. It was in the context of these changes and the present state of health care that such a study sought to determine how a PBL pedagogy was experienced within the clinical environments of South Africa.

Phenomenography was used as a methodology to describe and interpret the 'qualitatively different ways' in which the participants' experienced the phenomenon. Purposive sampling reflecting the institution's admission policy regarding race and gender demographics was applied. In-depth interviews were conducted at the end of the community service experience. Variation in the experiences was represented through logically related and hierarchical categories of description resulting in the formulation of an outcome space.

The outcome space identified three categories of description: 'The guinea pig identity' which found that the participants felt at the mercy of a curriculum experiment and felt discriminated against by the hospital consultants who had negative views of PBL. The category of 'knowledge construction' saw the participants exploring issues of difference between the knowledge and practices expected by the two different kinds of curricula. The category of 'professional identity' indicated an emerging sense of competence across a range of clinical situations.

Critical discourse analysis (CDA) was used to augment the phenomenographic analysis and to explore the ways in which the social structure of the clinical contexts related to the discourse patterns emerging in the phenomenographic categories in the form of power relations and ideological effects. CDA was used as an additional lens to develop theory and acquire deeper knowledge about why the participants constructed a relationship with the phenomenon and the subsequent clinical environments in the way that they did.

The thesis concludes with a proposal for an empirical model that illuminates resolutions from the major findings in the study regarding medical knowledge construction in a PBL curriculum. The model consists of a Y axis depicting the vertical spine of basic sciences knowledge construction, a X axis depicting the horizontal nature of professional identity construction and a spiral that indicates the simultaneous movement of clinical knowledge construction along each axis. It is hoped that this model will serve as a future curriculum innovation that will result in the production of professional medical practitioners that are required for today's South African communities. This study, however, revealed that despite the hegemonic practices and the theoretical inadequacies that were reported by the participants they finally felt like professional medical practitioners during their community service experience.

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TABLE OF CONTENTS

DECLARATION	ii	
DEDICATION	iii	
ABSTRACT	iv	
ACKNOWLEDGEMENTS	vi	
CHAPTER 1: CONTEXT AND CURRICULUM		
1.1	Introduction	1
1.2.	Importance of the study	2
1.3.	Research questions	3
1.4	My role as a researcher	4
1.5.	Rationale for a change to PBL	7
1.6.	Structure of clinical aspects of Curriculum 2001	10
1.7.	Outline of the thesis	22
CHAPTER 2: PBL IN THE CLINICAL REALM		
2.1.	Introduction	25
2.2.	The educational origins of PBL	25
2.2.1.	The international origins of PBL	25
2.2.2.	South African origins of PBL	26
2.3.	PBL as an approach to learning	29
2.4.	The impact of PBL curricula on student learning	32
2.5.	The effectiveness of PBL curricula	37
2.6.	PBL in the clinical setting	41
2.7.	The South African health care context	43
2.8.	The international rural health care context	47
2.9.	Conclusion	48
CHAPTER 3: DESIGNING THE DESCRIPTIONS		
3.1.	Introduction	50
3.2.	Research paradigm	50
3.3.	The Phenomenographic approach	53
3.3.1.	What is Phenomenography?	53
3.3.2.	Variation in Phenomenography	55
3.3.3.	Producing data through Phenomenography	57
3.3.3.1.	Introduction	57
3.3.3.2.	Selecting the sample	58
3.3.3.3.	Initial contact with participants	62
3.3.3.4.	The Phenomenographic interview	62
		viii

3.3.3.5.	Phenomenographic data analysis	66
3.3.3.5.1.	The analysis process	70
3.4.	Credibility of the Phenomenographic analysis	73
3.5.	My reflections of the Phenomenographic process	74
3.6.	Concluding remarks on Phenomenography	76

CHAPTER 4: WAYS OF EXPERIENCING

4.1.	Introduction	78
4.2.	The ‘what aspect’ (referential) – The ways of experiencing	80
4.2.1.	The guinea pig identity	81
4.2.1.1.	Conceptions of being in the experimental first cohort	81
4.2.1.2.	Conceptions of labelling by medical ward staff	84
4.2.1.3.	Conceptions of being compared with traditional curriculum students	87
4.2.1.4.	Conceptions of racism and marginalization	92
4.2.2.	Knowledge construction	94
4.2.2.1.	Conceptions of learning in a Skills Laboratory	94
4.2.2.2.	Conceptions of transference of skills from simulated to real clinical contexts	98
4.2.2.3.	Conceptions of clinical competence as a student	101
4.2.2.4.	Conceptions of clinical assessments	104
4.2.2.5.	Conceptions of theoretical inadequacy	107
4.2.3.	Conclusion	110

CHAPTER 5: CONSTRUCTING THE RELATIONSHIP

5.1.	Introduction	112
5.2.	The ‘how aspect’ (structural) - construction of a relationship with internship and community service	113
5.2.1.	The professional identity	114
5.2.1.1.	Conceptions of transition from student to graduate	116
5.2.1.2.	Conceptions of competence as interns	117
5.2.1.3.	Conceptions of relationships with the health care team during internship	120
5.2.1.4.	Conceptions of rurality as community service officers	123
5.2.1.5.	Conceptions of the construction of a relationship with rural practice	126
5.3.	Link between categories of description and emerging professional identity	128
5.4.	Conclusion	133

CHAPTER 6: BECOMING CRITICAL

6.1.	Introduction	134
6.2.	Justification for additional analytical lens	135
6.3.	The descriptive and interpretive nature of Phenomenography	136
6.4.	Methodological claims of Phenomenography	141
6.5.	My personal epistemological shift	146

6.6.	Critical discourse analysis	148
6.6.1.	Introduction	148
6.6.2.	Conceptual and theoretical framing of CDA	152
6.6.3.	Methodology of CDA	153
6.6.4.	A critical discourse analysis framework	154
6.6.5.	Ethical considerations for the study	157
6.7.	Conclusion	158

CHAPTER 7: DATA IN SEARCH OF A THEORY

7.1.	Introduction	159
7.2.	The guinea pig discourse	160
7.3.	The discourse of knowledge construction	169
7.4.	The professional identity discourse	183
7.4.1.	The extrinsic technical identity	184
7.4.2.	The extrinsic meaning identity	189
7.4.3.	The intrinsic meaning identity	192
7.5.	Conclusion	194

CHAPTER 8: FINAL WORDS AND FUTURE INNOVATIONS

8.1.	Introduction	196
8.2.	Model of medical knowledge construction in a 6 year PBL curriculum	198
8.3.	Basic sciences knowledge construction – the X axis	199
8.4.	The professional identity construction – the Y axis	201
8.5.	Clinical knowledge construction – the spiral	202
8.6.	Conclusion	204

REFERENCES	206- 222
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APPENDICES

ANNEXURE A: Structure of Traditional Curriculum	223
ANNEXURE B: Theme Book- Curriculum 2001: Theme 1.3.	226
ANNEXURE C: Eight Step PBL Process at NRMSM	257
ANNEXURE D: Facilitator Guidelines	259
ANNEXURE E: Skills Protocol for the Collection of Blood Specimens using vacutainer system	262
ANNEXURE F: HPCSA Logbook for Internship Training (2005)	264
ANNEXURE G: NRMSM Student Intern Guide	293
ANNEXURE H: Division of Medicine-Final Year Logbook	354
ANNEXURE I: Standard Treatment Guidelines-1998	388
ANNEXURE J: The Essential Drug List-1998	411
ANNEXURE K: Ethical Clearance	416
ANNEXURE L: Sample of Informed Consent Letter	418
ANNEXURE M: HPCSA Regulations relating to the registration and training of	

Interns in Medicine	421
ANNEXURE N: Poster presented at AMEE 2010 in Miami	426
ANNEXURE O: Poster presented at Faculty of Education, UKZN Research Day November 2010	428
ANNEXURE P: Letter to the Dean of NRMSM	430
ANNEXURE Q: Sample of letter sent to the medical superintendents of the rural Hospitals - community service	433
ANNEXURE R: Structure of Curriculum 2001	436
ANNEXURE S: Structure of Curriculum 2010	446

LIST OF TABLES

TABLE 1 : Traditional Curriculum versus PBL Curriculum	37
TABLE 2 : Biological profile of participants and geographical locations of their community service placement	60
TABLE 3 : The Professional Entity (Reid and Petocz, 2004)	115
TABLE 4 : Differentiation between conceptual and contextual coherence in curriculum structure at NRMSM.	182

LIST OF DIAGRAMS

DIAGRAM 1 : Different clinical environments and the levels of experience	21
DIAGRAM 2 : The Model of the Experience of Learning	68
DIAGRAM 3 : The Model of Experiences of Learning the Clinical Aspects of the PBL curriculum and the construction of a relationship with the subsequent clinical environments	69
DIAGRAM 4 : The Outcome Space of the Ways of Experiencing the phenomenon and the construction of a relationship with the subsequent clinical environments	79
DIAGRAM 5 : Model of Medical Knowledge Construction in a 6 Year PBL curriculum	198

CHAPTER 1 CONTEXT AND CURRICULUM 2001

1.1. Introduction

The art and craft of medicine lies in the clinical-expertise¹ of a professional medical practitioner who based on his/her knowledge of the basic sciences² and underlying diseases is able to make a diagnosis³ and treat a patient in a holistic manner. My study focusses on this clinical expertise in a medical curriculum and therefore traced the experiences of learning the clinical aspects of a problem-based learning (PBL) medical curriculum (the phenomenon) and the participants' construction of a relationship with the subsequent clinical environments. It was the intention of the research, through the analysis of the experiences of the participants to determine whether the PBL medical curriculum was perceived as preparing them for the clinical environments of internship⁴ and community service⁵ within the South African Health Care context. The participants of the study were part of the first cohort of medical students who registered for the PBL MBChB⁶ programme at the Nelson R Mandela School of Medicine (NRMSM), University of KwaZulu-Natal (UKZN), South Africa (SA).

The intention of this Chapter is to provide the reader with a picture of context in which the phenomenon of the study was experienced. The components of the picture will reveal the importance of this study, especially with regard to the curriculum change that is presently underway at the NRMSM. The statement of the critical questions leads to an explanation of my role as the researcher in the study as well as an interested party in the

¹ clinical expertise: when a medical practitioner personally assesses a patient by taking a history and performing a physical examination in order to arrive at a diagnosis and subsequently treat the patient.

² basic sciences: disciplines like Anatomy, Physiology, Pathology, Biochemistry etc.

³ diagnosis: the process of attempting to identify a possible disease or disorder in a patient.

⁴ internship: compulsory two year service requirement of the Health Professions Council of South Africa (HPCSA) for South African medical graduates to rotate through the various disciplines of medicine at District level hospitals.

⁵ community service: compulsory two year requirement of the Health Professions Council of South Africa (HPCSA) for South African medical graduates to rotate through the various disciplines of medicine at District level hospitals.

⁶ MBChB: basic medical qualification, the degrees of Bachelor of Medicine and Bachelor of Surgery taken concurrently.

curriculum development and delivery of certain aspects of the curriculum. The rationale for the change to a PBL curriculum is discussed and the structure of the curriculum with an emphasis on the clinical aspects is described. The Chapter concludes with a brief overview of the outline of the subsequent chapters.

1.2. Importance of the study

Sixteen years after democracy, the South African health care system remains in a state of crisis (Dorasamy, 2010). Both urban and rural health care facilities are immensely understaffed, under-equipped and overloaded with patients from poor communities. There has been a drastic increase in the number of patients admitted daily into hospitals, particularly with dreaded diseases such as Tuberculosis and HIV Aids. Due the high crime and motor vehicle accident (MVA) rate in South Africa, the numbers of trauma patients admitted into hospitals are also on the increase. Statistics reveal that every minute of every day patients are rushed to hospitals in emergency service vehicles with gunshot wounds, stab wounds, and traumatic injuries from MVAs (World Health Organisation, 2004). This crisis in the medical and emergency units in South Africa requires responsive doctors who will become competent and confident enough to perform clinical examinations and procedures on ‘dying patients’ in the under-resourced circumstances of the South African health care context. The study looked at the extent to which the participants perceived the PBL medical curriculum as empowering them to function in this wide array of clinical environments, enabling them to provide optimal patient care in such poverty-stricken conditions.

It is hoped that the findings of the study will add to the body of knowledge called upon by the relevant role players in health care education and delivery such as the NRMSM, the HPCSA, medical schools both nationally and internationally as well as the South African Department of Health. While the study is not an analysis of the PBL medical curriculum as a whole, the findings may assist the NRMSM to identify whether the PBL curriculum is instrumental in developing the clinical practice of its students and graduates for optimal patient care. It is also hoped that from the analysis of the participants’

experiences, the NRMSM would be able to identify areas where change in the curriculum may be needed. The HPCSA is the body that is responsible for the accreditation of the medical curriculum at each of the South African medical schools. It is also the authority that stipulates the national guidelines that medical curricula must adhere to. The study could inform this body of the students' experiences of the clinical aspects of a PBL curriculum and their ability as graduates to construct a relationship with the subsequent clinical environments based on these clinical experiences and their interaction with medical graduates from the other medical schools across South Africa.

Medical schools around the world battle with the problem of developing authentic clinical practice (Edwards *et al.*, 2004; Cohen-Schotanus *et al.*, 2008; Pugsley and McGorie, 2007; Lempp *et al.*, 2004). There is also extensive international literature on the difficulty of transferring simulated clinical practice to authentic patient care settings (Eyal and Cohen, 2006; Kneebone *et al.*, 2007; Bradley and Bond, 2006). My study will serve as an additional perspective on these issues by looking at how the participants' experienced their clinical practice in a PBL curriculum and how they were able to construct a relationship with internship and community service in a South African context. It was interesting to take cognizance of whether the participants that experienced the phenomenon of the study understood and reacted to the clinical environments in the ways that the PBL curriculum intended them to within the contexts of the NRMSM and the hospitals where the clinical education¹ modules were undertaken.

1.3. Research questions

1.3.1. What were the participants' experiences of learning the clinical aspects of the PBL medical curriculum?

¹ clinical education: refers to the practical integration and application of knowledge, skills and attitudes learnt at medical school in the simulated and real clinical environments, to the profession and practice as a medical practitioner in the real world.

1.3.2. How was the relationship between the experiences of learning the clinical aspects of a PBL medical curriculum and the experiences of the subsequent clinical environments constructed?

1.3.3. Why did the participants construct a relationship with learning the clinical aspects of the PBL medical curriculum and the subsequent clinical environments in the way that they did?

1.4. My role as a researcher

I was employed by the University of Natal in 1999 as the Manager of the Skills Laboratory. I am an Advanced Life Support Paramedic and one of my tasks was to set up and develop the Skills Laboratory in preparation for the implementation of the PBL medical curriculum that was going to be implemented in 2001. I was also the coordinator and lecturer of the Basic Emergency Care Course that was a compulsory module of the first year of the PBL curriculum. The medical curriculum at the time of my employment was traditional in nature. Soon after my appointment at the NRMSM, curriculum reform began in earnest. The six year traditional curriculum was being changed to a five year PBL curriculum. A curriculum development task force (CDTF) was established to steer this process forward. I was given the opportunity of becoming an active member of the CDTF and began working to identify the relevant clinical and emergency skills within the core material and to develop the clinical skills training programme across the first three years of the programme.

The skills training programme looked at the training of clinical and emergency skills in the Skills Laboratory with the use of models, mannequins and simulated patients. There have been numerous research studies done nationally and internationally on the use of the Skills Laboratory in a PBL medical curriculum (Syme-Grant, Stewart and Ker, 2005; Kneebone *et al.*, 2007; Bradley, 2002; Nielsen *et al.*, 2003). I will elaborate on these studies in the literature review section of the thesis. This was the start of my curiosity and interest in the teaching and learning of the practical aspects of medicine. I subsequently completed a Masters Degree in Higher Education and the topic for my

dissertation was “Integrating Emergency Care into the MBChB, PBL Curriculum at the Nelson R Mandela School of Medicine, University of Natal: student and staff perceptions” (Reddy, 2004). I subsequently began to research my other area of interest, the clinical education aspect of the PBL medical curriculum, and the experiences of the students and graduates thereof. The first cohort of students registered for the new PBL medical curriculum in January 2001 and with its inception, came the introduction of a laboratory based clinical skills training programme. The first three years of study were organized in Themes¹. Themes were six-week periods in which broad concepts or medical complaints were topics of study such as People and Bugs, Cardio Respiratory Disorders, Reproductive Health, etc. Guided by a Theme book, the students acquired the relevant knowledge and skills through paper cases, practicals, large group resource sessions and clinical skills training.

As much as possible, the clinical skills training in the Themes were largely relevant to the weekly objectives of the Theme. In the Cardio Respiratory Disorders Theme, for example, the relevant clinical skills were:

- History taking: A simulated patient with a cardiac complaint.
A simulated patient with a respiratory complaint.
- The physical examination of the Cardio-vascular system.
- The physical examination of the Respiratory system.
- CPR.
- Adult orotracheal intubation.
- ECG monitoring and Defibrillation.

I was responsible for the day to day managing of the Skills Laboratory which included the co-ordination of the clinical skills training programme. This entailed obtaining clinicians and appropriately trained demonstrators for the teaching of the relevant skills, simulated patients and the purchasing and preparation of the relevant models, mannequins and equipment that were required to teach the skills. I am also involved in

¹ Theme: six week period that made up a module during which the integrated medical content that was identified by the Theme Design Group was covered.

the teaching and assessment of all emergency skills of the Skills Laboratory. Therefore I was intimately and directly involved in the process of clinical skills training in the undergraduate PBL medical curriculum. This intimate involvement in the curriculum made me passionate about the research that I have undertaken but also raised an ongoing tension with my personal investment in the findings of the study.

Throughout the study, I was conscious of my role and position in the research process. My position as Head of the Skills Laboratory with an intimate involvement in the skills training of the participants led me to the focus of the study in the first place. I also acknowledge that my choice of methodologies was influenced by my position in the research. At first I wanted to understand the different experiences of the phenomenon and therefore took a phenomenographic stance to the research but later experienced an ontological and epistemological shift both from a personal perspective as well as from the emergent phenomenographic findings. Details of this shift are provided in Chapter 6 of the thesis.

Mckenna (2004) advocates that within a critical research approach, the influence of researchers' identities need to be carefully managed and therefore I had to be constantly aware of my values and prejudices. Having worked at the NRMSM for the past eleven years and being intimately involved with the teaching and the development of the PBL curriculum has clearly impacted on the research process. However, I have carefully outlined the interview and analysis processes from a methodological perspective in this thesis in order to demonstrate the rigorous process I have followed. I have constantly questioned the extent to which my own views might sway my voice in the findings and claims. The final chapter of the thesis provides an opportunity for me to reflect on the extent to which I have been successful in this regard or not.

1.5. Rationale for a change to PBL

Due to the nature of the phenomenon and the various contexts in which the experiences of learning took place, it is important to unpack the complexity of the participants' engagement with such clinical environments. It is therefore important to understand the context at the NRMSM and the construction of the medical curriculum (Curriculum 2001)¹ with particular emphasis on the clinical education aspects thereof. Since the study also focuses on the participants' construction of a relationship with internship and community service, it is necessary to also look at the context in which medicine is practiced in South Africa. This will be discussed in Chapter 2.

A changing world with persistent health problems, ageing populations and the emergence of chronic illness in conjunction with social problems (persistent poverty, unemployment, urbanization, etc.) and a declining environment, called for a global strategy for effective health care delivery (World Health Organisation, 1994). A new type of medical graduate is needed to attend to the challenges facing South Africa (imbalances from the previous apartheid government an increasing HIV infection rate, financial crises in the Department of Health). It is thus imperative that the doctor of the Century is equipped with knowledge, skills and ethical values that will allow for cost effective and holistic health service delivery. The fundamentals of modern medicine have to therefore move towards becoming social as well as scientific, with a need for preventive, supportive and therapeutic procedures that will be more available to an expanding global population who can generally not afford health care services (Parsell and Bligh, 1995). The profile of the required 'five-star' doctor of today thus has to have the following traits: care provider; decision-maker, communicator, community leader and manager (Boelen, 1994).

In light of the changing medical environment both internationally and in South Africa, the NRMSM recognized the need to change its traditional discipline-based medical curriculum that had been in place from the time of its establishment in 1952. The traditional six year curriculum was structured according to the pre-clinical/clinical divide

¹ Curriculum 2001: The name given to the 5 year PBL MBChB programme at the NRMSM that was implemented in 2001.

model that was traditionally operational in most medical schools throughout the world. Annexure A gives a brief description of the style and content of the traditional curriculum that was eventually phased out in 2005. Although this study is not a comparative one, the participants reported experiences of being compared to the traditional curriculum students who in their final year of study (2005) were in the same clinical education module groups. These comparisons, as they arose in the data, are discussed in Chapter 4 in the phenomenographic analysis section of the thesis.

In preparing the proposal for this study, I had numerous discussions with staff that had been party to the introduction of Curriculum 2001 and attempted to ascertain the motivation for the changes. A number of points were made which can be summarized as follows:

- There was a need to train doctors with a primary health care orientation to be aligned with the South African Health Departments' mission statement, "To develop a sustainable, co-ordinated, integrated, and comprehensive health system at all levels, based on the primary health care approach through the district health system." (Thompson, 1994:2).
- The stakeholders of the health care system needed to re-examine their position for the delivery of health in the new South Africa to meet the goals of health for all and equity of health delivery.
- Medical schools that have traditionally focused on a definition of quality that was limited to technical capability and competence had to review quality in the context of cultural and consumer expectations.
- A curriculum had to be developed that was appropriate to the health needs of the country as well as being internationally recognized.
- There were massive changes taking place in SA and in Universities throughout the world, with paradigm shifts in all aspects of life including health services and educational approaches.
- The teachers of the six year curriculum acknowledged that it was carrying a content overload and deplored by students as being a curriculum that taxed the

memory and not the intellect, and therefore a reduction in curriculum content was needed.

- There was a need to re-humanize medicine and to train doctors who were capable of caring for a society that was in transition.
- There was a great need to prepare students for the usage and access of emerging information technologies and to enable them to seek out knowledge independently and to promote an interest and motivation in an ongoing desire to learn.

Thus in 2001, the NRMSM implemented a PBL medical curriculum with its aim being to produce doctors who would have a holistic approach to their patients in a situation where information was developing and changing rapidly, who would be concerned primarily with prevention rather than cure and to develop a family physician who was concerned with the whole individual and who would assess and meet primary health care needs (NRMSM Faculty Handbook, 2001). It was in this context of a changing medical environment and in the present state of South Africa's health care system with its under-staffed and under-resourced urban and rural health care facilities that this study was undertaken.

In 1997, the NRMSM Faculty Board appointed a Curriculum Development Task Force (CDTF) to initiate and guide the process of developing the new Curriculum 2001 for undergraduate medical students. Some of the guiding principles that the CDTF considered during the process of developing Curriculum 2001 are summarized below:

- The modular content would be constructed in such a way that medicine would be recognized as a science and an art which dealt holistically with a person in terms of the body, mind and spirit. The patient would be considered as an integral member of a family and society with due consideration for his/her specific human and ethical rights.
- The emphasis in medicine in Curriculum 2001 would be posited on the concept of the promotion and facilitation of health and healthy lifestyles rather than disease or ill health. Essential components of the curriculum should be the prevention of illness and aspects of public health.

- Curriculum 2001 should be developed to include all aspects of the patient-doctor relationship, the role of doctors within a community, the health care system in the country, relevance of health economics, good practice management and legal/ethical aspects of medicine that were applicable to undergraduate medical students.
- The philosophy underpinning Curriculum 2001 should reflect that learning at the medical school was only the first step in a life-time of learning and therefore Curriculum 2001 should accommodate mechanisms that develop motivation and skills for life long learning. The learning process in the new curriculum should be one of student-centred, self-directed learning, based on a problem.

(Ohlmsdal, 1997).

It was in line with the literature on PBL and the above CDTF guidelines, that the NRMSM designed a curriculum that was intended to be integrated, student-centred, self-directed and problem-based (NRMSM Faculty Handbook, 2001). Following Faure (1972: 681) who says that “Lifelong education should be adopted as a guiding principle for reforming education at all levels and in all countries,” the NRMSM introduced a five year problem-based learning curriculum in 2001 that covered the registerable basic medical qualifications, the degrees of Bachelor of Medicine and Bachelor of Surgery (MBCChB). It was a rule by the HPCSA that the degrees had to be taken concurrently.

1.6. Structure of clinical aspects of Curriculum 2001

Curriculum 2001 consisted of thirty six modules in each of the five years of study. The duration of the modules were six weeks for years one to four and seven weeks for year five. The curricular content, made up of the different disciplines of medicine, was integrated in a spiral¹ manner and presented as Themes with generally one Theme per module. Students were also exposed to clinical situations early by undertaking clinical skills training at the Skills Laboratory from year one. According to the NRMSM Faculty

¹ spiral manner: reference to the spiral nature of the entire PBL curriculum, where content is arranged in such a way that there is vertical and horizontal integration of medical knowledge. In the model that I propose (pg 197) the spiral denotes only the clinical knowledge construction.

Handbook, (2001), the programme was planned to ensure the highest possible standard of education and training by the stimulation and encouragement of understanding instead of rote learning. The programme was administered by the School of Undergraduate Medical Education (SUME) at the NRMSM and followed the stipulated requirements of the HPCSA for the degrees of MBChB. On completion of meeting all the prescribed requirements of the HPCSA, the graduates of the University of KwaZulu Natal could register as medical practitioners in terms of the Medical, Dental and Supplementary Health Service Professional Act 1974 (Act 56 of 1974).

Curriculum 2001 used a method of learning in which students first encountered a problem which was then followed by a student-centred inquiry process (Neufield and Barrows, 1974; Schmidt, 1993; Boud and Feletti, 1997; Barrows, 2000). At the start of each Theme, the students were given a Theme book (for an example, see Annexure B). The Theme book served as a guide for the duration of the Theme and consisted of weekly time-tables, details of the practicals, skills, large group sessions and most importantly the paper cases for each week. The facilitators¹ were also given Theme books. However, their books contained the learning goals for the weekly paper-cases whilst the students' books did not. The week was strategically structured so that the paper-cases in the small group facilitation sessions took place early in the week. This meant that the problems would be presented without the students being given prior readings or lectures on the cases. During the small group facilitated sessions, groups of between ten to twelve students worked together with the facilitator to identify the learning goals through the eight-step PBL process (Annexure C). They would then be left on their own to research the learning goals. During the week the students attended relevant practical sessions and clinical skills sessions (in the Skills Lab) that were part of the weekly objectives.

Large group resource sessions that served to reinforce the weekly learning objectives were also time-tabled. At the end of the week there was a second small group facilitated session that served as a means for reporting back of the conducted research. It was during

¹ Facilitator: non expert who guided the PBL tutorials through a collegial, non authoritative process to enable the students to achieve the learning goals for each of the paper cases through the 8-step PBL process. See Annexure D (Facilitators, guidelines) and Annexure C (8-step PBL process).

this second small group's session that active discourses and analysis of the problems took place. The students also reflected on what they had learnt individually as well as a group. They convened with the same facilitator and group for the duration of the Theme. In this way, the core material that was required for the module was learnt.

My study traced the participants' experiences in this learning context and sought to understand how and why they were able to construct a relationship with subsequent clinical environments through the application of the knowledge and skills that were gained in such PBL pedagogy. According to Blumberg and Micheal (1992), student-centred and self-directed learning requires students to have a greater input and responsibility in deciding what and how they want to learn. For the first three years and part of year four, at the NRMSM, the small group tutorials, clinical skills training and practicals constituted the main instructional activities in Curriculum 2001. Traditional instructional methods, for example, lectures were kept to a minimum. I will now elaborate on the clinical education aspects of the PBL medical curriculum. Clinical education in medicine refers to the pedagogy of the practical aspects of the study of medicine and consisted of leaning experiences in a simulated clinical environment (Skills Lab) as well as in the real clinical environments of hospital wards, clinics, General Practitioners' rooms and rural health care facilities. Clinical education in the PBL curriculum was integrated across the curriculum from year one to year five of the programme. During the first three years, the students were taught clinical skills in the Skills Laboratory.

In the Skills Laboratory the students were trained on models/mannequins, simulated patients¹ and on each other. When the PBL curriculum was implemented in 2001 the Skills Laboratory was staffed by two Advanced Life Support Paramedics and four part-time sessionally paid clinicians who were solely responsible for teaching and assessing the emergency and clinical skills in Curriculum 2001, at the Skills Laboratory.

¹ Simulated patient: also referred to as a standardized patient in health care, is an individual who is trained to act as a real patient in order to simulate a set of symptoms or problems.

The Skills Laboratory created an opportunity for the students to acquire clinical and emergency skills alongside their studying of theoretical knowledge. For example, the students would have studied the theoretical aspects of a complaint earlier in the week from the learning goals of the paper-case, then they would be rostered to attend a clinical skills training session at the Skills Laboratory during the same week to be taught the clinical skills related to this complaint. At an early stage, therefore, the integration of theory and practice was designed to take place.

Skills training at the Skills Laboratory was organized on a longitudinal basis. It was an ongoing process from day one of the curriculum up until the end of the third year. Complex skills were broken down into smaller and less complex elements. Students started off with very basic principles of the examination techniques of a patient and gradually moved on to the next stages of complexity in those techniques and procedures. By the end of the three years, the students were able to perform complete doctor-patient encounters in a systematic and technically correct way. At the Skills Laboratory students were provided with a number of different training situations. Besides their scheduled weekly skills training sessions, students were encouraged to book extra sessions after hours or during the weekends. Clinical skills tutors, emergency skills tutors, teaching aids, models and skills protocols¹ were made available for students to enable them to practice the skills that they felt uncertain about. In this way, they had many opportunities to acquire and maintain their clinical skills abilities. The opportunities also enabled the students to learn and master the skills at their own pace. The following didactic principles were followed in the teaching of clinical and emergency skills at the Skills Laboratory.

- **Gradual increase in the complexity of skills**

A skill can best be acquired when the smallest constituting elements are identified. Through a process of step-by-step mastering of those smallest elements, the students were able to develop their skills abilities. The Skills Laboratory provided a variety of

¹ Skills protocol: refers to a step-by-step guide on how to perform a clinical/emergency skill. (physical examination technique, procedure etc). Annexure E is an example of a skills protocol for the collection of blood specimens.

circumstances and contexts for the students to practice their skills. Thus, they were finally able to master the whole action of the skill in a flexible way. The training of skills in the Skills Laboratory increased in complexity from year one to year three of the curriculum.

- **Gradual increase in complexity of practicing situations**

The clinical and emergency skills were acquired in different practicing situations (models, mannequins, simulated patients etc). Analogous to the increase in complexity of the skills, the practicing situations also increased in complexity. This created an order to the level of mastery of a particular skill. If at any stage a student considered his/her level of mastery of a particular skill to be insufficient, opportunities were created at the Skills Laboratory for him/her to return to the less complex practicing stage, and practice until he/she was secure enough to proceed to the next stage.

- **Gradual increase in interaction of different knowledge and skills**

Not only could the students practice their clinical and emergency skills in the Skills Lab, but they were also given opportunities during the week to use their skills and knowledge in simulated doctor-patient encounters in the Skills Lab. With the use of simulated patients, every student was able to practice an entire doctor-patient interaction where the students could practice their ability to integrate their knowledge as well as their physical examination techniques and communication skills. In this way, during the first three years of study, they were able to deal with complex, multi-disciplinary problems that patients presented with.

The discipline of medicine demands competence in a wide variety of psychomotor skills. In developing the skill of inserting an intravenous drip on a patient, for example, the student has to use a high degree of physical co-ordination. This is in accordance with Bloom's (1956) psychomotor domain where the student first practices the skill until precision is achieved. He/She needs to be able to recognize where in the patient management sequence the skill fits; and then without even thinking about how to perform the skill, the student should be able to perform the procedure in an emergency situation in

order to save a life. An example of how the skill of inserting a peripheral intravenous drip on a patient as taught in the Skills Laboratory using Bloom's Psychomotor Domain is as follows:

Step 1- the students were given the skills protocol (step by step procedure guide) prior to the scheduled skill session.

Step 2- a demonstration of the procedure was conducted in the Skills Laboratory by the tutor on a model that closely resembles a human arm that had plastic veins filled with simulated blood.

Step 3- the student was subsequently requested to perform the procedure on the model under the watchful eye of the tutor and fellow students in the group (until the required level of competence had been achieved).

Step 4- the student performed the procedure on a simulated patient (under very close supervision).

Step 5- the student performed the procedure on real patients in the real clinical setting (Trauma Unit under the supervision of an intern).

Step 6- the student subsequently performed the procedures as part of a complete patient management protocol in the emergency situation.

The Skills Laboratory was a safe learning environment where important clinical skills and life-saving procedures were performed on models and mannequins until they were perfected. This eradicated the traditional method of learning skills and procedures directly on real patients. The safe learning environment of the Skills Laboratory can be paralleled to what Schon (1988) called a 'practicum.' He described the 'practicum' as a virtual setting that was designed for the task of learning a practice. In a context that approximated the practice world, students learnt by doing. The Skills Laboratory thus

was a “virtual world relatively free of pressures, distractions and risks of the real one to which it nevertheless referred” (Schon, 1988:200).

During year three of Curriculum 2001, the students were introduced to the clinical methods course that was offered by the various clinical departments of NRMSM. The clinical methods course was held at the different district-level hospitals in Durban and Pietermaritzburg. During this course the students were exposed to patient-care in the clinical disciplines of Internal Medicine, Surgery and Paediatrics. The students were divided into the following groups:

Clinical Methods 1- Medicine, Family Medicine and Dermatology

Clinical methods 2- General Surgery and Orthopaedics

Clinical Methods 3- Paediatrics

During the fourth year, the clinical exposure in the hospital setting was further expanded to the following disciplines: Internal Medicine, Psychiatry, Family Medicine, Obstetrics and Gynaecology (O & G), Surgery and Paediatrics. The clinical methods rotations were as follows:

- **Clinical rotation 1-** Surgical Specials and Anaesthetics
- **Clinical rotation 2-** Psychiatry and Internal Medicine
- **Clinical rotation 3-** O & G, Family Medicine and Paediatrics

In years three and four, the Theme ran concurrently with the clinical methods modules. The weekly time-tables were arranged in such a way that students attended the small group tutorial sessions, large group resource sessions, practical and clinical skills sessions at medical school on three days of the week and the remaining two days were spent at the hospitals rotating through the clinical methods modules. Year three consisted of six Themes and year four had seven Themes that covered the theoretical content of the curriculum. The content covered in the Themes was not necessarily related to the clinical

methods modules. This issue is discussed later in the phenomenographic analysis (Chapter 4).

In their final year of study the students rotated through the six clinical modules covering Family Medicine, Medicine, O & G, Paediatrics, Psychiatry and Surgery. According to the Health Professions Council of South Africa (HPCSA), a medical practitioner has to demonstrate a basic understanding of all the above mentioned disciplines¹ in order to practice in South Africa (HPCSA, 2005b, Annexure F). The six modules followed the same format as the final year of the six year traditional curriculum. In 2005, both the PBL cohort and the traditional cohort were in final year together. This will be discussed in more detail in Chapter 4.

It was hoped that the final year would provide the ‘big picture’ where students would be able to revisit, consolidate material and be able to apply all the knowledge and skills that they had encountered during the previous four years. It was required of the students to apply the ethical principles to the clinical decisions that they made and to attain a degree of maturity that was required in the profession (NRMSM, 2005). The six disciplines that they encountered in the final year represented the majority of clinical practice during the internship period and general practice. It therefore created an opportunity for the students to achieve the clinical and personal maturity that was required for a successful internship period.

According to the NRMSM Student Intern Guide (2005) that the final year students were given before they attended the clinical rotations in their final year of study, students were advised to use the tools of discovery, initiative, self-directed learning, a problem-based learning approach and the life-long learning philosophy during their final year. The handbook also stated, “View teachers as a resource (c.f. internet, textbook, journal, etc)

¹ disciplines: The medical field is divided into preclinical and clinical disciplines. Examples of preclinical disciplines are Anatomy, Physiology, Pathology, Biochemistry etc. The clinical disciplines are Surgery, Medicine, Paediatrics, Psychiatry and Obstetrics and Gynaecology. In this thesis, the use of the term ‘discipline’ is sometimes used in the more encompassing sense of the ‘medical discipline’ as is common parlance in the medical fraternity. In this case, ‘discipline’ relates to the medical community as opposed to a particular subject area.

and not the ultimate source of information or knowledge...Enquire, question, challenge - always! This will ensure that you obtain the best evidence for your clinical decisions and don't fall into the trap of doing things as they had been done by your predecessors without understanding the basic reason behind the decision" (NRMSM, 2005: 3). At the same time the students were told to value the patients that they would encounter during the clinical methods modules as well as the interns, community service officers, registrars, medical officers, and consultants and nursing staff with whom they will be interacting during their work in the wards. They were also reminded that patients were people and should be treated as such and not as a disease. Every encounter with a patient should be seen as a learning experience with human beings rather than 'clerking'¹ in preparation for a tutorial or a part of a crowded waiting room that needed to be cleared. (NRMSM, 2005, Annexure G).

The words of advice that the faculty offered the students prior to their attending the clinical rotations served as guidelines for the professional identity that the students had to assume during their final year of study. Chapter 7, section 7.4.2 discusses the issue of professional identity further. However we need to take cognizance of the guidelines and relate this to the actual events that transpired in the wards during their clinical rotations as reported by the participants of the study. For each of the six disciplines that the final year students rotated through, they were given logbooks² (Annexure H) by the relevant department. The purpose of the logbook was to advise the students of the department's requirements, to enable students to record the details of the training that was received so that any shortcomings could be identified and addressed and to assist the consultants from the departments to evaluate the overall training of the students with the view to providing any extra experiences that would benefit the students. Each department stipulated their own rules pertaining to the purpose of the logbooks according to their requirements. I have summarized some of the generic rules as follows:

¹ clerking: examining of a patient and making detailed notes on the findings

² logbooks: a compulsory requirement of the clinical methods modules where the students had to perform specific skills and procedures on the patients. These books were required by the specific departments to be signed off on a daily basis by the medical ward staff who were supposed to observe the students whilst they performed the examination techniques and procedures on patients.

- It was mandatory and usually contributed towards a block assessment mark¹. Had to be completed daily and carried by the students at all times to avoid retrospective /inaccurate recordings.
- Had to be signed by the consultants/registrar at each tutorial, ward round, intake, and when procedures were performed or observed.
- Had to be discussed by the student with their unit consultants once a week.
- Was reviewed by the unit consultant at the end of the block.
- Contributed to the DP certificate that either allowed the students entry or barred the students from undertaking the final examinations for that particular block.

The students were usually briefed on the first day of the block on what their roles and responsibilities were regarding their clinical rotations through that particular discipline. The NRMSM Student Intern Guide, 2005 (Annexure G) gives a detailed description of all the disciplines with their requirements. My study was concerned with the participants' experiences of the phenomenon during their clinical rotations in the wards, so I will outline some of the requirements in this regard. As stated in the Student Intern Guide Book, there are specific requirements for each discipline. However, I will provide a generic guide for the purpose of creating a context for what was expected of the participants during their clinical methods modules in the wards.

When the students attended the various hospital attachments they were expected to behave and dress professionally and to treat the patients with respect and dignity. They were compelled to wear clean, white coats at all times in the wards as this was seen to be symbolic of their status as doctors. Their ward attendance times and details were scheduled according to the department's requirements. In the wards, the participants were usually allocated to a medical team that consisted of an intern, registrar² and a

¹ block assessment mark: was a progressive assessment mark that was awarded by the consultant of the Unit and consisted of the logbook mark, practical assessments (OSPE), clinical case presentations and ward rounds during the block.

² registrar: a doctor who is receiving advanced training in a specialist field of medicine in order to become a consultant.

consultant.¹ They were required to attend all intakes², daily registrars/consultant ward rounds³, follow-up clinics and grand rounds. Each student was allocated three patients at any time with usually eighteen to twenty patients throughout the block. During the block, students were required to fully clerk the patient, present the findings to the registrar/consultant, perform relevant procedures, obtain results and discuss management with the registrar/consultant. They were expected to provide follow-up care of the patients from admission until discharge. Regarding procedures, students were to observe various special procedures and were required to perform certain procedures under supervision of the registrar or medical officer.

In terms of ward teaching, tutorials including bedside tutorials and case presentations were offered by the departments. See Annexure H for specific departmental offerings. Each department also stipulated their own formats of the clinical assessments that were conducted in the wards (Chapter 5, Section 5.2.2.4 details the participants' experiences of such clinical assessments).

To conclude this section on the context of the clinical education modules, I would like to state that the people who were responsible for the clinical teaching in the wards were mostly on a joint employment agreement between the Department of Health (KZN) and the University of KwaZulu-Natal with the majority of the staff being employed solely by the former. Unfortunately, there appeared to be no obligation on the part of those staff members to supervise undergraduate training at the hospitals (from the reports of the participants). It was vital that academics within the context that I have described were able to tell whether a PBL approach to clinical pedagogy worked in the clinical environments of South Africa (discussed further in Chapter 8).

¹ consultant: a specialist in a specific discipline of medicine e.g.: Surgery or Medicine

² intakes: a 24hour shift in a specific discipline of medicine e.g.: Surgery or Medicine

³ ward rounds: when the consultant and medical ward staff accompanied by the students proceed from bed to bed reviewing each patients' charts and condition, performing relevant examination if necessary. This may be followed by discussions around the patients' medical condition regarding aetiology, pathology, treatment, investigations required etc. It is at this stage of the ward round that the consultants may ask the students any question pertaining to that particular patient's condition and related theoretical knowledge of the disease/condition.

Diagram1: Diagram of the different clinical environments and the levels of experience.

As established, study was located at the Nelson R Mandela School of Medicine (NRMSM), as well as at the various provincial hospitals in KwaZulu Natal at which the participants were rostered and the urban and rural hospitals in KwaZulu Natal at which they undertook internship and community service.

1.7. Outline of the thesis

Having provided a brief introduction to the rationale for the study and the context of the study, this chapter ends with a synopsis of the forthcoming chapters.

Chapter 2 provides a picture of the problem-based learning methodology and philosophy, from its origins to international and national perspectives. Since the phenomenon of the study is learning the clinical aspects of a PBL medical curriculum,

this chapter focuses more on the clinical aspects of PBL and the clinical education experiences thereof. The South African health care system provides the context for the internship and community service experiences and will therefore be explored in more detail in this Chapter.

Chapter 3 describes the research design and methods that were used in the study. It introduces phenomenography as the research methodology and provides an insight into phenomenographic theory. It reiterates the first two research questions and provides descriptions of how the participants were selected and interviewed. The phenomenographic analysis steps that were implemented in the analysis process are outlined. There are details on the measures that were undertaken to ensure the validity and credibility of the study. The Chapter ends with a reflective account of the phenomenographic process and the use of phenomenography as a research methodology in the study.

Chapter 4 is the first part of the phenomenographic analysis. The ‘what’ aspect’ of the phenomenon is introduced and the phenomenographic categories of descriptions are described and interpreted. In this Chapter, data is presented for the first time and reflected in the categories of description of the participants’ experiences of the phenomenon. In describing and interpreting the experiences the first critical question was addressed.

Chapter 5 is the second part of the phenomenographic analysis and foregrounds the ‘how’ aspect of the phenomenon. This chapter describes how the participants constructed relationships with the clinical environments during their internship and community service. Here again, data is presented that describes the categories of description of the participants’ experiences. Through the use of the ‘Professional Entity Theory’ (Reid and Petocz, 2004) the chapter describes how the second critical question was addressed.

Chapter 6 provides an account of the methodological issues that were experienced on completion of the phenomenographic analysis. It is argued that there was a need for an additional lens. In doing so, the Chapter shows why phenomenography alone could not

be used for the purposes of answering the third critical question. The phenomenographic findings that were reflected in the outcome space needed unpacking and deeper understanding. An account of my personal epistemological shift is also provided in this Chapter that deals with ‘issues of all kinds.’ Critical Discourse Analysis is subsequently described and I argue how it was better suited to expose and illuminate the phenomenographic findings. The Chapter also discusses matters of ethical consideration that guided the study.

Chapter 7 provides an account of the critical discourse analysis. It describes how CDA was used to further analyze the phenomenographic findings and in so doing exposes and illuminates the discursive practices and the power relationships that the participants experienced during their undergraduate clinical training in the wards. From this analysis the third critical question is theorized and addressed. The Chapter uses critical theories of Hegemony, Knowledge Construction and Identity to theorize around the effects of the discourses that were analyzed in the study.

Chapter 8, the final Chapter, serves as a conclusion to the thesis and reveals an empirical model that I am proposing for future innovations to the PBL curriculum that are currently underway at the NRMSM. A description of the model illuminates resolutions from the major findings in the study regarding medical knowledge construction in a PBL curriculum. This new innovation will serve as my contribution to the world of medical education.

CHAPTER 2 – PBL IN THE CLINICAL REALM

2.1. Introduction

Preparing students to take up the profession of medicine is as much about ethics and humanity as it is about knowledge. This is especially true in the South African context of grossly uneven resources. This chapter describes the educational preparation of the participants by focusing on the pedagogy of the clinical aspects of a PBL medical curriculum and the subsequent clinical environments within the South African health care context. In this chapter PBL is discussed from its educational origins internationally in ‘first world’ countries to its South African origins. PBL at the NRMSM was adopted as a learning approach in 2001. The learning theories that PBL uses are introduced and studies

that show the impact of PBL curricula on students' learning are highlighted. Since the phenomenon of the study is concerned with the clinical education environments, studies that were conducted in these settings will be reviewed.

2.2. The educational origins of PBL

2.2.1. International origins of PBL

As a method of instruction PBL stems from within the rationalist tradition and can be traced as far back as 1929, when Dewey made pleas for the fostering of independent learning in children (Norman and Schmidt, 1992). Schmidt (1993: 11) reported that, "The role of problems as a starting point for learning can be attributed to Dewey, who stressed the importance of learning in response to, and in interaction with real-life events." In terms of the adoption of PBL in the medical school context, it was originally developed and implemented at the Faculty of Health Sciences of the McMaster University (North America) around 1965 (Schmidt, 1993). Among the originators of PBL at McMaster were John Evans, Bill Spaulding, Bill Walsh, Jim Anderson and Fraser Mustard. These men were strongly influenced by the case-study method that the Harvard Law School had developed in the 1920s. In 1966 a neurologist by the name of Howard Barrows joined McMaster University and played a major role in the design and implementation of its PBL medical curriculum.

In the 1970's two other medical schools, the University of Limburg (in Maastricht in the Netherlands) and the University of Newcastle (Australia) adapted the McMaster model (Savin-Baden and Major, 2004). Subsequently in the late 1970s, some medical schools introduced a PBL track that ran parallel with their traditional medical curriculum. Barrows (2000) reported that the University of New Mexico began its PBL track in 1979. The NRMSM could identify with the University of New Mexico because in 2001, when the PBL medical curriculum was implemented at the NRMSM, the traditional curriculum was still in existence with only first year students being in the PBL track whilst the second to the sixth year students were in the traditional programme. The last of the

traditional cohort graduated in 2006. Subsequently, all the students at the NRMSM follow the PBL medical curriculum.

In 1981, Howard Barrows moved from McMaster to become the Associate Dean at the Southern Illinois University's School of Medicine in USA. Here he had significant influence in initiating a separate PBL track in the early 1990s. Around the same time Harvard Medical School also integrated basic science and clinical medicine throughout the curriculum. Countries world-wide were questioning the effectiveness of the traditional curricula and were suggesting that students were unable to transfer the knowledge gained in such a manner to the authentic clinical settings. Barrows and Benett (1972) reported that traditional education actually impaired students' natural problem-solving skills. After North America, Australia, the Netherlands and the United Kingdom realized that PBL seemed to address the need to produce doctors with adequate problem-solving and critical thinking skills, PBL as an educational methodology also became popular throughout Sweden, Switzerland, Brazil, Chile, Hong Kong, and South Africa (Savin-Baden and Major, 2004).

2.2.2. South African origins of PBL

The origins of PBL in South African medical schools can be traced to the 1990s. Meel, a Professor at the University of Transkei reported that a PBL curriculum was first implemented there in 1992, (2002). This curriculum subsequently underwent several changes and in the year 2000, a five year PBL curriculum was implemented. According to Meel (2002), this move to a PBL curriculum was motivated by the Health Professions Council of South Africa's (HPCSA) concern around the knowledge, attitude, skills and habits of the South African medical graduates. There were concerns that the graduates needed to display exemplary behaviour within the communities that they worked as practicing doctors (HPCSA, 1992).

Around the same time, the use of outcomes-based education (OBE) became a policy in the new South African Education Department and was introduced in schools throughout

South Africa. Meel (2002) stated that OBE was implemented to meet the shortcomings of education under the previous apartheid government. According to Jansen (1998), the South African government of national unity issued several curriculum related reforms that were intended to democratize education and eliminate the inequalities of the post-apartheid education system. OBE was seen as an approach to education that would enable such reform in the South African education system. Support for the OBE approach in the anti-apartheid movement was based on a belief in the importance of placing the learner at the centre of the education process (Allais, 2003). The apartheid based education system was widely equated with rote learning which was seen to undermine critical thinking. There was therefore a need for an educational approach that would be closely associated with the democratization of the South African society (Allais, 2003).

Since the adoption of OBE into the South African education system, there has been a wide-spread critique around its implementation in the South African classrooms. One of the major concerns of OBE was that as an educational approach it was being driven by politics and in reality had very little to do with what occurred in the everyday lives of the South African classrooms. Whilst Professor Jonathan Jansen (Jonathan and Christie, 1999) has many arguments pertaining to the implementation of OBE and its failure in South Africa (Jansen, 2010), the question that needs to be raised is whether the philosophical underpinnings of such an educational approach should be ignored.

It was not within the ambit of my study to compare OBE with PBL, neither was it to critique the implementation of OBE as a curriculum reform strategy in schools but suffice to say that I am of the opinion that the HPCSA considered the philosophical principles of OBE when it began looking into the curriculum reform that was necessary of medical curricula in its quest to the doctor that was required for the communities of South Africa in the century. The HPCSA identified with the new policy of OBE in South African schools and stipulated that medical schools should follow a similar approach in their teaching of medical students. Chapter 1, section 1.2 described the rationale that was stipulated by the HPCSA for the motivation of change in medical curricula in South African medical schools and that this emphasized the fundamental principles and

methods that promoted understanding and problem-solving skills (HPCSA guidelines, 1995).

According to Kent and De Villiers (2007, pg 906), “South Africa needs medical practitioners who will serve the health needs of its population and the universities are moving with nerve-racking speed in this direction.” They further indicated that all eight medical schools in South Africa were now part of the Faculties of Health Sciences. From this kind of collaboration it may be implied that medical education was moving towards an interdisciplinary approach (Kent and De Villiers, 2007). All eight medical schools have subsequently moved from a pure discipline-based traditional approach of teaching medicine, to a form that takes on problem-based, student centred approaches. The NRMSM was one of the first to move completely to a five year pure PBL approach in 2001. The other medical schools have adapted their curricula to variations of PBL and problem-orientated approaches.

2.3. PBL as an approach to learning

The literature provides several criteria based on educational principles for student learning in PBL (Charlin, 1998; Schmidt, 1993; Savin-Baden and Major, 2004; Mattick and Knight, 2007). I have summarized the key criteria as follows:

- ❖ The problem acts as a stimulus for learning.
- ❖ It is an educational approach, not an isolated instructional technique.
- ❖ It is a student-centred approach.

The student's learning must involve:

- ❖ Active processing of information.
- ❖ Activation of prior knowledge.
- ❖ Meaningful context.
- ❖ Opportunities for elaboration/organization of knowledge.

There are a variety of perspectives about how people learn. PBL is an approach to learning that has been constructed from a perspective that considers a whole range of learning theories (Savin-Baden and Major, 2004). The originators of PBL were mainly medical educators and were influenced during the designing of the approach by common conceptions about how people learn. PBL attempts an integrative approach to learning since it draws on a number of learning theories namely: behavioural, cognitive, developmental and humanistic learning approaches (Savin-Baden and Major, 2004). One of the main factors that PBL acknowledges out of these disparate theories is the importance of learning through experience.

Some behavioural theories of learning such as the Classical Conditioning Model posed by Watson (1913) and Operant Conditioning proposed by Skinner (1953) ran contrary to PBL mainly because they generally assert that we cannot observe learning except through behavioural changes. These theories see learning as a relatively permanent change in behaviour that was brought about as a result of experience or practice. This makes the outcome the most important factor, rather than the interactive process of learning that PBL tries to promote. On the other hand, behaviourists like Thorndike (1913) provided an understanding of the improvement of learning through feedback, clear goals and practice which are some of the main concepts that underpin PBL. In the same regard, Savin-Baden and Major (2004) point out that Hull's (1943) work and his notion of Drive Reduction Theory, which asserts that behaviour is determined in part by learner motivation, promotes a key aspect of PBL which asserts that students should be motivated as stakeholders attempting to solve important problems.

Cognitive theories of learning provide an interesting lens for understanding the origins of PBL because they are directly concerned with mental processes. Cognitive theorists usually seek to understand how students learn and emphasize what processes go on inside the mind when such learning occurs. According to the literature on PBL, one of its primary goals is to develop skills for better learning, as well as learning how to learn (Schmidt, 1993; Savin-Baden and Major, 2004; Dolmans *et al.*, 2006; Mattick and Knight, 2007, Cohen-Schotanus, *et al.*, 2008). Cognitive theorists have also argued that new information has to be interpreted in terms of both prior knowledge and shared perspectives (Tolman, 1948; Piaget, 1929; Ausubel, Novak and Hanesian, 1978). It can therefore be claimed that meaningful material can only be learned in relation to a previously learned background of relevant concepts. PBL advocates such as Barrows (1986) and Camp (1996) argue that students enter any learning environment with pre-existing knowledge and cognitive structuring. Thus the focus in PBL centres is on helping students to utilize their previous knowledge and ways of thinking and to construct it into a new form that is understandable and meaningful to them (Savin-Baden and Major, 2004).

Humanist theories, including the work of psychologists such as Maslow (1968) and Rogers (1983) offer us a further understanding of PBL because they saw learning as a personal act designed to fulfill potential. According to these psychologists, students had both affective and cognitive needs, so the goal of learning should enable them to become self-actualized and autonomous. It was, therefore, the responsibility of educators to facilitate the development of the whole person. In the PBL environment, the facilitator helps to provide a supportive environment in which students are enabled to recognize and explore their needs. The facilitator is seen as an equal in the small group learning process and is thus able to liberate the students and allow them the freedom to learn.

Developmental theorists are concerned with models that include the cognition and development of students' learning. Their main concern is to enable students to develop both an understanding of the nature of knowledge and ways of handling different conceptions of the world so that knowledge acquisition is an active process (Savin-Baden

and Major, 2004). Developmental theorists such as Piaget (1929) and Perry (1988) place the issues of students' experience centre stage and argue that students proceed through a sequence of developmental stages. According to Ausubel (1978), learning occurs when a student is presented with new information that possesses some external or internal characteristics that enables them to associate it with their previous learning. A bridge between new material and existing ideas is therefore essential.

PBL takes into account the role and relevance of learning through and from experience. Savin-Baden and Major (2004) state that:

PBL draws from all the cognitive and developmental theories where students compare new information to existing cognitive structures, they seek to determine the overall structure of the problem, their learning capabilities may be extended through guidance and collaboration, they learn through progression of experience and they learn best when they can see the meaning of learning.

(Savin-Baden and Major, 2004: 24)

PBL also fits with tenets of adult learning theory. According to Camp (1996), student autonomy, building on previous knowledge and experiences, and the opportunity for immediate application, are all recognized to facilitate learning in adults. Medical students are admitted into NRMSM as adults and thus should be able to adapt to the PBL approaches. The father of adult learning theory, Knowles (1980), proposed that appropriate conditions for adults to learn effectively include a learning environment characterized by physical comfort, mutual trust and respect, mutual helpfulness, freedom of expression, and accepting of differences. He also said it should be where learners perceive the goals of the learning experience to be their own goals, where learners accept a share of responsibility for planning and operating the learning experience and therefore have a commitment to it, where learners participate actively, and have a sense of progress towards their own goals. These benefactors, as advocated by Knowles, describes the PBL small group tutorial process where the student is responsible for working out his own learning goals and the facilitator is considered an equal in the learning process.

To conclude the discussion on PBL as an approach to learning, I would like to reflect on the general aim of any medical faculty. All medical faculties want their students to learn, to remember, to apply and to continue to learn once they are out from under their tutelage. According to Camp (1996), many traditional curriculum students memorize, forget, and fail to apply or integrate knowledge and resist further learning. He further states that the PBL curricula on the other hand, seem to foster more positive attributes of learning in students.

2.4. The impact of PBL curricula on student learning

Over the past forty years, PBL has become popular in medical education world-wide as the ‘new curriculum’ innovation. Many medical educationists and theorists from around the world hoped that PBL would be the solution to the problem of the transferring of medical knowledge and clinical skills learned at medical schools to real clinical environments (Svinicki, 2007). The need to re-define basic medical education had been recognized and accepted by international and local medical schools and educational principles on which medical curricula should be based have been put forward. The NRMSM took this step forward in changing its traditional curriculum to that of a PBL curriculum in the hope that undergraduate medical education would make significant progress towards achieving its educational goals and providing the communities of South Africa with the doctors they needed.

In order to understand the impact that the PBL curriculum can have on the participants’ experiences of learning the phenomenon through this PBL pedagogy, I would like to provide an overview of what the literature says about what happens to a student in PBL. Schmidt *et al.* (2009: 229) says that, “PBL is not a single educational treatment but a conglomerate of interventions each of which is thought to foster learning.” From the literature it can be determined that different medical educationists and theorists view the goals of PBL differently. As such, they tend to stress certain aspects of PBL more than other aspects (Schmidt *et al.*, 2009). Schmidt and colleagues have identified three different types of PBL curricula by categorizing the different interpretations of what

happens to the student in PBL. A summary of the three types of PBL curricula together with what each of them emphasizes is provided below:

➤ **TYPE 1 CURRICULA**

- Helps students to build flexible mental models of the world.
- The problem represents the part of the world that must be understood by the student.
- The small group process and self study enables students to construct a theory to explain the problem.
- The problem activates prior knowledge which is then collaboratively used to construct a tentative model of the situation.
- The student subsequently engages with literature to test, enrich, or modify the model.
- The literature is studied with preconceptions in the mind of the student resulting in the resolution of faulty prior knowledge and the better learning of new knowledge.
- The activation of prior knowledge provides scaffolding for new information.
- Returning to the problem after individual study, further elaborates on what has been learned and is used to check if a deeper understanding has evolved.
- Discussion of the problem before processing the relevant information facilitates understanding of that information.
- The literature reveals the following medical schools use this type of curriculum: Maastricht, Manchester, Missouri and McMaster (latest curriculum).

➤ **TYPE 2 CURRICULA**

- The goal is to help students learn the skill of diagnostic reasoning by mimicking the thinking process of the expert.

- Students formulate diagnostic hypotheses whilst working on a problem by looking at the signs, symptoms, laboratory data and by making a physical examination of the findings in order to solve the problem.
- Increasing the students' levels of problem-solving is the main goal of the curriculum.
- The literature reveals the following medical schools use this type of curriculum: McMaster (early curriculum), New Mexico and Newcastle.

➤ **TYPE 3 CURRICULA**

- PBL in this regard is a tool for learning how to learn.
- It is important to acquire skills on how to learn because of the rapidly expanding scientific knowledge base.
- The goal of the curriculum is to prepare students for life-long learning and self directed learning.
- An example of a medical school using this type of curriculum is the Harvard New Pathways Curriculum.

Adapted from Schmidt et al., (2009: 229-230)

From the above descriptions of the different types of PBL curricula, it can be suggested that the NRMSM designed and implemented a combination of Type 1 and Type 3 curricula in its PBL Curriculum of 2001. The participants in the study experienced a PBL curriculum where the problem represented a patient problem that they would most likely encounter in the real clinical environment. These may have been problems that may be infrequent, but may have serious consequences unless recognized and managed appropriately, for example, Meningitis, was also considered. The NRMSM also designed problems that had a high social or economic impact, for example HIV and AIDS, toxic shock etc. In the first three years problems that introduced students to the important concepts or areas of knowledge in basic sciences were designed. Another consideration

for the design of a problem was whether it had implications for the prevention of disease/illness (NRMSM, CDTF minutes, 1999).

Guided by Dolmans *et al.* (1997) principles of case construction, the following guidelines in terms of the construction of the cases for the Theme books were adhered to at the NRMSM.

- The contents of the case should adapt well to the students' prior knowledge.
- The case should contain several cues that stimulate students to elaborate.
- Preferably present the case in a context that is relevant to the future profession.
- Present relevant basic sciences concepts in the context of a clinical problem to encourage integration of knowledge.
- The case should stimulate self-directed learning by encouraging students to generate learning issues and conduct literature searches.
- The case should enhance students' interest in the subject-matter, by sustaining discussion about possible solutions and facilitating students to explore alternatives.
- The case should match one or more of the faculties' objectives

(Adapted from Dolmans, *et al.*, 1997 and presented in NRMSM CDTF Minutes, 1999).

By utilizing the cases (as described above) and problems designed to match students' perceptions of their future profession and their current knowledge, the NRMSM hoped that their PBL curriculum would serve as a powerful stimulus for their students to be intrinsically motivated to learn. This integration of the basic science disciplines and other subjects into the clinical cases also emphasized other important aspects of the training of future competent health professionals. These skills include communication, teamwork, professional attitudes, values and ethics. According to the literature, such combination of early and sustained community and primary care experiences with carefully selected PBL cases relevant to priority community health problems can synergize with the promotion of population and community health education (Neufield, 1992).

By designing and implementing a PBL curriculum, the NRMSM sought to reduce the content overload and make the curriculum more relevant to the needs of South Africa whilst maintaining a standard that would be recognized internationally. The Standard Treatment Guidelines (Annexure I) and The Essential Drug list (EDL) (Annexure J) of South Africa had been compiled based on the health profile of the country and the NRMSM saw these documents as being appropriate for determining the ‘core curriculum.’ The Heads of Departments at the NRMSM were asked to submit a curriculum for their specific disciplines (the traditional ones) and the core curriculum was developed from the combination of this list and the EDL as well as The Standard Treatment Guidelines.

A summary of the shifts that the PBL curriculum was designed to bring about is presented below:

Table 1: Traditional Curriculum versus PBL Curriculum

TRADITIONAL CURRICULUM	PBL CURRICULUM
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<ul style="list-style-type: none"> • Teacher centred • Lecture based • Discipline based • Hospital based • Disease based • Standard programme • Atomistic (parts prior to whole) • Year layers, continuous 	<ul style="list-style-type: none"> • Student centred • Problem based • Integrated • Community based • Patient/person based • Electives and core curriculum • Holistic (whole prior to parts) • Modular (Blocks)
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2.5. The effectiveness of PBL curricula

Early research by Norman and Schmidt (1992) examined the psychological basis for PBL using theoretical perspectives (primarily from cognitive psychology) and reviewed studies that were relevant to those perspectives. Their study, conducted at the University of McMaster and the University of Limberg, did not compare the performances of students or graduates from the traditional curriculum with those from the PBL curriculum, but looked at testing various hypotheses regarding learning in the two curricula¹.

Norman and Schmidt's (1992) study hypothesized that PBL was more successful at teaching 'problem-solving' skills. This would entail the use of general skills that would be applied to gather, interpret and integrate data from any clinical problem. Their study proved that it was difficult to demonstrate any change in measures of the problem-solving process from the first year of medical school to clinical practice. They found no evidence indicating that one curriculum or another, PBL or otherwise were able to enhance the students' problem-solving skills independently of their acquisition of knowledge. Despite

¹ My study also did not compare the effectiveness of the traditional curriculum against the PBL curriculum but instead looked at the participants' experiences of learning within a PBL curriculum and how this experience impacted on their construction of a relationship with the clinical environments. It should be noted however that during their experiences of the clinical modules in the hospital wards, the participants reported that they were compared with the traditional curriculum students by the medical ward staff. Chapter 4 and 7 deals with this issue.

this study's findings that PBL had a negligible effect on problem-solving skills, improved problem solving remains one of the main claims about PBL made in the literature.

Subsequently there have been numerous studies regarding the effectiveness of PBL as an educational approach with differing opinions being presented (Schmidt et al., 2009). Albanese and Mitchell (1993) conducted a review of literature on the outcomes and implementation issues of PBL. They looked at studies that reviewed a wide range of outcome measures such as standardized achievements tests, clinical ratings of graduates during residency, self ratings of graduates and rates at which graduates secured one of their top three desired residences. Their findings revealed mostly mixed results with PBL students performing the same as, or slightly better than traditional students in terms of clinical assessment performances. They also reported that PBL students enjoyed their learning more but generally performed more poorly in basic scientific knowledge than traditional students.

Svinicki (2007) reported that Albanese and Mitchell (1993) acknowledged that their research on PBL had certain weaknesses. The issues that they noted that were weak pertained to the outcome criteria that were confounded by other student variables that made it difficult to demonstrate significant effect differences. They also admitted that there was a weakness regarding the experiment design, especially in terms of randomization of students to control conditions, lengthy experiment periods and maintenance of separation of the conditions etc. Albanese and Mitchell's (1993) results however, did provide some degree of confidence in PBL, despite concerns about the basic sciences. My study was particularly interested in their findings in the clinical skills domain which revealed that PBL students and graduates performed as well as or slightly better than conventional students on clinical examinations such as Part II of the National Board Medical Examination (Albanese and Mitchell, 1993). This finding has consistently been validated in subsequent studies for example (Remmen *et al.*, 2001; Edwards *et al.*, 2004; Eyal and Cohen, 2006; Evans and Roberts, 2006).

Most of the studies found that the increased clinical exposure that is typical of a PBL medical curriculum could be expected to result in an increase in the students' clinical acumen. At the NRMSM there has been no study published that compared the clinical performance of the traditional curriculum students with the performance of the PBL students, although a unique and great opportunity arose in 2005 when the two cohorts of students were in the final year together. The only study that was done during that period at the NRMSM was my Master's dissertation that was entitled, "Integrating Emergency Care into the PBL medical curriculum-staff and students' perceptions" (Reddy, 2004). The study concluded that the PBL students performed the emergency skills in a more confident and systematic manner in the real clinical setting when compared to the traditional students who had studied the same course in a traditional format in their first year.

Other meta-analyses of PBL literature were conducted by Vernon and Blake (1993) and later by Dochy, *et al.* (2003) that revealed similar findings to Albanese and Mitchell's study (1993), where they found traditional methods to be more effective for some variables whilst PBL was more effective for the other variables. In general they reported that whilst studies showed that PBL students started off with decreased levels of knowledge, they were able to retain the knowledge for longer after they had learned it. There was also a positive result in favour of PBL in terms of clinical skills knowledge. This finding is particularly relevant to my study that looked at the construction and transference of clinical skills within the PBL pedagogy.

Whilst there were several studies that looked at the effectiveness of the PBL curricula on the clinical skills competencies of students and graduates (Blake and Parkinson, 1998; O'Neill, *et al.*, 2000; Lam *et al.*, 2002; O'Neill, 2003; Evans and Roberts, 2006; Williams and Beattie, 2008; Cohen-Schotanus *et al.*, 2008; Ash, 2009), Colliver (2000) critically reviewed the literature on the effectiveness of PBL and found no evidence for its effectiveness in terms of knowledge acquisition and clinical skills competencies. He categorically stated that he and his co researchers were surprised by this result, given the

major curriculum intervention that was required when changing from a traditional to a PBL curriculum. He went on to argue that although some medical educators and theorists (Norman and Schmidt, 1992; Regehr and Norman, 1996; and Godden and Baddely, 1975) had reviewed the underlying educational principles and theories that should have enabled the PBL curricula to be more effective, his findings showed that PBL research revealed little or no correlation between educational theories and what was actually happening in PBL (Colliver, 2000).

Colliver (2000: 264) claimed that, “The problem... is that the theory is weak, its theoretical concepts are imprecise, lacking explicit descriptions of their interrelationships and of their relationships with observables, such as interventions and outcomes.” Norman and Schmidt (2000) challenged Colliver’s claims by presenting evidence that, as an educational approach, PBL was in fact more satisfying, motivational and provided a greater challenge to the learner. Whilst agreeing with Colliver about rethinking the promise of PBL for the acquisition of basic knowledge and clinical skills competencies, Norman and Schmidt (2000) argued that Colliver and his co-researchers were off the track with some of their theories supporting PBL (Svinicki, 2007). Norman and Schmidt (2000) also suggested that there was a great need in medical education for much more theory-based research.

Svinicki (2007) called for an alternative research strategy to investigate why and how PBL ‘worked’ instead of just focusing on its effectiveness and outcomes as was the trend in medical education research previously. That is, he was concerned with research that focused on the collaborative process of learning content, the teaching of teamwork skills and the learning regarding becoming part of a community of practice (Svinicki, 2007). This suggested research focus is in line with my study that questions how and why the participants constructed a relationship with the clinical environments after engaging with PBL pedagogy. I was also interested in unpacking the learning issues of the participants at a micro level and not to look at the macro level outcomes of such pedagogy. In attempting to describe, interpret and critique the participants’ experiences of the phenomenon, I also focus on the reports of their collaborative learning process, their

ability to work in a team and their engagement with the community of practice of medical practitioners.

2.6. PBL in the clinical setting

The literature on PBL purports that it is a methodology of clinical teaching that enables students to apply their theoretical medical knowledge to the practical clinical environments by facilitating the acquisition of critical reasoning and clinical skills that are essential for the medical profession. Williams and Beattie (2008) questioned whether, in reality, PBL was utilized by clinicians to teach clinical skills in undergraduate programs. Ash (2009) interviewed surgeons who were responsible for the clinical teaching of students at Flinders University to enquire what clinical teaching meant to them. The following is a summary of the surgeons' understanding of the apprenticeship model that they were familiar with, having learned to be clinical teachers in this way:

Features of the apprenticeship model of clinical teaching:

- The apprenticeship was structured by the clinical service structure and hierarchy.
- The clinical teacher was a clinician, teaching the art of practice, during clinical service.
- Clinical teaching was interactive, either one-to-one or in a small group during clinical contact.
- Learning through contact with real patients in clinical practice was highly valued.
- Learning was an experiential and social 'contact sport' with patients, clinicians and services.
- Continuity was important in multiplying the educational benefits of clinical contact.
- The development of an interactive student-teacher relationship was vital.
- The development of self-directed learning skills was crucial for ongoing clinical learning.

Ash (2009: 178).

The surgeons in Ash's study believed that their role as clinical teachers was to, "facilitate the entry of the student into the clinical workplace, to encourage contact with patients and to support learning from experience" (Ash, 2009: 179). However, the reports of the participants in my study indicated a contrary role of the medical ward staff (Chapter 7, section 7.2.). The impact of the negative learning environment that this created is also dealt with in Chapter 7. Williams and Beatties' (2008) study identified key gaps in the clinicians' understanding of clinical teaching in the clinical environment. Their study revealed a distinct gap between what happened in the PBL process at medical school and the actual practice setting. In the wards, the clinicians reverted to traditional teaching methods of the 'master-apprentice' model where they were the content experts. Their findings confirmed that PBL methods did not automatically transfer to the clinical setting. The same can be said for the NRMSM experience. Whilst the participants experienced the PBL processes in the Themes at the medical school during the first three years, the application of such PBL processes did not take place in the clinical setting. Instead a similar 'master-apprentice' model was adopted along with other hegemonic practices as will be discussed in Chapter 7.

According to the literature on the application of PBL in the clinical setting, there is a need for further research into the development of clinical education within a PBL context (Antepohl, *et al.*, 2003). O'Neill *et al.* (2000) described how PBL was integrated into the third year of their programme. The third year was based entirely in the clinical environments of three teaching hospitals. The motivation for extending PBL into the clinical environment was to "develop analytical skills that would be helpful in looking at real patient problems and to encourage our clinical teachers towards a student-centred approach to clinical teaching" (O'Neill *et al.*, 2000: 223). In this way the students would also be stimulated to set learning goals during the group process that would be met through real patient contact and clinical experience with the clinicians and professors. The PBL tutors in the wards were the consultants who worked at the teaching hospitals. The teaching hospitals also provided the necessary learning resources like articles, models, posters, seminars, workshops etc. Evaluation of this method of integrating PBL

into the clinical environment proved to be positive with the implementation of PBL being successful and the students reporting that they were satisfied with the course.

According to the literature it is vital for there to be a relationship between the clinician and the student, not only for the purposes of teaching and learning but also for the clinicians to get to know the students in order to get them to be safely included in the care of real patients and to become part of the community of practice of medicine (Ash, 2009; Svinicki, 2007). As will be discussed in Chapter 7, this study found the lack of engagement by many clinicians and consultants with the PBL curriculum to be highly problematic.

The next section deals with the South African health care system that provided a clinical environment. This is the environment in which the participants undertook their clinical education modules as undergraduate students, and later worked as interns and community service officers.

2.7. The South African health care context

The South African health care system remains troubled even after sixteen years of democracy. The South African government has not been able to regenerate itself and transform completely in terms of its social, political and economical circumstances. In 1994 the new government promised to provide health care to all its citizens as a basic human right. The present South African government under the leadership of President Jacob Zuma therefore has the daunting task of delivering on these promises and rectifying the massive health inequalities that were created by the apartheid government. According to Hammett (2007), the most important challenge facing South African health care is the continued shortage of skilled human resources in health services delivery. Urgent action is required by the South African government to remedy the present situation where the demands for proper salaries in terms of the occupational specific dispensation policy and the freezing of essential medical officer posts has led to low morale amongst health care workers and doctors. The aftermath of national strikes has

also crippled the financial state of the Department of Health. This section gives a brief description of the types of challenges that the South African health care environments face because this must have impacted on the participants' experiences of the phenomenon and their ability to construct a relationship with the clinical environments during their internship placement and community service experience.

South Africa's apartheid past has had a significant effect on the health care system, the health of the South African people, the policies around health and its delivery as well as present day health services (Chopra *et al.*, 2009). Interprovincial and urban-rural differences in access to health and related services still persist (Coovadia *et al.*, 2009). These problems exist despite the provision of policies that were put in place to reallocate budgets and other resources with the intention of focusing on the needs of the poor people of the rural, peri-urban and urban areas of South Africa.

One policy which was intended to improve the health care delivery across the country was the introduction of the compulsory community service placement for all South African newly qualified doctors. The intention was to place these doctors for a period of one year in understaffed rural hospitals and clinics throughout South Africa for a period of one year after they had qualified. This was also intended to prevent them from immediately seeking employment in the private health sector or from emigrating. For the purposes of describing some of the challenges that the South African health care system is facing, I would like to make reference to Coovadia *et al.*'s (2009) study and other related studies that look at some of the failures in health system governance in the post-apartheid South Africa with a view to understanding the context in which the participants of my study experienced their clinical education in the way that they did. Coovadia *et al.*'s study is discussed under the headings from that study: Human Resources Challenges; Poor Stewardship, Leadership and Management of the Health system.

- **Human resource challenges**

The Coovadia report attributes the staffing crisis in the public sector to a legacy of maldistribution of staff and the poor skills of many health personnel. The report indicates that

the staffing crisis is especially acute at the district level. It was mainly at the district level hospitals in KwaZulu Natal that the participants of this study performed their internship placements. The staffing situation at these hospitals was further aggravated by the new policy decisions such as voluntary severance packages that were offered to public sector staff in the mid 1990s. This strategy resulted in the movement of often highly skilled health professionals out of the public sector. It was also during the mid 1990s that a number of nursing colleges closed down, resulting in a drastic reduction in the number of graduating nurses. Hammett (2007:68) reported a “haemorrhaging of South African doctors from the public sector into the private sector.” It was reported that by the end of apartheid, almost 59% of doctors, 89% of pharmacists and 93% of dentists were employed in the private sector (Hammett, 2007). The disparity between the public health sector and the private health sector regarding staffing was further exacerbated by the increasing levels of external migration by South African health care workers. Hammett (2007: 68) found that, “between 1990 and 1997, 26 percent of the South African medical students graduating in these years emigrated.”

Daviaud and Chopra’s study (2007), that examined human resources requirements for primary health care facilities in six of the poorest districts across South Africa, found a drastic shortage of doctors to cover the opening times of the community health centres. They found that the “overall number of doctors was only 7% of the required number” (Daviaud and Chopra, 2007: 47). The Coovadia *et al.* (2009) report argues that there have been few concrete proposals and plans to address the human resources crises especially at community and primary levels, despite the development of a national human resources plan in 2006.

The South African government has tried other avenues to expand the medical skills base including the South African-Cuban agreement which “focused on the recruitment of Cuban doctors to work on short-term contracts in South Africa as well as the training of South African medical students in Cuba” (Hammett, 2007: 66). This initiative has resulted in over 450 Cuban doctors being placed in South African health care facilities and over 250 South African medical students being trained in Cuba (Hammett, 2007).

There have also been other policies such as an increase in medical schools admissions, the community service legislations for graduated doctors and other health care professionals and the soon to be introduced clinical associates. Monetary incentives like rural allowances as well as non-monetary incentives such as accommodation have also been put in place. Despite these policies and initiatives, there remains a scarcity of human resources in rural health care facilities, an issue raised by the participants in this study and referred to in Chapter 5.

It was during the study participants' community service experience that I conducted the interviews for the study and I was able to observe the conditions that the participants were exposed to during this period of clinical work. Most of the doctors' accommodation was surrounded by high fences with the presence of security personnel. This to me indicated a fear of criminal activity in the area. Some of the rooms and living areas were small and furnished with just a simple bed. The participants reported that there was often a disruption of electricity and water supply to the hospitals and the living quarters. The roads to some of the facilities were not tarred and had poor lighting and potholes. There were no recreational and/or other entertainment facilities in the area. These may be some of the reasons why health care professionals are reluctant to work in such facilities.

- **Poor stewardship, leadership and management of the health system**

The Ministry of Health is guided by policy. According to Coovadia *et al.* (2009: 831) during post apartheid times there has been no emphasis placed on the "implementation, monitoring and assessment of these policies throughout the health care system." Another key constraint at all levels of the health system was identified as 'inadequate stewardship, leadership and management.' The Coovadia report found that poor stewardship had resulted in a failure to ensure that some of the fundamental facets of primary health care were in place, such as community involvement. It was found that clinical committees and hospital boards had not yet been set up and if they were in existence then they were dysfunctional. The report also evidenced poor leadership which failed to effectively deliver intersectoral programmes, for example nutritional programmes. The issue of poor

stewardship and leadership that is present throughout South Africa may be attributed to the lack of personal accountability by the people who were given the leadership positions. Coovadia *et al.* (2009: 831) however questioned whether it is “fair to hold individuals accountable for the actions and values that have been shaped through apartheid oppressions.” They further questioned whether people who were not given the opportunity for teaching and training in terms of leadership and delivery should be held accountable. The report concludes that there has been a lack of progress in implementing the core health policies that were developed by the government, and they suggest that it is imperative to show good leadership and improved stewardship in order to meet the Millennium Development Goals. It is also imperative to ensure that sound health policies and social policies are both developed and implemented timeously (Coovadia *et al.*, 2009).

2.8. The international rural health care context

The trend of under-resourced and under-serviced rural communities also occurs internationally. Gould and Moon (2000) considered health care for the United Kingdom Island communities and noted that remote islands experienced a ‘penalty’ in service provision. They claim that some of the effects are:

- ❖ Having to provide a certain standard of service to meet satisfactory and professional requirements although population numbers may be low.
- ❖ The need to cater for fluctuating populations of temporary residents.
- ❖ High proportions of elderly patients.
- ❖ Cost of transporting goods.
- ❖ The need to pay incentives to recruit and retain health professionals.

(Gould and Moon, 2000: 210).

Despite the obvious differences of resourcing, these effects may be paralleled to the effects that the South African rural communities experience, only to a much larger extent due to the historical inequalities in South Africa prior to 1994. Due to the lack of employment in the rural areas, the economically active, adult males from the ‘Bantustans’

had to leave home and seek work in the cities. As a result the 'Bantustans' became vast, highly impoverished areas inhabited, for most of the year, by women and those who were very young, elderly, sick or disabled (Coovadia *et al.*, 2009). South Africa still faces massive health inequalities despite the constitution providing for the right to healthcare for all citizens. Historically, the health services in South Africa were fragmented both within the public health sector and also between the public and private sectors. Further, the health facilities were racially segregated. Substantial inequalities still exist in health care within and between provinces. The additional challenge within the South African rural health care context is that of the HIV/AIDS crisis that has contributed to and accelerated many of the challenges mentioned above. The ANC's Health Plan (1994) and the National Health Act of 2004 served as the post-apartheid model for health system change in South Africa.

Although the policies are in place, a key challenge for the government is to "reduce health inequalities and interprovincial and urban – rural differences in access to health and related services (Coovadia *et al.*, 2009: 832). Both nationally and internationally these challenges will be exacerbated due to the global financial crisis.

2.9. Conclusion

As this Chapter has shown, PBL is both a teaching and learning method that is based on a wide range of cognitive theories. Over the past fifty years, there has been a considerable body of research undertaken on PBL in many disciplines. Much of the research in the medical education arena on PBL has been quantitative in nature using evaluative outcome measures and compares PBL with more traditional teaching methods. PBL has spread its wings from its point of origin at the McMaster University, the Medical Schools in the Netherlands, to the UK, Australia and even South Africa. These drastic changes in teaching strategy were in response to the changing demands on future doctors. This Chapter also outlined how the PBL curriculum that was adopted from other countries was designed and implemented at the NRMSM, and reviewed the literature around its educational principles and methodological effects on students' learning. This Chapter

concluded with a contextualization of the study in terms of South African health care. Having provided a broad overview of the study context, this thesis now moves to a consideration of methodology design.

CHAPTER 3 DESIGNING THE DESCRIPTIONS

3.1. Introduction

A phenomenographic approach was used to trace and understand the experiences of learning the clinical aspects of a PBL medical curriculum of the first cohort of students at the NRMSM and how they constructed a relationship with the subsequent clinical environments of internship and community service. This chapter describes how

phenomenography was used as a qualitative research methodology in the sampling, data collection and analysis process to interpret the ‘qualitatively different ways in which the participants ‘experienced,’ ‘conceptualized,’ ‘perceived’ and ‘understood’ the phenomenon under investigation. The phenomenographic analysis was subsequently augmented through the use of critical discourse analysis (CDA) to illuminate and expose the phenomenographic categories of description that emerged from the outcome space of the phenomenographic analysis.

The Chapter starts with a description of the research paradigm in which phenomenography is located together with a rationale for a shift that was required for a deeper understanding of the phenomenographic findings. This is followed by a discussion of the phenomenographic approach with regards to its ontology, epistemology, theoretical and methodological underpinnings and a description of the data collection and analysis processes. The Chapter concludes with a description of the measures that were undertaken to ensure that the phenomenographic research process was credible. A reflective description of the phenomenographic methodology that was adopted for the study is provided. The use of CDA as an additional analytical framework will be described in detail in Chapter 6 of the thesis.

3.2. Research paradigm

The focus of medical research thus far has predominantly been on the development of the knowledge for the profession of medicine. Recently, however, a large number of medical and allied health professionals both nationally and internationally have shown a keen interest in the field of medical education. As a result there has been the emergence of medical education organizations/associations world-wide. The Association of Medical Education in Europe (AMEE), the South African Association for Health Education (SAAHE) and OTTAWA (conference organizing organization dealing with assessment strategies for health care professionals) are examples of such organizations with a strong focus on medical education. Despite the emergence of such organizations/societies, “the majority of medical research has been aimed at establishing a firm knowledge basis for

best practice, or in other words to contribute to evidence-based practice, in medicine” (Sjostrom, 2002: 120).

As indicated in the literature review (Chapter 2), most medical research including research on medical education was predominately quantitative and located within a research paradigm premised on the notion that there is a single truth about how medicine should be practiced and taught. There are a limited number of studies in the medical discipline that reflected the lived experiences of undergraduates and graduates of medical curricula. My study used both a phenomenographic and a CDA approach to ensure a fuller, more descriptive understanding of how the phenomenon under investigation was experienced by the participants.

Qualitative research may be seen as a ‘window’ through which we might see and comment on significant social issues. These issues may include theoretical questions about how social life is organized, how institutions operate and about the ways in which individuals and groups make sense of their lived experiences (Cohen, Manion and Morrison, 2004). Since PBL is based on the premise of authentic and holistic learning (Barrows, 1986; de Vries *et al.*, 1989; Coles, 1990; Blumberg *et al.*, 1990; Mitchell, 1992) there is an interesting parallel between phenomenography and the claims made by the literature on PBL. The use of a phenomenographic approach enabled me to understand the participants’ authentic experiences of learning in a PBL medical curriculum and the subsequent clinical environments. The naturalistic nature of the enquiry that was conducted in ‘authentic contexts’ and ‘natural settings’ allowed for the eliciting of holistic accounts of such experiences (Lincoln and Guba, 1989). The methodology adopted for this study was therefore in line with the philosophical underpinnings of PBL that emphasizes the lived experiences of students as impacting on their roles as life-long learners (Biggs, 1999; Savin-Baden, 2000).

At its inception the study was thus located within the interpretive research paradigm; one that is characterized by a concern for the individual and a desire to understand the

subjective world of human experience (Cohen, Manion and Morrison, 2004). Terreblanche, Durrheim and Painter (2006:120) claim:

The interpretive paradigm involves taking people's subjective experiences seriously as the essence of what is real for them (ontology), making sense of people's experiences by interacting with them and listening carefully to what they tell us (epistemology) and making use of qualitative research techniques to collect and analyze information (methodology).

Terreblanche, Durrheim and Painter (2006:120)

A phenomenographic approach was adopted with a view to understanding and analyzing the participants' experiences of the phenomenon within their own subjective understandings. The study was conducted in a real setting of the medical school and hospitals where they worked because I was interested in the subjective worlds of my research participants, their meanings, hopes and aspirations. Phenomenography as a methodology rests on a non-dualistic ontology that does not make any assumptions about the 'nature of reality' (Marton, 1986). The reality of the study up until the derivation of the phenomenographic outcome space was constructed by the participants' subjective experiences of the phenomenon. The study was then augmented with the use of CDA which posits that the social realm is socially constructed. As will be discussed in the next chapter, CDA is in no way oppositional to phenomenography but in fact it can be seen to share an ontological space. The justification for the use of these two analytical approaches that were applied sequentially, was to ensure a fuller description, interpretation, understanding and illumination of the participants' experiences of the phenomenon. The two analytical approaches and the reasons for the use of both are described in detail in this Chapter and in Chapter 6.

3.3. THE PHENOMENOGRAPHIC APPROACH

3.3.1. What is phenomenography?

Phenomenography is a qualitative research approach that is used to understand the world as one experiences it. In my study phenomenography provided a method of discovering what meanings underlie the way the participants experienced the phenomenon under investigation. According to Marton (1986:2)

Phenomenography is a research method adopted for mapping the qualitatively different ways in which people experience, conceptualize, perceive and understand various aspects of, and phenomena in the world around them.

Phenomenography is not only concerned with the phenomenon being investigated neither is it concerned with just the people who are experiencing the phenomenon, but it looks at the relation between the two and the ways in which people experience or think about phenomena. The research questions were formulated to be amenable to study within the framework of phenomenography. I was interested in the ‘ways of experiencing’ the phenomenon and the relationship that was constructed between the participants and the phenomenon. The aim of my study was not simply to capture the full richness of the experience of the participants, but it aimed at a very specific level of description, corresponding to a level of experience believed by me to be critical as far as the participants’ capabilities for experiencing the phenomenon (ways of learning the clinical aspects of a PBL medical curriculum) in qualitatively different ways were concerned.

This level of description had to do with what the different experiences of the phenomenon were seen as, what they appeared to be and what their potentially different meanings were. It was also concerned with how the experiences were ‘delimited from’ and related to their ‘context’ and how their parts were ‘delimited’ and ‘related’ to each other as well as the ‘whole’ (Marton, 1986).

The ontological assumptions of phenomenography are subjectivist. There is only one world and different people construe this world in different ways. These differences can be ‘described,’ ‘communicated,’ and ‘understood’ by others (Sjostrom, 2002; Bowden, 2005). It is the experiences of the phenomenon as described by others that forms the basis of the researcher’s descriptions. This makes phenomenography ‘second order’ rather than ‘first order’ (Trigwell, 2000). The ontological underpinnings are therefore non-dualistic

where reality is seen as being constructed as its relationship between the participant and the phenomenon (Marton and Booth, 1997).

Since the character of knowledge and the understanding of the similarities and differences in the meaning of this knowledge is phenomenography's research object, the ontological assumptions also become phenomenography's epistemological assumptions (Svensson, 1997). The emphasis in phenomenographic research is on description and the, "researcher may adopt an inter-subjective or interactional epistemological stance toward the reality and use methodologies such as interviewing that relies on a subjective relationship between the researcher and the subject" (Terreblanche, Durrheim and Painter, 2006:121). Phenomenography aims to explain the subjective reasons and meanings that lie behind such social action. In fact, the interpretive paradigm is often referred to as the phenomenographical paradigm because it aims to understand human phenomena in context, as they are lived, using context driven terms and categories.

Marton (1994) says that phenomenography addresses the question of what a phenomenon looks like as much as how it is seen. My study looked at the experiences as a relationship between the participants and the phenomenon. This relationship depicted the phenomenon as much as it depicted the participants. Furthermore, the assumption is that such a relation is best understood at an individual level, where different aspects of the same relationship can be found in different individual cases and where each relationship between person and phenomenon can be seen against the background of the other relationship between persons and the same phenomena (Marton, 1994).

In phenomenographic studies it has been found that "each phenomenon, concept or principle can be understood in a limited number of qualitatively different ways" (Marton, 1986:150). My study assumed that a limited number of conceptions of the phenomenon under study could be found. The conceptions are presented in categories of description that constitute the main outcome of the research. (Chapter 4, section 4.1).

According to Bowden and Walsh (2000) ‘categories’ are based on the most distinctive features that differentiate one conception from another and are presented in the form of a hierarchy, reflecting increasing levels of understanding. They go on to say that, “the focus on making explicit the relations between the conceptions is one of the characteristics of phenomenography that distinguishes it from other approaches, such as alternative conceptions research” (Bowden and Walsh, 2000:50). Sandberg (1994) describes the relation between individual conceptions and categories of description by suggesting that in the phenomenographic approach, the term ‘conception’ is used to refer to people’s ways of experiencing a specific aspect of reality.

Sandberg (1994:157) states that:

Conceptions are typically presented in the form of categories of description. The basic idea of the phenomenographic approach, is to identify and describe individual’s conceptions of some sort of reality as faithfully as possible...the more faithful we as researchers can be to individual’s conceptions of an aspect of reality, the better we are able to understand learning, teaching and the other kinds of human action within society.

3.3.2. Variation in phenomenography

Phenomenography focuses on variation. The object of research is variation in ways of experiencing a phenomenon. Pang (2003:146) claims that, “there are two faces of variation.” The first face refers to the study of variation between different ways of experiencing the same phenomena, in which categories of description and outcome space are derived to describe how people experience the reality. The variation that corresponds to the critical aspects of the phenomenon, i.e. the dimensions of variation as experienced by the experiencers, is the second face of variation (Pang, 2003).

The first critical question is concerned with the ‘first face of variation’ that addresses the ‘what’ question:

1. What were the first cohorts' experiences of learning the clinical aspects of a PBL medical curriculum?

The study here was basically descriptive and methodologically oriented and concerned with the qualitatively different ways in which participants experienced the phenomenon under investigation. As the researcher, I was able to sense and understand the variation as indicated by the data in this instance.

In terms of the 'second face of variation,' the emphasis of phenomenography here shifts from methodological to theoretical concerns. The research therefore addresses the questions, "What is a way of experiencing a phenomenon and how do different ways of something evolve?" (Pang, 2003: 148). Here, the researcher has to describe the variation as experienced in certain aspects of a phenomenon. The second critical research question of my study was concerned with the 'nature of the different ways of experiencing.' The second question is:

2. How was the relationship between the experiences of learning the clinical aspects of a PBL medical curriculum and the experiences of the subsequent clinical environments constructed?

From the above, it is evident that phenomenography may be used as a methodological approach as well as a theoretical framework. Theoretically it may be used to explore and describe the cognitive relationship which individuals have with the world that they live in (Booth, 1992). It also concerns itself with the variation of the ways in which people experience something. However, the assumption is that the qualitatively different ways of experiencing a phenomenon may be limited. I therefore would like to foreground that a rigorous critique of phenomenography is provided in Chapter 6 and a rationale is given for moving beyond the descriptions of the phenomenographic categories to incorporate a critical in depth analysis of the phenomenographic findings using CDA. Chapter 6 will show how the methodological boundaries of phenomenographic analysis was pushed to its limit and how an additional analytical lens was required in unpacking the participants' experiences of the phenomenon.

My study focused on the range of clinical experiences from the PBL medical curriculum to the actual clinical setting of the hospitals within the South African health system. The participants were therefore asked to reflect on all the different contexts that the ways of experiencing the learning took place in namely, their experiences in the Skills laboratory (year 1,2 and 3), the hospital wards (years 3, 4 and 5), internship (year 6 and 7) and finally community service (year 8). In this way I expected the participants to express the different ways of experiencing the phenomenon across all the different clinical contexts. It was my intention to yield data that reflected and described a variation of the ‘ways of experiencing.’

3.3.3. Producing data through phenomenography

3.3.3.1. Introduction

One of the major characteristics of phenomenography is the explorative character of the data collection. This explorative character may be related to the relational characteristics of conceptions in phenomenography with its uncertain relationships (Marton, 1986). It is therefore up to the researcher to choose the most appropriate means of obtaining the participants account of their experiences ensuring that they allowed maximum freedom in their description of it (Lucas, 2000). The literature on research methodologies claim that there are many possible sources of information, that can reveal a person’s ‘understanding’ or ‘conception’ of a particular phenomenon. Phenomenography, however, generally adopts a method of discovery through an open, deep interview (Booth, 1992).

3.3.3.2. Selecting the sample

Marton and Booth (1997) state that data collection methods in phenomenographic research generally consist of closed interviews with small, purposive samples. Bowden and Walsh (2000) recommend that the sample should comprise fifteen to twenty

participants. They justify this number by arguing that the aim of the exercise is to constitute, from the transcripts of the interviews, a range of categories of description of the experiences of the group of participants. Ten to fifteen participants would be the minimum number to create a reasonable chance of finding variation in the range, whereas the limiting factor of having more than twenty participants is the volume of data that is produced. Bowden and Walsh (2000) advise that during phenomenographic analysis, the interview transcripts should be treated as a whole and should not focus on the individual variation. Therefore it may be difficult, as a researcher, to handle having more than twenty transcripts at a time, considering that each interview lasted approximately two hours in duration. Trigwell (2000) however argues that since the focus in phenomenographic research is on the variation in the participants' experiences, the study should include a wide range of individual experiences. The sample should be selected in order to maximize the possible variation in the experiences of the phenomenon. After considering all of these issues, I decided on a sample of fifteen participants.

My main concern in deciding on the sample was that of 'representativeness.' I wanted to select a sample that would be representative of the population about whom I aimed to draw some conclusions. The sampling therefore was purposive which meant that the sampling was not only dependent on the availability and willingness to participate in the study, but also considered cases that were typical of the population selected (Terreblanche, Durrheim and Painter, 2006).

The study focused on tracing the experiences of the first cohort of the PBL medical curriculum. My sample for the study therefore had to be selected from the graduates of the class of 2001. Approximately one hundred and eighty students graduated from the class in 2005. I had to make my choice from the many potential participants. Another consideration pertaining to my study was the fact that I wanted to conduct the interviews at the end of the participants' community service placement so that they would be able to reflect on their experiences across all three contexts (student experience, internship experience and community service experience). In this way I hoped to build a detailed picture of their experiences based on their accounts from the in-depth interviews. The

first cohort of the PBL students graduated in 2005, completed their internship experience during 2006 and 2007 and in 2008 they were placed in rural hospitals/clinics throughout South Africa to serve their community service experience. Towards the latter half of 2008, I was granted ethical clearance for my study and I was fortunate to be able to conduct the interviews with the participants as they were completing their community service placement that same year.

My choice of participants was guided by the fact that these participants were willing to provide rich information about their experiences as well as diversity in terms of gender and race. The rationale behind these concerns was my desire to understand the variation in the experiences of the participants' across the diverse life contexts in KZN, South Africa. The final selection of my sample, however, was also influenced by practical matters of convenience like who was available and willing to participate.

Following receipt of ethical clearance for the study (Annexure K), I obtained e-mail addresses of the 2005 graduates from the Student Administration Division of the NRMSM. An e-mail invitation was subsequently sent to all possible participants. There was an overwhelming response to the invitation (85 graduates). I had to therefore adopt a selection process that would enable me to streamline the number of participants to a manageable number.

The selection of students into the programme at NRMSM is guided by the University of KwaZulu-Natal's Mission statement and its general admissions policy. The institution aims to redress past inequalities in the production of doctors and therefore sets targets for different population groups as a measure that is designed to achieve the objective of the University's policy (NRMSM Faculty Handbook, 2001). The admission's ratio of Black, Indian, White and Coloured (Department of Labour terminology) students is approximately (rounded off): 70% Black; 19% Indian; 5% White and 5% Coloured. The study's sample echoed these norms and the racial composition of the selected participants was: 10 Blacks, 3 Indians, 1 White and 1 Coloured.

Since medicine was predominantly a male dominated profession in the past, with the implementation of the new democratic government in 1994, the University adopted the policy of a greater intake of female students. For the class of 2001, the approximate ratio of female: male was 60% female: 40% male. As a reflection of this ratio, my sample comprised of 9 female participants and 6 male participants. Although the total number of participants that were selected was fifteen, I did remain open to including more participants if the data did not prove rich enough.

Another important consideration in my selection of the sample was the geographic location of the participants. For practical convenience, I had to select those willing participants who were doing their community service placement in rural hospitals only within the province of KwaZulu-Natal (KZN), South Africa. The reason for localizing the geographic location to KZN was because I live in KZN and I had to also consider time and budgetary constraints. My sample was selected from hospitals/clinics across all the health districts as listed below

TABLE 2- BIOGRAPHICAL PROFILE OF PARTICIPANTS AND GEOGRAPHICAL LOCATIONS OF THEIR COMMUNITY SERVICE PLACEMENT

N O	NAME (PSEUDONYM)	RACE	GENDER	KWAZULU-NATAL HEALTH DISTRICT	LOCATION IN KZN	TRAVEL TIME BY ROAD
1.	Princess	Black	Female	AMAJUBA	North west part of KZN	4 hours
2.	Precious	Black	Female	UGU	Lower South Coast of KZN	2 hours
3.	Cindy	Black	Female	UTHUNGULU	North Coast of KZN	5 hours
4.	Patricia	Black	Female	ZULULAND	Northern District of KZN	6 hours

5.	Sarah	Black	Female	UMKHANYAKUDE	Northern Most District of KZN	6 hours
6.	Joseph	Black	Male	SISONKE	Southern Most Part of KZN	5 hours
7.	Keti	Black	Female	AMAJUBA	North West District of KZN	4 hours
8.	Kenneth	Black	Male	UMGUNGUNDLOV U	Midlands Region of KZN	3 hours
9.	Tom	Black	Male	UTHUKELA	Northern District of KZN	3 hours
10.	Mac	Black	Male	UMZINYATHI	Central District of KZN	3 hours
11.	Niki	Indian	Female	SISONKE	Southern Most District of KZN	5 hours
12.	Gary	Indian	Male	UMKHANYAKUDE	Northern Most District of KZN	6 hours
13.	Shaun	Indian	Male	ZULULAND	Northern District of KZN	6 hours
14.	Mary	Colored	Female	UGU	Lower South Coast of KZN	2 hours
15.	Jane	White	Female	UTHUNGULU	North Coast of KZN	5 hours

3.3.3.3. Initial contact with participants

I found it easy to establish contact with the participants. I either e-mailed them or telephoned them and thanked them for their prompt responses to my invitation and proceeded to explain the format of the interviews. I ensured that they were fully informed of the purpose and processes of my research. I explained that it would be a prolonged

process with the interviews lasting up to two hours at a time and that there may also be a need for follow-up interviews and a session to review the transcripts. They were given ample time to think about their involvement in the study before I confirmed the appointments with them. I explained the purpose of the informed consent documents that they were required to sign prior to the interview (Annexure L). The informed consent document was subsequently e-mailed to each of the participants.

I chose to interview the participants in December 2008 whilst they were still serving their community service at the rural hospitals where they were working in KwaZulu-Natal. The days, times and venues for the initial interviews were negotiated and varied for each of the participants. Organizing the interviews with the participants proved difficult because their working schedules as community service officers included twenty-four hour calls and shifts from 08H00 to 17H00 each day. This meant that I needed to be open to last minute changes in the actual time for the interviews and needed to accommodate their calls/intake times. Another factor was travel and accommodation arrangements for me. Some of the rural hospitals were more than six hours drive by car. The locations of the hospitals were very rural and required driving on dirt roads for two to three hours. The logistical arrangements had to be made early and concisely.

3.3.3.4. The phenomenographic interview

The phenomenographic interview is a specialized form of the qualitative research interview. They usually begin with participants being asked to respond to questions about a specific case or situation. According to Bowden and Walsh (2000), there are generally two common types of questions, one type of question pertaining to the field under study whilst the second type is of the ‘what is X kind?’ The first category requires open-ended questions to allow the participants to decide on the aspects of the questions that are most relevant to them. The open-ended questions allow the researcher to get a feel for the different ways of understanding the phenomenon within that context. In the second category, the questions don’t mention the ‘X’ at all. The questions don’t necessarily have to explicitly address the problem presentation. Bowden and Walsh (2000) suggest that

there is more likelihood of establishing a joint definition of what is being talked about between the researcher and the participant when the questions refer to shared ‘topics of discourse.’ Interviewing in phenomenography seeks to explore greater depths of thinking and experiencing. The aim of the interview is to elicit the variation in people’s experiences or understanding of the phenomenon in question.

This should tie in with the aim of the research study. Reflecting on the purpose of my study that traced the participants’ experiences of learning the clinical aspects of a PBL medical curriculum and the subsequent clinical environments, I reflected on Marton’s (1986) definition of phenomenography:

“Phenomenography is a research method adapted for mapping the qualitatively different ways in which people experience, conceptualize, perceive and understand various aspects of and phenomena in, the world around them.”

(Marton, 1986: 31)

The phenomenographic interview focuses on the relations between the participants and the theme of the interview. The focus is on how the theme appears to, or is experienced by, the participant. It also focuses on the differences in these relations both as experienced by a single individual and between individuals.

According to Bruce (1994), the design of the interview is influenced by the search for qualitative variation in conceptions. The questions therefore should not only be open but should succeed in eliciting variation. The interview is usually unstructured, or semi-structured. All questions should lead the participants to discuss how they see, experience or understand the phenomenon. The participant should be able to structure his/her own response. Phenomenographers claim that the ‘what questions’ are most useful (Marton, 1986; Sandberg, 1994; Saljo, 1997; Ashworth 2001; Bowden and Walsh, 2000; Trigwell, 2000; Akerlind, 2005). Marton (1986) gives clear indication of the kinds of conversation that take place in phenomenographic interviews. Open-ended questions should be used in order to let the participant choose the dimension of the question he/she wants to answer. The interview schedule that was designed for the study comprised a few entry questions,

allowing for the subsequent dialogue to proceed according to the responses that were obtained from the participants. The aim was to encourage the participants to reveal through discussion, their ways of understanding the phenomenon under investigation and to disclose their relationship to the phenomena under consideration. Bruce (1994) gives some guidelines to achieve such responses:

- Encourage reflection on experience.
- Ask for information about how the phenomenon appeared to the participants.
- Probe for analogies, e.g., “you said it was like...”
- Confront and pursue areas of confusion, for example; ask participants to reconcile contradictory statements or raise issues of controversy pertinent to the phenomenon.
- Ask for elaboration through questions such as; “Please explain?”
“Tell me more about...?” “Can you explain in a different way?”
“Give me an example?” “Describe that a little more please?”

(Bruce, 1994: 219).

Since the intention of phenomenography is to describe and understand the variation in the ways a phenomenon is perceived, each of the interviews that I conducted with the participants aimed at allowing each of them to describe the extent of their experiences of the phenomenon, first as undergraduate students and subsequently as interns and community service officers. With the aim of the study in mind, it was important for me to arrive at a series of questions that would enable the conceptions of the phenomenon to be appropriately identified. The interview questions were thus devised to assist the participants to think broadly about their own experiences and were followed by other questions that responded to each of their unique answers. Some of the broad open-ended questions that the interview schedule comprised of were:

- Can you tell me about your experiences of learning the clinical aspects of the curriculum as the first cohort of undergraduate medical students?
- What were your experiences of learning clinical skills within a simulated clinical environment (Year 1 to Year 3)?

- What were your experiences of learning the clinical education component of the curriculum in the real clinical setting (Year 3 to Year 5)?
- Please describe your two year internship experience (Year 6 and Year 7)?
- Please describe your one year community service experience (Year 8)?

On my arrival at the hospitals (rural hospitals), the participants would look for a quiet venue in which we could conduct the interview. On some occasions, it would be the doctor's room or sometimes the interview would take place in the doctor's quarters. Given the context of these rural hospital environments, it was not always possible to make such arrangements prior to the interviews. The use of a quiet, private and comfortable venue for the interviews was imperative for the purposes of the audio-recording and to facilitate the sharing of personal experiences. It was my role as the interviewer to ensure that the participants would be as comfortable as possible during the interviews in order for them to adequately reflect on and describe their experiences over the eight year period.

As soon as the venue was determined, and both the participant and I were comfortable, I explained the signing of the informed consent document and sought permission to audio-tape the interviews. I reminded each of the participants that they were assured of anonymity and confidentiality. In accordance with the literature on phenomenographic interviews (Marton, 1986; Bruce 1994), I began the interviews with the open-ended questions as I have described earlier in this section. I was able to get the participants to reflect on what they had expressed, to explain their understanding of their experiences more fully and to reveal their conceptions of the phenomenon across all three clinical contexts. During the interviews, I tried to concentrate on identifying the significantly different ways in which the participants expressed their experiences of the phenomenon. I had to therefore stay alert to variation both within a single interview and between interviews. Bruce (1994) suggests that where such variation is picked up by the interviewer, an attempt should be made to further probe the descriptions from the participants that revolve around those differences. The duration of the interview was usually around two hours. However, sometimes I continued until I felt that the

experiences as expressed by the participants had been adequately described and the meanings of the words and conceptions had been revealed by each of them.

3.3.3.5. Phenomenographic data analysis

Marton and Booth (1997) state that:

Phenomenographic analysis results in a coherent framework for understanding what is presented, providing both an approach to analyzing data and a theory for analyzing the structure of the variation in experiences of the phenomenon being researched.

Marton and Booth (1997: 210)

The important difference between traditional content analysis and phenomenographic data analysis is usually that, with the former, the categories into which the utterances are sorted may be determined in advance, whereas with the phenomenographic analysis, the process is 'tedious,' 'time-consuming,' 'labour intensive' and 'interactive' (Marton, 1986). The data has to be continually sorted and resorted with the definitions of categories being tested against the data, adjusted, retested and adjusted again. The process is continued until eventually there will be a decreasing rate of change and the whole system of meanings becomes stabilized (Marton, 1986).

A descriptive framework is developed based on the two elements of meaning and structure in phenomenographic analysis (Bruce *et al.*, 2004). Conceptions are the basic unit of description. A conception has two dialectically intertwined aspects; the 'referential' aspect and the 'structural' aspect. Marton and Booth (1997) explain this statement by clarifying that the act of experiencing involves both a structural and a referential dimension. This refers to the 'how' and 'what' of the conceptions. The 'structural' is the action (how) and the 'referential' is the something being acted upon (what). Each category of description represents one 'conception' or 'way of experiencing' or being 'aware' of the phenomenon. The referential component of each category is the awareness structure. The awareness structure is usually delimited in terms

of the 'external' and 'internal' horizons. Bruce, (2004: 196) state that, "The internal horizon represents the focus of the participants' attention and the external horizon represents that which recedes to the ground, the perceptual boundary associated with the participants' way of seeing." The use of the components helps describe the qualitative differences between conceptions and also the relations between the conceptions.

Marton and Booth (1997) developed a model for analyzing and describing the experience of learning. The model consists of a 'what-aspect' and a 'how-aspect.' In their model, the 'what-aspect' referred to the context of what was being learned and the 'how-aspect' referred to the learners approach to the task of learning.

EXPERIENCE OF LEARNING

WHAT-ASPECT(REFERENTIAL)

HOW-ASPECT (STRUCTURAL)

DIAGRAM 2: The Model of the Experience of Learning (Marton and Booth, 1997: 85).

I have adapted this model to suit the focus of my study. Instead of looking at the ‘experience of learning,’ I looked at the experiences of learning the clinical aspects of the medical curriculum and the subsequent clinical environments. The ‘what-aspect’ in my model refers to the ways of experiencing the phenomenon across the different contexts. The ‘how-aspect’ refers to the relationship that was constructed between the experiences of the curriculum and the experiences of the subsequent clinical environments.

**EXPERIENCES OF
LEARNING CLINICAL
ASPECTS OF A PBL
MEDICAL CURRICULUM**

WHAT-ASPECT(REFERENTIAL)

The ways of experiencing the learning of clinical aspects.

HOW-ASPECT(STRUCTURAL)

Construction of the relationship between learning of clinical aspects and the subsequent clinical environments.

DIAGRAM 3: The Model of Experiences of Learning the Clinical Aspects of the PBL Curriculum and the Construction of a Relationship with the Subsequent Clinical Environment.

The main aim of phenomenographic analysis focuses on the meaning found within the transcripts. This meaning is used to construct categories that capture the main qualitative

difference between ways of experiencing the phenomenon (Reid *et al.*, 2006). Akerlind (2005) support this statement by declaring that phenomenographic analysis in this sense is 'interpretive' and 'emergent.' The relationship between the participants and the phenomenon as revealed in the transcripts becomes the unit of analysis in phenomenography. In my study the analysis of the data involved the process of interpreting the experiences of learning the clinical aspects of a PBL medical curriculum and the construction of the relationship between the participants and the phenomenon as reflected in the transcripts of the interviews.

All the interviews were audio-taped and later transcribed verbatim. Bowden and Walsh (2000) suggest that the transcripts serve as the only means of evidence that reflects the participants' understanding of the phenomenon. They further stipulate that the single most important phase in the analysis of transcripts and the constitution of the categories of description is for the researcher to bracket prior knowledge and to produce a coherent set of categories rather than a 'shopping basket' of categories based upon content analysis (Bowden and Walsh, 2000).

In my preparation for the data analysis process I had to bracket my own perceptions and read the data for the ways in which the participants understood the phenomenon. This was difficult to achieve due to my intimate involvement with the curriculum development and implementation of the clinical aspects of the PBL curriculum. These difficulties have been described in Chapter 1 of the thesis where I have detailed my role as the Head of the Skills Laboratory. However, by immersing myself in the literature on the bracketing process, I believe that I did achieve a measure of success in this regard.

3.3.3.5.1. The analysis process

- **The whole set of transcripts**

The transcripts had to be studied as a whole set because in phenomenographic analysis, the parts and the whole define each other dialectically (Trigwell, 2000). Categories of description were constructed by grouping parts of the transcripts together according to

their similarities and differences. Sometimes the focus also was on the parts, but in order to see whether those parts were in fact parts of the same category, the focus had to be on all the transcripts. The categories of description of the conceptions were internally related. Each conception was part of the whole set of conceptions. It was not possible to see a category unless it was seen in the context of the whole

- **Multiple readings**

Bowden (2000) argues that multiple readings of the transcripts are necessary in order to explore all the possible perspectives. I read the set of fifteen transcripts at least seven times. During the readings, I attempted to familiarize myself with the key elements of the phenomenon as seen and reported by the participants. I consistently asked myself, “What does this tell me about the way the participants understood the phenomenon?” Participants may say similar things but often their underlying meanings may be different (Bowden, 2000). Similar ideas may also be expressed quite differently. I found that the similarities and differences could only be discovered by holding all the ideas in my mind at the same time. My intention was to draw a mental picture that explained the underlying meaning of virtually the whole set of transcripts.

- **Compilation of conceptions**

While reading the transcripts, notes were made reflecting the main ideas contained within the transcript set. I wrote comments/ quotations on the important issues that each participant had brought up in the interviews. According to Marton (1986) the phenomenon is narrowed down and interpreted in terms of selected quotes from all the interviews. The quotes I selected thus made up the data pool. My data pool consisted of two pages of quotations from each transcript. I read and re-read each of them, in an attempt to make sense of the range of comments. I looked for variation between the transcripts and re-ordered the sheets to put those who seemed to be saying similar things together. The most significant elements given by each participant was identified in this process.

- **Formulation of categories of description**

Utterances/quotations are brought together into categories of description on the basis of their similarities whereas the categories are differentiated from one another in terms of their differences. After I had arranged and rearranged the groups of quotes, they were removed into a draft set of categories of description. The categories of description were formulated based on the most distinctive features that differentiated one conception from another. The categories presented in the form of a hierarchy, reflecting an increasing level of understanding of the phenomenon. Qualitatively different categories of description were then constructed. These were used to classify the conceptions of the phenomenon that were held by the participants. For example, I selected the sentences from the transcripts that were reflective of the participants' perceptions of what was most important to describe their experiences of being a student in the PBL medical curriculum. I will now give the details of how I arrived at one of the categories of description.

They called us guinea pigs. It was not our fault that we were in a new curriculum and you really don't expect to be treated in that way, but we looked above that. We were here to learn and we had point to prove. We wanted to learn and become good doctors.

(Niki: 11)

I underlined some key words such as 'guinea pigs,' 'had a point to prove' and 'wanted to learn' and 'become good doctors' that characterized the participant's main ideas about being the first cohort of the new curriculum.

Another participant had the following response:

We kept telling ourselves, we know that we're these guinea pigs and we're trying to actually become good doctors and you know it gelled us a lot and we had to become a unit to fight for what we thought was our right.

(Precious: 9)

I marked some key words to illustrate the participants' conceptions of the phenomenon such as 'guinea pigs,' 'trying to become good doctors' and 'fight for what we thought was our right.'

By comparing the similarities and differences between the participants, some categories for the conceptions of the phenomenon emerged. With the initial draft set of categories in mind, I reread the transcripts with a view to determine if the categories were sufficiently descriptive and indicative of the data. The result of this exercise was the modification, addition and deletion of some of the categories of description. Each time that the categories were modified, I had to justify to myself why and how I came up with them and had to refer to the transcripts to explain the conclusions. The new categories of description had to be constantly checked to see if the new formulations were still consistent with the interview data (cross-checked with transcripts).

- **Formulation of the outcome space**

The outcome space in phenomenographic research refers to the set of related categories of description of the phenomenon being studied. It reflects how the categories are internally related and may be shown graphically or in a tabulated form. The outcome space describes the variation within the entire group of participants rather than reflecting just the rich descriptions of individuals. Its aim is to focus on aspects of the variation in the experiences of the phenomenon (Trigwell, 2000). The outcome space in my study depicted the way in which the individual way of seeing the phenomenon was related to form a whole picture of the different ways of seeing amongst the participants. This reflected an interpretation of the phenomenon. While generalising this to the whole cohort may be problematic and should be only tentatively undertaken, this study does attempt to portray the collective experience of the phenomenon as experienced by the participants of the study who were part of the first cohort of the PBL medical curriculum at the NRMSM. Though the outcome space is an interpretation, it was based firmly on the data that was produced through the interviews with the participants. The outcome space will be represented in Chapter 4, and will reveal the widening awareness associated with the different categories.

3.4. Credibility of the phenomenographic analysis

In quantitative approaches, issues of validity and reliability are related to the procedure of sampling, subjects and the design of the instrument for data collection whereas with qualitative studies, suggested criteria for judgment should be based on the detailed elements of the actual strategies used for collecting, coding, analyzing and presenting the data. The core question of credibility in my study was about the relationship between the empirical data and the categories that I used to describe the ways the participants experienced the phenomenon. In the analysis process I have shown that my chosen way of describing the differences and similarities is well supported by the empirical material. I have achieved this by providing excerpts from the interviews that support the relevance of the categories. In this way the reader is also able to consider the appropriateness of the categories. In an attempt to ensure the credibility of my study, I have given a precise description of each part of the research process, the perspectives applied to the phenomenon, an explicit presentation of the interview questions and procedures as well as a careful description of the analysis and conclusions. This has been done to ensure transparency in the analysis of the data.

In Chapter 1 of the thesis, I explained that I am a known and interested party in the research. My position at the NRMSM as the Head of the PPS Skills Resource Facility has enabled me to be directly involved in the curriculum development and implementation of clinical skills teaching to all the undergraduate students. I have therefore established a relationship with all the participants in the study. The participants were aware of my background and my intimate involvement in the teaching, learning and assessment of clinical skills in the PBL medical curriculum. I have, however, attempted to remain unbiased and tried to prevent my personal beliefs and knowledge from intruding during the interviews and data analysis process. I tried not to allow my own assumptions and feelings to direct the interviews but, instead, allowed for the participants' experiences to lead the way. By writing about my role and perspectives in a detailed manner in the

context and research methodology chapters of the thesis, I attempted to both disclose my positionality and take a reflective perspective on it.

3.5. My reflections of the phenomenographic process

Ference Marton (1986) outlined three lines of phenomenographic research:

1. Content-related studies of more general aspects of learning such as the relation between the learning processes and the learning outcomes.
2. Study of learning within particular content domains for example, mapping students' understanding of concepts and principles in physics.
3. 'Pure' phenomenographic 'knowledge interest' which is focused on the description of how people conceive of their various aspects of reality.

My study is best located within the third line of research because it looked at the participants' description of their experiences of learning the clinical aspects of a PBL medical curriculum and the subsequent clinical environments. The categories of description that I formulated during the analysis process were a reflection of how they conceived of the various aspects of their reality (see Chapter 4 and 5).

One can also argue that the focus of my data collection and analysis was on the relationship between the learning process and the outcomes, i.e. how they experienced the learning of clinical skills in a simulated environment (Skills Lab) and the hospital wards (real setting) during their undergraduate training, and the outcome which was the application/ transference of these clinical skills in the real work environment (internship and community service). This suggests that my study may also fits in with Marton's first line of research that relates to whether or not the phenomenon or aspect of reality being described has been the object of formal studies by those whose understandings are being explored. These issues will be dealt with further in the analysis chapter (Chapter 4) of the thesis.

“The descriptions arising from the phenomenographic research are relational, experiential, content-oriented and qualitative” (Marton, 1988:181). The relational nature of phenomenographic descriptions focuses on the ‘relations’ between what is experienced or perceived and who is doing the experiencing or perceiving. According to Marton (1986: 145), “We try to describe an aspect of the world as it appears to the individual.” In describing how the phenomenon in my study appeared to the participants, it was necessary to adopt their individual perspectives.

The experiential nature of phenomenographic descriptions seek to uncover the individuals’ own views of an aspect of the world or how they function within the world. It is based on the experiences of the individuals. The experiential usually follows from the relational. It begins by listening to the participants and looking at the phenomenon from their points of view. The content-oriented descriptions follow the relational nature and seek to describe how individuals see an aspect of the world and describe it in terms of its content. In order for the descriptions to be rich and meaningful, it has to be content oriented. The participants in my study commented on the phenomenon as experienced through all the clinical contexts.

3.6. Concluding remarks on phenomenography

The phenomenographic approach used in my study aimed to describe the qualitatively different understandings of the participants and the descriptions arising from such research were qualitative in nature. The results did not aim to consist of a number of strategies that could be applied or a number of correct outcomes. The intention was to illuminate the nature of the relationship being explored (Marton, 1986).

In choosing phenomenography, I adopted a qualitative and interpretive methodology that focused on making sense of what the participants had said in their interviews, and I tried to be careful, thoughtful and open-minded in my analysis and interpretations. Given the nature of the research study, it was less important that my findings were seen as valid and

reliable, than they were generative of new insights into the relationship between the experiences of learning the clinical aspects of a PBL medical curriculum and the subsequent clinical environments within the South African health care context.

It is at this point that I would like to declare the difficulties that I experienced after the phenomenographic analysis was completed. Chapter 6 will detail the methodological issues that I experienced in terms of remaining true and faithful to the ontological and epistemological assumptions of the research methodology that I had chosen at the inception of my study. As a doctoral student, I began to question my personal epistemology and relationship with the data findings. This will be expanded on in Chapter 6 together with a description of the use of critical discourse analysis that was required to enhance the phenomenographic analysis. The next two Chapters describe and interpret the phenomenographic analysis of the participants' experiences of the phenomenon and how they constructed a relationship with the subsequent clinical environments

CHAPTER 4- WAYS OF EXPERIENCING

4.1. Introduction

This chapter details the phenomenographic analysis of the ways in which the participants of the study experienced the learning of the clinical aspects of the PBL medical curriculum. The ways of experiencing the phenomenon and the construction of a relationship with the subsequent clinical environments (Chapter 5) are represented in an outcome space that reflected the most important results of the phenomenographic research (Marton, 1986). The outcome space is made up of categories of description of the phenomenon that were logically related to one another by a hierarchically inclusive relationship (Akerlind, 2005).

The Chapter begins with a representation of the outcome space, followed by a description of each of the emergent categories. The categories of description are further broken down into the qualitatively different conceptions of the phenomenon as reflected in the transcripts of the interviews. The Chapter concludes with a discussion that related all the categories to show the variation in the participants' experiences as students in the PBL curriculum. In describing and interpreting the experiences of the phenomenon the first critical question of the study is addressed.

DIAGRAM 4: The outcome space of the ways of experiencing the phenomenon and the construction of a relationship with the subsequent clinical environments

	CATEGORY	WAYS OF EXPERIENCING
WHAT ASPECT (REFERENTIAL)	❖ GUINEA PIG IDENTITY	<ul style="list-style-type: none"> ❖ Conceptions of being in the experimental first cohort. ❖ Conceptions of labelling by medical ward staff. ❖ Conceptions of being compared with traditional curriculum students. ❖ Conceptions of racism and marginalization.
	❖ KNOWLEDGE CONSTRUCTION	<ul style="list-style-type: none"> ❖ Conceptions of learning in a Skills Lab. ❖ Conceptions of transference of skills from a simulated to a real

		<p>clinical context.</p> <ul style="list-style-type: none"> ❖ Conceptions of clinical competence. ❖ Conceptions of clinical assessments. ❖ Conceptions of theoretical inadequacy.
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	CATEGORY	RELATIONSHIP WITH SUBSEQUENT CLINICAL ENVIRONMENT
HOW ASPECT (STRUCTURAL)	<ul style="list-style-type: none"> ❖ PROFESSIONAL IDENTITY 	<ul style="list-style-type: none"> ❖ Conceptions of transition from student to graduate. ❖ Conceptions of competence as interns. ❖ Conceptions of relationships with the health care team during internship. ❖ Conceptions of relationship with rural practice.

4.2. The ‘what-aspect’ (referential) - the ways of experiencing

The analysis and interpretations in this section of the outcome space have been made with the intention to understand the meaning of the experiences as expressed by the participants and interpreted by myself (the researcher). It has been widely stated in the literature that the unit of research in phenomenography is ‘a way of experiencing something’ (Marton, 1981; Svenson, 1997; Bowden, 2000; Akerlind, 2005; Hitchcock, 2008). Brew (2001) claims that when individuals experience something, the phenomenon that is being experienced is differentiated from its context and individuals tend to foreground some things whilst the other things are left in the background. It is usual to foreground the things that are most significant to the experience. In the context of my study, the word ‘experience’ encompassed the participants’ intentions, approaches and reflections of the phenomenon. It also included the notion that experiences denoted an internal relationship between the subject (the participant) and the world (the phenomenon) (Runesson, 2005). In this section the participants’ ways of experiencing the phenomenon as students are categorized and described. These categories of description are expanded using quotations from the transcripts and subsequently linked to the relevant supporting literature. Each participant is given identification (a pseudonym as indicated in Chapter 3, section 3.3.3.2. Table 2) and a number that reflects the transcript from which the data quote was extracted.

4.2.1. The guinea pig identity

The term ‘guinea pig’ is commonly used as a metaphor for a subject of scientific experimentation. Biological experimentation on guinea pigs has been carried out since the seventeenth century and presently they are still being used in research as model organisms for human medical conditions. The guinea pigs have thus become known as ‘test subjects.’ This negative connotation of the term was extended to consumer society by the American authors F.J. Schlink and A. Kallet who wrote the book entitled 100,000,000 Guinea Pigs. In the context of my study, the category ‘Guinea Pig Identity’ emerged as a result of the conceptions that described how the participants felt at the mercy of a curriculum experiment. This category was loaded with hegemonic behaviour,

discrimination and marginalization that were voiced by the participants who claimed that they were victims of an experiment that the consultants in the hospital wards had negative views about. I will now describe each of the conceptions that made up this category with evidence from the data quotes in the transcripts.

4.2.1.1. Conceptions of being in the experimental first cohort

In 2001, upon registering for the MBCHB degree at the NRMSM, the participants had no choice but to accept that they would be the first cohort of students to undertake the PBL format of the degree. The PBL pedagogical approach was a new educational method for both faculty and students. It reflected a paradigm shift from a traditional discipline-based, faculty driven curriculum to an integrated, student-centred and learner driven one.

Was the NRMSM prepared to initiate such an approach? The concerns and criticisms that were expressed by the medical staff to the participants who were the first cohort are described in this category. As the first cohort, the participants felt like ‘guinea pigs’ and ‘test subjects.’

This view can be seen by what Precious says:

I think that we were a group of students who unfortunately had to be the guinea pigs. It was not by our choice.

(Precious: 02)

Princess also expressed her feelings of being called part of a ‘guinea pig class’ in the following statement:

When I came into medical school the new curriculum was starting, the PBL curriculum, some people called it Curriculum 2001, it had many names and because it was something that was new, our class was called the ‘guinea pig’ class.

(Princess: 01)

Joseph used the negative labelling to prove the consultants wrong about him being part of an experimental curriculum. He claimed that this had motivated him to study harder and try to answer the questions correctly. This experience is evidenced by the following description:

Some people had preconceived ideas that the new curriculum students were useless. They would say, Oh, the guinea pig class again!" This pushed me to go home and read. I even bought more textbooks. But I think time proved them wrong because every now and then, if you answered what was considered a 'brilliant question' and you were from the new curriculum, it was "wow, you're from the new curriculum? (laughter)

(Joseph: 06)

Another variation of the experience of being in the first cohort of students through the curriculum is reflected in Keti's description of how they were determined to stand together as a class:

We kept telling ourselves, we know we're these guinea pigs and we're trying to become good doctors. This gelled us together, we had to become a unit to fight for what was our right.

(Keti: 07)

Some of the other participants felt demotivated and disillusioned by being given such an identity (guinea pig). The following quote from Gary demonstrates the derogatory labelling that the students in the class of 2001 had to endure:

I never had a good experience with any consultant in third year because even before the tutorial had started, there were already comments that we were this group of students who didn't know Anatomy, Physiology and the other basic sciences. We were the new curriculum students and we were just guinea pigs who didn't know much.

(Gary: 12)

According to McLean (2006), academic faculty members, especially clinicians, should be aware that students notice their attitudes and behaviour since they are prestigious

members of the medical profession. Her study on the importance of clinical role models in the early years of a PBL curriculum concluded that with a more integrated, student-centred curriculum, where students are exposed to the medical profession early in their studies, clinical role models were important for inculcating the correct attitudes and behaviours in medical students as they progress through their studies.

She stated further that, “the clinician’s approach to interacting and treating not only their patients but also the students will influence the manner in which young and often impressionable learners become aware of professional values” (McLean, 2006: 66). Some of the students in the class of 2001 were as young as seventeen and eighteen. At this impressionable age, it was important that the behaviour and attitudes of the clinicians that they witnessed during their first clinical encounters, be worthy of emulation and would also serve as a lasting impression of the practice of medicine.

To some extent the behaviour of the clinicians in the wards may have reflected a resistance to change from a traditional paradigm in which they had trained in and had been training other medical students in to a more student-centred reformed curriculum. Paice *et al.* (2002) in McLean (2006:68) recommended that, “senior academics who have not kept pace with change in expectations of today’s patients, should undergo retraining such that all parties were aware of the values and attitudes that should characterize the medical profession in providing health care in the twenty first century.”

The conceptions of being in the experimental first cohort described the participants’ experiences as feelings of being marginalized and discriminated against because they were in a new curriculum. Although they had no choice in this matter, the medical staff looked at them with scepticism and had a biased perception that the students in the new curriculum did not have an adequate knowledge about medicine. The PBL students were the experimental class who were studying medicine in a ‘strange’ and ‘different’ way from the usual way that the consultants had been trained in and had been training medical students in for many years.

4.2.1.2. Conceptions of labelling by medical ward staff

During the third year of the PBL curriculum, students were required to attend their clinical education modules at the various hospitals in KZN (see Chapter 1 for details on the clinical education modules). It was during their rotations through the required disciplines in medicine that the participants' reported their experiences of being labelled by the medical staff who were involved with the bedside tutorials. Some of the participants reported that they were labelled as inferior because they were undertaking a PBL curriculum. This is evidenced in the following quote by Patricia:

Some consultants reminded us constantly that, "your curriculum is inferior, things are just not done this way!" They should have researched it more before they introduced it. You guys will just not make 'good doctors.

(Patricia: 04)

From the data it was evident that the medical staff had a negative view of the PBL curriculum and therefore labelled and marginalized the students. The experience of being judged as if they know nothing about medicine is highlighted in the following quotation:

In third year when we went to the wards as new curriculum students, I really think that we were marginalized in the sense that the doctors had a preconception of us. The preconception was that we didn't do Anatomy and we didn't know anything. We were labelled as students who learnt medicine on dummies [models in the Skills Lab]. We were not welcome. I didn't feel well received as a new curriculum student.

(Gary: 12)

Joseph expresses how he felt demotivated and degraded by the labelling, but reported that the more they would insult him, the harder he would work to prove them wrong. The following quote describes this frustration:

They told us that we were students who didn't know what we were doing. Most of the consultants had negative perceptions of the new curriculum. But we pressed on because we were determined and we had a point to prove. The more they said negative things, that made us want to prove that we would make good doctors...they would really degrade you as a student.

(Joseph: 06)

The participants reported that they were labelled as failures and that they would fail because of the new curriculum. Niki describes how she experienced such labelling by the consultants:

There were lots of consultants who told us that we were going to fail. We were never going to make it and that they had no hope for medicine in the country if this was what medicine was going for.

(Niki: 11)

Cindy reported that she was scared of the consultants because they labelled them as being incompetent and this would make her nervous to examine patients in the wards. Her fear and nervousness may be described in the quote below:

And there you were, a third year student, you were already scared and I remember this time in the ward when a little boy came in with a distended abdomen and he was pyrexial¹ and I was trying to think what was wrong with him...I tried to examine him when the consultant came in and screamed, "you don't examine patients like that!" I almost stopped breathing, so right from the start, Department X felt that we were incompetent as new curriculum students. Okay it wasn't all the consultants, but a handful of them who would label us as being incompetent.

(Cindy: 03)

It was also reported that the PBL students felt inferior to the other students, interns and registrars in the wards because they belonged to the new curriculum.

Mac describes his experiences of feeling inferior and being labelled as an obstruction:

In the wards when we were examining patients we felt like we were an obstruction. They would tell us that we were obstructing the other students, interns and registrars. The senior doctors saw us as an obstruction and the MO²s and registrars were their priority.

¹ pyrexial: increased body temperature

² M.O.: Medical Officer-doctor working in a particular Department of a discipline in medicine.

(Tom: 09)

It was the responsibility of the medical staff in the hospitals (medical consultants, registrars, medical officers and nurses) to teach the medical students during their clinical methods modules from third year until final year. In her study that looked at the qualities attributed to an ideal educator by medical students, McLean (2001) reported that within the South African context, it was imperative that medical educators played a proactive role in student learning that would contribute to repairing the damage of the past. She goes on to say that, “if medical education is about enabling an individual to become responsible, caring and functional member of society, then the teacher-learner interaction becomes a central issue in student learning” (McLean, 2001:367). Students in her study rated the personal qualities of being approachable, helpful and friendly, higher than other technical issues of punctuality and organization of lectures and tutorials. It can therefore be deduced that students enjoy the humanistic side of the medical educators and are in a position to describe the impact of such educators on their development. From the data however, the participants described their experiences with the medical staff in the wards in a negative light where they were made to feel inferior, incompetent and were told that they would fail to become good doctors. The impact of such labelling and marginalization will be elaborated on in the CDA chapter (Chapter 7).

The participants faced such labelling because they were part of the first cohort that experienced the change to PBL pedagogy. McLean (2004) in her paper on sustaining problem-based learning reform recommended that the first cohort should be made to feel that they were ‘trail blazers’ and not guinea pigs. They should be supported as ambassadors of the new curriculum and their evaluation taken seriously (ibid).

4.2.1.3. Conceptions of being compared with traditional curriculum students

In 2005, a unique situation arose at the NRMSM. Both the traditional six year students and the PBL-five year students were in the final year of the MBChB programme together. The class of 2005 therefore comprised four hundred students (200 PBL and 200 traditional students). As described in Chapter 1 the students were grouped together to

attend their clinical education rotations through the various medical disciplines. Groups of approximately seventy students each rotated across the six final year disciplines. At this stage there were no distinctions made between both groups of students. All the students were required to attend the same teaching and learning sessions in the hospitals. The assessments were also the same for both cohorts and were held at the end of each block. The participants described the variations in how the medical staff compared the PBL students (the participants) with the traditional students. They also described how the PBL students compared themselves against the traditional students in terms of their theoretical knowledge and clinical competencies. These conceptions form part of the 'Guinea Pig Identity' Category because it was in the comparison with the traditional students that the participants were made to feel like 'test subjects' to determine who were better students and which group would make better doctors.

Princess describes how she was compared to the traditional students in her group:

When we were in a ward round together, the consultant would ask who was going to present. The consultant would ask an old curriculum student to present because they knew more. This meant that the new curriculum students should shut their mouths and just listen.

(Princess: 01)

The participants felt that the consultants believed that the traditional students' theoretical knowledge was better than that of the PBL students. Another example of being compared with the traditional students is highlighted by the following quotation:

We were supposed to select a patient to examine and then present to the consultant. The consultant would know exactly what to expect from the old curriculum students, but with us, they would just say, "Do you know anything about this patient?", "When will you cover this?" We figured that they just didn't understand the new curriculum.

(Tom: 09)

From the data we can see that some of the consultants were unaware of what had been covered theoretically in the new curriculum up until the clinical years. They were only

aware of what was taught in the old curriculum. During 2005, most people who were involved in the teaching of medical students wanted to compare the two cohorts of students both from a theoretical as well as a practical point of view.

The following quotation describes how Patricia experienced this comparison:

Everybody was interested in comparing us to the old curriculum students. Whenever we would walk into the hospital, they would ask you, "Which curriculum are you doing?" We were looked down upon because we didn't do Anatomy and Physiology. They would say, "You guys haven't dissected a full body or that you haven't done Chemistry so you're not as good as the old curriculum students". They expected our clinical work not to be sharp as well.
(Patricia: 04)

A variation in the experience of being compared to the old curriculum students is reflected in Sarah claiming that by the final year both cohorts of students had difficulty remembering certain basic science theory. She stated:

"The one thing that I picked up and the rest of my class picked up as well was that, in final year, when it came to answering questions on basic sciences, if I didn't know the answers, then the old curriculum students didn't know them either. So it didn't make such a profound difference that they had dissected for a full year and we dissected for a few months only."
(Sarah: 05)

The new curriculum students themselves were also keen on comparing themselves with the traditional students. They were eager to plot themselves against the traditional cohort in terms of their theoretical knowledge as well as their clinical competences. Gary describes his opinion on the issue:

"I personally felt a drive in that I wanted to be better than the old curriculum students. I felt that the old curriculum students' theory was better than ours. We had an advantage in terms of our clinical skills. We were already

introduced to procedures on the models in the Skills Lab. The old curriculum students did not have that benefit.”

(Gary: 12)

The view that the clinical skills were better in the PBL students than the traditional students was supported by Mac who describes how he was able to confidently examine patients in the wards compared to the traditional students:

“When we went to the wards with the old curriculum students to examine patients, we were definitely more competent and confident in every respect. We would just walk into a ward and be able to talk to the patients, put them at ease and examine them. The new curriculum always stressed the holistic management of patients. We were always engaging in discussion with our patients. This was much easier for the new curriculum students because of our style of learning from day one. We always had to be vocal in the tutorials.”

(Mac: 10)

In line with the data from my study, several other studies that have been conducted internationally report that there has been no evidence to suggest that PBL students and graduates perceive themselves to be disadvantaged relative to students and graduates from conventional medical schools (Albanese and Mitchell, 1993; Edwards *et al.*, 2004; Evans and Roberts, 2006). Woodward and Ferrier (1983) found that PBL graduates from McMaster University viewed themselves as being better prepared in independent learning skills, problem-solving, self-evaluation techniques, and data gathering skills, behavioural science information and dealing with the social and emotional problems of patients. The PBL students however rated themselves lower in terms of their basic science preparation. The same can be said for my study. Post and Drop (1990), found that PBL graduates viewed the quality of their training more positively than traditional students in humanistic areas, clinical reasoning and preventative care. However, the traditional students viewed their training in clinical medicine and biomedical sciences more positively. Albanese and Mitchell (1993) therefore concluded that the fact that PBL graduates perceive their

training favourably after being in a position to observe the performance of graduates of a traditional curricula as being very important since, if they were to feel disadvantaged because of their medical training, this would suggest a major problem with the PBL method.

Some PBL students felt that they were able to work well with the old curriculum students because they complemented each others' knowledge. Tom describes how he was able to work well with his group:

In our group in final year, we had half from the old curriculum and the other half from the PBL curriculum. Some of the people I worked best with were from the old curriculum because we kept on giving each other pointers and notes. I found that they helped us a lot with the theory and we helped them with the clinical skills aspects of it.

(Tom: 09)

Princess had the experiences of doing both the first year programmes. She had registered for her MBChB in 2000 whilst the traditional curriculum was still in place. Unfortunately she failed that year and had no option but to reregister for her first year in the PBL curriculum that was implemented in 2001. Here she describes her experience of being in both curricula:

"I think that I am a special breed; I registered to do Medicine in 2000 when it was still the old curriculum. When we started it was mainly up on Howard College¹ Campus, we were doing Physics and Chemistry and that was my downfall. I had a supp² in physics and I didn't pass. I had to repeat first year. Unfortunately that was the last of the old curriculum and that meant that I had to join the new curriculum. I felt angry at myself for failing but at the end of the day, I really appreciated being part of the new curriculum. Compared to being in a Chemistry Lab titrating chemicals, I was doing first year where I was in a Lab learning to put up drips and things that doctors

¹ Howard College Campus: UKZN campus where the basic sciences disciplines were located.

² Supp: Supplementary result which meant that the examination had to be re-taken.

need because when you are in the field, no matter how well you dissected a rat, that wouldn't help you because a rat, is just a rat and a human being is totally different”.

(Princess: 01)

From the above descriptions there were variations in the comparisons between the old curriculum and the PBL curriculum. The consultants and the medical staff were curious to see the difference between the two cohorts. However, as per the reported claims, the consultants lacked information about the contents of the PBL curriculum and therefore they viewed the traditional curriculum in a better light. The PBL students themselves tried to make a comparison both from a theoretical and practical perspective. They seemed to favour the traditional students' theoretical knowledge whereas they felt more confident and competent with their own clinical skills ability. One participant was able to experience both curricula and felt satisfied with the PBL curriculum in terms of it being more relevant to her expectations of what a medical curriculum should be like. The unique nature of the situation of having two cohorts from different curricula in one class may be perceived as an experiment to test one cohort against the other and therefore the conceptions that were expressed above fall under the 'Guinea Pig Identity' category.

4.2.1.4. Conceptions of racism and marginalization

The participants were registered as students from 2001 to 2005. Almost a decade after the formation of the new democratic government in South Africa, the participants still expressed the presence of issues of race and marginalization based on their skin colour. According to the participants, racism and discriminatory behaviour was practiced by some of the hospital staff. This is evident by Princess' experience:

The surgical departments like Surgery and Anaesthetics were mainly 'white-run.' They were run by white consultants and MOs. Some of them were foreigners. There was discrimination where the Black students were

told to go sit in the clinic while the white students could go to the theatre and see laparotomies¹. It was just unfair.

(Princess: 01)

Cindy expressed similar experiences where White and Indian students were given better learning opportunities than the Black students. Cindy described the experiences also in the surgical rotations:

The White and Indian students definitely got better opportunities in terms of learning. For instance, if there was a gunshot to the abdomen, you wanted to go to theatre and assist with the laparotomy. But you would just be told to go to the wards to see if Mrs X's stump² was healing. You couldn't argue with the consultants so you would just go to the wards whilst the other students went to the theatres.

(Cindy: 03)

Patricia claimed that racism was practiced openly in the hospital in which she did her rural attachment during her final year. She described her experience as:

Yes racism was open. Not too long ago, I got a call from a private Board that was investigating racism allegations in Hospital X. Nobody would openly say that Black students should do this and White students should do that, but it was there in the form of their actions. Their actions spoke louder than words.

(Patricia: 04)

Joseph also felt like he was discriminated against during some of his clinical blocks at Hospital Y. He stated the discomfort that he experienced due to the racism.

There was nothing you could do about it. You needed to get your logbook signed off so you had to go to their tearooms. It was uncomfortable the minute you

¹laparotomy- surgical procedure to cut open the abdomen to inspect its contents.

² stump: distal end of an amputated limb.

walked in because if the conversation was in English, it automatically changed to Afrikaans. You felt like they were talking about you.

(Joseph: 06)

Tom described his obstetrics and gynaecology experience in final year as being stressful due to the racism issue. He describes his experience below:

The O and G consultant would say, “You guys don’t know how to come speak to me, you go straight to the SRC okay so lets learn now!” Then instead of the tutorial being thirty minutes, he would go on for an hour and if you couldn’t answer him in that hour, you were in serious trouble. So for O and G you would go home and read until the following morning so when you got questions, you would know the answers. But yes, the O and G experience in final year wasn’t the greatest because of the whole racism issue that was there and the underlying hostility that we had with the consultants.

(Tom: 09)

During 2004 and 2005, the NRMSM came under the spotlight regarding racism. Students complained about the faculty staff being racist towards them. Some staff members also expressed similar views regarding racism in the Departments that they worked in. A private forensic audit by Deloitte and Touche was undertaken during this period and several members of staff faced charges of racism that eventually were taken to the High Court. It is not within the ambit of the study to disclose the findings of such an investigation, however, the participants of the study were exposed to such tensions during their clinical education modules. The issue of racism and discrimination will be expanded on in Chapter 7.

4.2.2. Knowledge construction

The second category identified in the ‘what-aspect’ of the outcome space was that of knowledge construction. The category relates to the participants’ construction of medical knowledge (theory and practical) in PBL pedagogy and explores issues of how the

participants perceived the difference between the knowledge and practices that were expected by the two different kinds of curricula-traditional versus PBL.

4.2.2.1. Conceptions of learning in a Skills Laboratory

The Skills Laboratory (described in detail in Chapter 1, Section 2) is a simulated educational facility in which a wide variety of medical professional skills are taught on models/mannequins, simulated patients etc. During the first three years of the PBL medical curriculum the participants were taught these skills in the Skills Laboratory that was officially opened in January 2001 when the PBL curriculum was implemented. The participants described how their exposure to the Skills Lab and the learning of skills on models and simulated patients from day one of their curriculum contributed to their awareness of what medicine was all about. Sarah describes her experiences of the Skills Lab:

In first year when we went to the Skills Lab, we did things that were relevant to what you would actually be doing in hospitals. It's all the skills that we learnt in a relaxed environment in the Skills Lab that showed us what medicine was all about.

(Sarah: 05)

Many studies have been conducted both locally and internationally on the use and advantages of clinical skills training within a Skills Laboratory. Docherty *et al.* (2005), in their study on e-Learning techniques supported problem-based learning in clinical situations and proved that e-learning techniques helped students acquire clinical skills in the safety of a simulated environment within the context of a problem-based learning curriculum. Through the use of 'George' a Draeger™ mannequin who was attached to a ventilator and monitor that could simulate and display clinical data, the students were able to explore, analyze and make clinical decisions regarding his management within the safety of a clinical simulation in the Skills Laboratory (Docherty, 2005).

Jane commented on how she preferred learning patient care practically rather than theoretically:

We went to the Skills Lab from first year. We were taught practically rather than studying about patient care from a textbook.

(Jane: 15)

With the traditional, discipline-based curriculum students were exposed to two distinct educational paradigms viz: an educational paradigm (theory) and a practice paradigm (practicals). Students had lectures and studied from the textbook; thereafter in years 4, 5 and 6 they would attend the clinical education modules and saw the patients that they had read about earlier in their studies. Many studies reveal that when students are faced with real patients in the clinical setting, they were unable to relate the cold facts of the 'knowing that' with the interpersonal contextual 'knowing how' (Heliker, 1994). The PBL curriculum had become internationally recognized for its ability to integrate both theory and practice. The Skills Lab was one of the ways of introducing the participants early on in their studies to clinical situations that they later dealt with during their clinical education in the hospitals.

Some participants found it challenging to perform procedures and clinical skills at such an early stage of their student lives. The following quote highlights such fears (Niki):

Although we were excited and looking forward to the first exposure that we got in the Skills Lab, it was daunting to say the least that we actually had to put up drips¹ and take blood pressures in our first year.

(Niki: 11)

Tom remarked that the Skills Lab acted as a building block to his clinical education. The following quotation explains how he benefited from this introduction to clinical medicine:

In the Skills Lab we were exposed to the clinical work with the dummies. I think that was an excellent introduction to the clinical examination. Given that we were straight out of high school, the Skills Lab served as an introduction to what medicine really was.

(Tom: 09)

¹ drips: insertion of an intravenous drip through the vein of a patient.

Many studies have reported that undergraduate medical students are under prepared to begin their clinical education. Lee, *et al.*'s (2005) study reported that teaching in a simulated environment increased student confidence for learning clinical skills on newborns. From the data it can be seen that the Skills Lab also served as a place to build competence and confidence in procedures. This is highlighted by the following quote:

If we hadn't practised how to do a lumbar puncture¹ in the Skills Lab, we wouldn't be able to do it confidently on a real patient. I think it really was an integral part and crucial to building our clinical experience.

(Shaun: 13)

Mac expands on this idea by saying:

I'm a hands-on person so I really liked the fact that I could actually go to the Skills Lab and actually put up a drip onto a hand or do a physical examination on one of my colleagues as a simulated patient. So the Skills Lab was very good for me.

(Mac: 10)

The Skills Lab also conducted the Emergency Care Course that taught life-saving skills. The participants claimed that they really benefited from the Course as is highlighted by the following quotation from Kenneth:

The Course that we took in the Skills Lab really helped us, starting with using a suction² unit, properly assembling an Ambu bag³, knowing how to hold it and all those practical things that can save or kill a person if you are fumbling.

(Kenneth: 08)

Joseph supports the above view by stating:

The clinical assessments from year onwards in the wards were very similar. You were given a patient and you only had 10 minutes to examine the patient, come up

¹ lumbar puncture: procedure performed to drain cerebro-spinal fluid from the spinal cord of a patient.

² Suction: device used to extract fluid from a patient via a catheter.

³ Ambu bag: manual ventilator used to assist with a patient's breathing.

with a diagnosis and differential and then present the patient to the examiner. Our experiences in the Skills Lab, from year really prepared us for that. Our time management was a big factor, apart from us being confident enough to go in and approach the patient.

(Joseph: 06)

From the data it is evident that the Skills Lab served as an introduction to clinical medicine. The experience that was gained in the Skills Lab contributed to the competence and confidence of clinical skills when they had to be performed on real patients. It also provided the participants with life-saving skills. The Skills Lab was also seen as a safe and relaxed environment where the participants could practice their skills until they were competent at them. Learning clinical skills in this manner contributed to the construction of knowledge of the practical aspects of medicine through PBL pedagogy.

4.2.2.2. Conceptions of transference of skills from simulated to real clinical contexts

During year three of the PBL medical curriculum the participants were introduced to the clinical methods course that was co-ordinated by the various clinical departments within the medical school. The course required the participants to attend their clinical education at the different teaching hospitals within KZN.

The NRMSM rostered its undergraduate students to provincial hospitals in the Durban and Pietermaritzburg regions of KwaZulu-Natal from third year onwards. These are district level urban hospitals that are staffed by doctors who are on a joint agreement between the Department of Health and the University of KwaZulu Natal. This implies that there is an obligation for those doctors who are on joint contract to supervise and teach undergraduate students at those hospitals as part of their job description.

The participants described the transition of learning clinical skills from a simulated environment to the real clinical setting as a natural progression. However, it seemed as if

they were left on their own to bridge the gap. Keti describes how she had to transfer her skills that she learnt in the Skills Lab to the real clinical setting:

In the wards it was very academic and you were asked to do a history and examine the patient on your own. The transition was self driven because if you were not interested you could just go away. You had a logbook and you had to do certain things so you did what you had to do to just pass.

(Keti: 07)

Mary felt that the progression was a natural process and describes how she got by on her own in the wards:

It wasn't such a jump from simulation to the real patients because we thought of our simulated patients as real patients. So I did the transference of skills by myself. We went to the wards and said "okay" we recognise that we need to do this procedure from the Skills Lab and we did it on the real patients.

(Mary: 14)

Sarah shares the same sentiments:

It was a very natural process for me anyway. An example was with O&G, we would remember the process that we studied in the Skills Lab and remember how the tutors would hold the doll and pelvis and actually show us how the process of delivery was and we would then apply that when we were standing in front of a real patient who was in labour.

(Sarah: 05)

Another participant described how he gained confidence from his experience in the Skills Lab and how easy it was for him to apply his skills on the real patients.

I think there really wasn't much of a transition. Actually the Skills Lab gave you confidence when you went to the patients in the ward. You weren't going there and 'phaffing' around. For example, examining the cardiovascular system, you weren't thinking, where do I put the stethoscope? What am I listening for? So you went to the wards already with the confidence that 'I've done this before. Now it's just a matter of doing it on real living patients'.

(Gary: 12)

Cindy describes how she did not have any guidance in the wards. The following quotation describes her uncertainty of assessing whether what she was doing was actually correct:

We went to the wards and practiced on patients by ourselves. We introduced ourselves to the patients but we didn't tell them that we were doing a physical examination on them that we learnt from the Skills Lab. You are not really sure now, that what you are doing is correct. There's nobody to tell you that what you are doing is correct.

(Cindy: 03)

Clinical attachments, whether they were in Medicine, Surgery, Paediatrics or some other discipline, provided learning opportunities which were related to the practice of that particular discipline, with little or no emphasis on integrated teaching and learning. Up until their year, the participants had learnt basic clinical skills in the Skills Laboratory. They had been introduced to the physical examination skills, history taking, procedural skills, diagnostic skills and a few therapeutic skills. As mentioned earlier, most of the skills were performed either on models/ mannequins, simulated patients or on each other. All the demonstrations and teaching were done by the Skills Laboratory staff comprising two paramedics and a few clinicians. There was very little teaching from the clinicians of the various disciplines who were based at the hospitals. Therefore, when the students went to the hospitals during the clinical methods course, the clinicians there did not have a clear understanding of what the PBL students had been exposed to in the Skills Laboratory and during their tutorials.

From the descriptions of the participants, it appeared as if the transference of skills that were learnt at the Skills Lab was a natural progression from a simulated environment to the real clinical setting. However, they felt that the transition had to be self-driven. The participants had to rely on their own clinical judgements to make the transition. There was little or no guidance from the ward staff to assist the participants. As stated earlier, the medical staff that were on a joint contract with the University and the Department of

Health had a responsibility to teach undergraduate students. However, they were also responsible for providing a service in terms of patient care at the hospitals. This issue will be discussed later on in the thesis. (Chapter 7)

One of the reasons why PBL was implemented at the NRMSM was as a result of observations from clinicians that medical students were unable to transfer learning from the classroom to the clinical setting. Parwat (1989: 150) defines transfer of learning as “the ability to draw on or access one’s intellectual resources in situations where those resources may be reliant...” The clinical context provides an opportunity for students to show how their prior learning or understanding is brought to a new context. However, Tedesco states that students should not be left alone in the critical clinical care context before important levels of mastery have been attained (Tedesco, 1989). From the data it can be seen that some knowledge of clinical studies was constructed in the skills lab, however transference of this knowledge to the real clinical setting was left up to the participants to achieve. This issue will be elaborated on further in Chapter 7.

4. 2.2.3. Conceptions of clinical competence as a student

The procedural skills that were performed on models and mannequins in the Skills Lab simulated almost a life-like quality. For example, simulated blood was filled into the plastic veins of an intravenous cannulation model and when a student inserted a venflon (i.v. needle and catheter) into the vein, the chamber filled up with the simulated blood, closely resembling what it would look like in a real patient. These procedures were taught and assessed in the form of an OSCE (objectively structured clinical exam) that will be detailed later in this Chapter. During the first three years of the PBL curriculum the participants had been exposed to most of the required procedural skills prior to them going to the wards where they were required to perform the skills on real patients under supervision of the medical staff.

The conceptions in this category describe the participants’ experiences of performing such procedural skills on real patients and also describe the medical staff’s reaction to the

participants' clinical abilities. These experiences contributed to the construction of the clinical competence aspect of practical knowledge construction that is required of a doctor. Joseph describes the first time he inserted a drip on a real patient:

At the end of first year, a classmate and I went to the hospital's casualty on Friday night just to get some experience. One patient who had cut himself came in by ambulance. The nurses wanted someone to put up a drip on him. I quickly shouted that I would do it. I felt confident, and inserted the needle into the vein and I actually hit it right. The nurses said "Wow you guys are good" The interns and MOs were also surprised that a first year could actually put up a drip.

(Joseph: 06)

Patricia described her experience of inserting a central venous line¹ when she was in third year:

I remember in third year the registrar asked if we had heard of the CVP. I said 'yes, in the Skills Lab.' He said 'Okay, you look at how I do this one and you can attempt the next one.' So it started from early on, with the knowledge that you got from the Skills Lab and if you befriended the right person in the clinical setting, you could do everything except maybe cardiothoracic surgery (laughter).

They would allow you to do things because they could see that you had some background knowledge and you were confident.

(Patricia: 04)

The participants also described how they would assist the interns (year graduates) with their clinical duties. The following quotations highlight one such incident:

I remember when I went to the wards and met the intern. Those were the ones we used to befriend because we felt a little bit at their level. They would say to us "Okay, you do my bloods. Can you pull bloods?" (Removal of a patient's blood from their veins using a needle and vacutainer). I would eagerly say, "Yes, I can pull bloods because I had done it in the Skills Lab." They would then ask me to

¹ central venous line: intravenous drip inserted into a central vein of the body (subclavian vein).

explain the procedure of pulling bloods and if they realised that I knew what I was saying, then they would let me do it all day.

(Shaun: 13)

An example of the display of clinical competence by the participants is highlighted in the following quotation:

I remember my rural attachment in final year, the OPD (Out Patients Department) was run by only one community service officer. It was very busy and three patients came in with meningitis. The CSO cried out "Oh there's so many patients to do lumbar punctures on! The queues will have to wait." I volunteered to do the lumbar puncture. She asked if I had done one before. I said 'yes, in the Skills Lab'. Right from the outset they realised that I had just not heard that when somebody has meningitis that you do a LP, I had actually done it before. So the skills that we learnt on the dummies were actually applied in real life.

(Jane: 15)

Cohen-Schotanas, *et al.* (2008), investigated the effects of conventional and PBL curricula on clinical and general competencies and career development. They wanted to test the longitudinal effects of a PBL curriculum and conventional learning relating to student's appreciation of curriculum, self-assessment of general competencies, and summative assessment of clinical competence and indicators of career development. They concluded that except for O&G no differences were found between the cohorts in clinical competence during their clerkships. In the study, the participants felt that they were clinically more competent than the traditional students.

The participants felt clinically prepared to treat patients in the wards. The data indicates that they were confident with their procedures and protocols for approaching patients in emergency situations. One such incident in emergency medicine is highlighted:

I had a patient that came in with seizures, next thing he starts vomiting. For someone who first encounters this kind of situation, you would just panic. All you want to do is to get up an I.V. and put in valium to stop the fit. But the patient is also vomiting and I started thinking, is the airway still secure, do I need to suction? Those are practical things that the Skills Lab teaches you, to think

logically. You need to have a step by step approach to any situation. Just as in the protocols from the Skills Lab.

(Mac: 10)

The participants perceived that their clinical acumen at that time as students was good. They were confident that they could perform most procedures and use most pieces of equipment that were required for clinical practice. The following is a quotation that describes the use of such a machine (the ECG):

Things like ECGs we were doing very well. ECGs were one of the topics I presented and the consultants were very impressed. They gave me a good mark for placing the leads and interpreting the ECG strip. I remember, in the Skills Lab, I used to sit down and put the leads on the model. I would do it in a stepwise manner and it became easy for me to conceptualize it. So the ECG presentation that I did, they photocopied it and gave it to the other groups of students as well.

(Tom: 09)

The participants felt confident and competent in performing procedures and conducting patient-care on real patients. They expressed their gratitude for the opportunities that were created by the Skills Lab. The practice of the procedures on the models and the use of a stepwise approach in managing the procedures and patient care were highly beneficial. The protocols that were handed to them were useful in their ability to recall their management approaches when they were necessary during emergencies in the real setting.

4.2.2.4. Conceptions of clinical assessments

The participants described their experiences of the clinical assessments throughout the curriculum. First they described the OSCEs that were conducted in the Skills Lab, and then they went on to the OSCEs and clinical assessments that were conducted in the wards in the various disciplines. According to the variation of conceptions, the clinical assessments contributed to the construction of clinical knowledge. The construction of the clinical knowledge was longitudinally attained. This meant that the experiences in the

Skills Lab OSCE were expanded on by the later clinical assessments in the real clinical context.

The following quotation describes the experience of the OSCE that was conducted in the Skills Lab:

The OSCEs in the Skills Lab were very intimidating and stressful. The examiners were very stringent. They were strict. The examiners were from the hospitals and from private practice. It was stressful because you had to do each station in three minutes and remember exactly what had to be done. Studying like that and practicing the skills over and over again for the assessments made us very confident when we went to real patients. When we had resuscitation we knew exactly what we were doing.

(Kenneth: 08)

The variations of conceptions of clinical competence that were expressed by the participants indicated that they were clinically competent to perform procedural and clinical skills on real patients from as early as their first year in the programme. The data reflected an ability to transfer the skills in ways in which indicated a confidence in their construction of practical (clinical) knowledge.

The same sentiments were conveyed by Princess who describes her experiences of the OSCE in the Skills Lab:

We would have these OSCEs in the Skills Lab to test if we could really do the skills in three minutes. It did a lot in terms of giving us the confidence because if in three minutes I could do this, I would be able to do it in a real situation. So even the assessments of our skills made a big difference because it gave us the confidence. Yes, even though we didn't see it that way, back then. It was torture! (laughter). But the OSCEs were definitely for our benefit. You don't see things as you go through them, but in retrospect, you realise that it was necessary.

(Princess: 01)

Docherty *et al's.*, (2005) study on clinical simulation testing concluded that the test performed in a simulated environment improved student performance in exams and also increased self-efficiency in the performance of clinical skills in real patients. These findings can be paralleled to the data in my study since the data indicates that the students found the OSCEs in the Skills Lab useful in their preparation for clinical assessments in the real clinical context. (Kenneth: 08, Princess: 01)

The participants described how they were able to adjust from the assessments in the Skills Lab to the assessments in the wards. Cindy highlights her experience:

In the senior years we had to do OSCEs that were a bit more complicated. It was interesting, looking back now, as much as we were terrified of the OSCEs in the Skills Lab in our first 3 years, it really prepared us for the real situation in hospital.

(Cindy: 03)

The experience of the clinical assessments in the hospital wards appeared to be a positive one. Mary describes how she coped with the assessments in the wards:

The assessments were very clinical which is what we enjoyed. All the disciplines had OSCEs which were difficult but we thoroughly enjoyed them. The exams were quite well organized and knowing that the practical's percentages weighted more, was a bonus.

(Mary: 14)

Tom shares the same sentiments about the clinical assessments as the previous one:

The clinical assessments in the wards were about you and the patient. You have to assess the patient and the only thing I can say that helps is that you know what you are looking for and you direct yourself and the patient. In terms of time, you are thinking ahead and you know what to anticipate so you are not fumbling and going in circles. The exam was based on assessing patients and taking their histories and examining them. I think we did just fine.

(Tom: 09)

Mac also expresses his satisfaction with the clinical assessments in the wards, saying that if he had done badly it was himself to blame:

All the cases that I did in clinical assessments, they were fine and fair and if I didn't do too well, then it would have been just my own weakness of not picking up something. The assessments were well rounded and I felt that I did well in the different disciplines.

(Mac: 10)

The participants in the study reported that they performed well in clinical assessments and experienced no disadvantage in this regard from having experienced a PBL curriculum. This is in line with similar studies in the literature. For example Cohen Schotunus *et al.* (2008) findings showed no difference in clinical competence between the two cohorts being compared. These findings confirmed earlier studies conducted by Albanese and Mitchell (1993) and suggest that PBL students' clinical competence during assessments is not disadvantaged or compromised in anyway.

Shaun felt that he was able to cope practically. However, he had to rely mainly on his own knowledge to answer the theory questions. The following quotation describes his experience:

During the assessments, I could see that I had gaps. In terms of the clinical aspects, I was alright. I was quite confident with the practicals. The problem arose with the theory questions where honestly speaking, I had to rely on my own reading and knowledge for this. During the OSPE (practical exam) where they would put up slides and ask questions on theory regarding whatever the case was based on, you would be asked to explain the pathology, symptoms, etc; here I felt that I had to rely on my own reading. Not to put down the PBL process, but I think that it's more an individual thing because the cases were there in the first 3 years, and if I didn't read around them properly and apply myself well there, I would actually come out with less clinical knowledge than I was supposed to.

(Shaun: 13)

All the participants reported that they were satisfied with their progression from being assessed in OSCEs at the Skills Lab and thereafter the clinical assessments in the ward. They expressed their preparedness for the practical aspects of the assessment however

there was a concern that there might have been a gap in the theoretical knowledge that they had acquired. They claimed that the theoretical gap may have arisen as a result of inadequate reading of the cases in the first three years of the curriculum. This issue of theoretical inadequacy is dealt with in the next section.

4.2.2.5. Conceptions of theoretical inadequacy

During the first three years of the PBL curriculum, students learnt the theoretical aspects of medicine through a facilitated small group process where they discussed a paper case that was uncovered each week (Chapter 1 details this process). In this way, all the content of the basic sciences was integrated into well constructed problem paper cases that served as a trigger for learning. All the relevant concepts from the Anatomy, Biochemistry etc. were learnt in the context of these clinical problems and it was hoped that the students would integrate this theoretical knowledge and be able to apply it in the context of the real clinical problems when they went to the wards.

The designing of the paper cases and the delivery of the large group resource sessions that covered the theoretical aspects of curriculum was limited to a few individuals from the faculty. The participants of the study reported that many of the consultants in the hospitals were unaware of the theory that had been covered in the first three years. The following quotation describes the perceptions that some consultants had regarding the lack of basic science knowledge in the new curriculum:

There were a lot of consultants who obviously didn't like this new curriculum because of the manner in which we learnt and I can tell you they openly said that we were lacking the basic science knowledge.

(Jane: 15)

Mary's experience further expands the issue of the lack of basic science knowledge:

I remember this one time in year, one of my colleagues presented a case on pneumonia and the questions that were asked (of course, we hadn't done that much Microbiology, we had just touched on it in year). We were asked, "Name

all the organisms that can give you a cavitating pneumonia?” Oh, we just stood there (laughter) and I think we only knew Klebsiella and the consultant just went off, “I don’t know why you don’t know this! This is basic year stuff and blah, blah, blah. How are you going to be doctors?”

(Mary: 14)

Gary expressed a variation in his experiences of the theoretical aspects. He describes how he had to cope with learning the theory by himself:

Your theory was mainly self-directed...you didn’t know how far to go with it and therefore you would spend a lot of your time researching a topic. Say for example Diabetes, you would spend a lot of time reading on myopathies¹, then you won’t have time to read about say the signs and symptoms of eye disorders and the medications. You had to direct yourself.

(Gary: 12)

Shaun, on the other hand, reported that although he was able to cope with performing skills on patients, he had a problem with the theory that was associated with the practicals:

Sometimes in front of a patient they would ask me to perform an abdominal examination, I would be able to do that very well, but when it came to discussing the theory behind it, I wasn’t confident about whether I knew enough about the topic

(Shaun: 13)

Niki reported that she had problems integrating the theory with the clinical blocks during her third year. Her experiences were as follows:

The biggest problem for me in third year was that I was doing a clinical block that was completely unrelated to the theory that I was doing at medical school. If

¹ muscular disease in which the muscle fibers do not function for any one of many reasons resulting in muscular weakness.

I was doing Paediatrics as my clinical block, I would be doing the psychiatry Theme (theory) at the same time. This was very frustrating because we couldn't integrate the theory with the practicals.

(Niki: 11)

Mac described a similar experience but this was with the consultants who were unfamiliar with the structure of the curriculum:

The consultants were not familiar with the new curriculum structure and assumed that if we were in the third year then they expected us to have covered certain theoretical aspects. They did not understand that if we were lacking in our theory it was because we had not covered it yet in the Themes at medical school. It was not because we were weak students.

(Mac: 10)

Several studies on the integration of basic sciences into clinical problems have been undertaken to determine whether students were able to solve real clinical problems and integrate the relevant basic science knowledge into their explanations of the real problems. Patel *et al.* (1991) found that PBL students were able to offer more basic science explanations than conventional students; however in the context of my study the data had revealed problems with the basic science knowledge. The problems lie with both the participants (Mary, Jane Shaun) as well as with the consultants who were unaware of the level of the theory the participants were at (Mac, Gary)

Dolmans (1996) study concluded that the PBL students were more coherent in their pathophysiological explanations compared with conventional students. From my data there was no evidence that indicated that the PBL students were better able to integrate their knowledge of basic science into clinical problems but instead the data reflected a problem with the structure of the theory in the curriculum and its integration with the clinical modules. This will be elaborated on in Chapter 7 and Chapter 8.

The conceptions of theoretical inadequacy that were raised by the participants reflected a problem with the construction of theoretical knowledge in a PBL curriculum. The notion

of the integrated nature of a PBL curriculum will be discussed in Chapter 7 and will call on Bernstein's Theory of Classification and Framing to explain the issues.

4.2.3. Conclusion

This chapter described and interpreted the phenomenographic categories of description of the participants' ways of experiencing the phenomenon. The categories of the Guinea Pig Identity and Knowledge Construction emerged from the variations in the conceptions that were reported by the participants when they reflected on their student experience. Returning to the first critical question of the study, what was the first cohorts' experience of learning the clinical aspects of the PBL curriculum; the qualitatively different ways in which the participants' experienced the phenomenon were described and understood. Whilst this Chapter looked at describing the categories, Chapter 7 will detail how CDA was used to show how such discourses had power and ideological effects.

Chapter 5 is a continuation of the phenomenographic analysis and deals with the second part of the outcome space. This section of the outcome space deals with the 'how-aspect' of the phenomenon and describes how the relationship between the phenomenon and the subsequent clinical environments of internship and community service was constructed.

CHAPTER 5 –CONSTRUCTING THE RELATIONSHIP

5.1. Introduction

This chapter serves as a continuation of the phenomenographic analysis from the previous chapter. The outcome space of the phenomenographic findings was represented in Chapter 4, section 4.1. The previous chapter described and interpreted the ‘what-aspect’ of the outcome space. This Chapter will describe and interpret the ‘how-aspect’ of the outcome space which is the description of how the participants of the study constructed a relationship between the experiences of learning the clinical aspects of a PBL medical curriculum and the experiences of the subsequent clinical environments of internship and community service in the South African health care context. In describing and interpreting this relationship, the second critical question of the study will be addressed:

- How was the relationship between the experiences of learning the clinical aspects of a PBL medical curriculum and the experiences of the subsequent clinical environments constructed?

The Chapter begins with a description of the category ‘Professional Identity,’ and is followed by the qualitatively different conceptions that were part of the construction of

the relationship with the internship and community service experiences. The conceptions of the category of 'Professional Identity' are supported by data quotations from the transcripts of the interviews. The Chapter concludes with a discussion that relates all the conceptions to the category of descriptions and thus creates an understanding of how the relationship between the phenomenon and the subsequent clinical environments was constructed.

5.2. The 'how aspect' (structural) - constructing a relationship with internship and community service

The 'how-aspect' of the outcome space is also known as the referential aspect that refers to how the phenomena relates to its surrounding. In this study it refers to how the participants constructed a relationship with the phenomenon and the subsequent clinical environments. By describing and interpreting the 'how-aspect' of the outcome space we will be able to understand how the participants made meaning of their experiences of the phenomenon and the impact that these experiences had on their ability to construct a professional identity as medical practitioners during internship and community service.

Internship is a compulsory requirement of the Health Professional Council of South Africa (HPCSA). Since June 2004, all South African medical graduates are required to undertake a two year internship placement at a hospital facility that has been accredited by the HPCSA. During the internship period, interns are subjected to the same rules of professional conduct as that of registered medical practitioners. Upon completion of the two year internship period, the intern is required to submit a duty certificate to the HPCSA that reflects satisfactory completion of all the Boards' requirements for an intern. This serves as a precondition for his/her registration to perform community service (HPCSA Regulations relating to the registration and Training of Interns in Medicine: Annexure M). In terms of allocation to the different hospitals in South Africa, the interns

were able to state their first three choices. However, the final decision was made by the officials from the Department of Health.

Community service is also a compulsory requirement of the HPCSA for all South African medical graduates. On completion of the two year internship placement, the medical practitioner has to fulfil the requirements of community service in a public rural health care facility in South Africa. The choices of sites are once again determined by the Department of Health. It is only on completion of internship and community service that a medical practitioner is granted full registration with the HPCSA and is subsequently allowed to practice medicine in either the private or public health sector of South Africa. It was in the context of the clinical environments of internship and community service that the study sought to understand and interpret the participants' experiences of the phenomenon in constructing a relationship with such clinical environments. The next section deals with the phenomenographic category of the description 'Professional Identity.'

5.2.1. The professional identity

The category 'Professional Identity' indicated an emerging sense of competence and ability as medical practitioners across a range of work place situations during internship and community service. The participants in the study were in an 'intermediate' position between students and professionals and therefore were an important source of information regarding their experiences of the phenomenon. The experiences and challenges that they faced being the first cohort of PBL students and graduates of PBL pedagogy, impacted on the relationship that they constructed with the subsequent clinical environments.

According to Reid and Petocz (2004), there has been little research on how graduates have taken to their working worlds. My study is concerned with what the participants had taken form their previous learning (Skills Lab and clinical education in hospitals) and how they interpreted what they had learned in their work environments. The

“Professional Entity” project was an Australian based project that investigated the relationship between students’ perceptions of professional work and their current learning. Dahlgren and Fallsberg (2007) clarify the notion of the Professional Entity as a unifying way of students and teachers understandings of what professional work was about. My study used the three level hierarchy of views of professional work and the corresponding relationships with the clinical environments, to show a hierarchical progression of the construction of a professional identity from being a medical student to a professional medical practitioner. Reid and Petocz (2004) describe the Professional Entity in the figure below:

Table: 3 The Professional Entity (Reid and Petocz, 2004)

<p>EXTRINSIC TECHNICAL</p>	<p>Professional work is constituted as a group of technical components that can be utilised when the work situation requires it.</p>
<p>EXTRINSIC MEANING</p>	<p>Professional work focuses on developing the meaning inherent in discipline objects.</p>
<p>INTRINSIC MEANING</p>	<p>Professional work is eventually related to a person’s own personal and professional being.</p>

The conceptions in this category describe the emergence of a professional identity in the contexts of internship and community service. The subsequent discussion will show how the conceptions form a relationship with the Professional Entity and in so doing will reflect the development of the participants' professional identity.

5.2.1.1. Conceptions of transition from student to graduate

In 2006, when the first cohort of the PBL graduates took up posts as interns throughout South Africa, it was questioned whether the PBL curriculum had adequately prepared its medical graduates for internship. The concerns were whether the transition from being a student to an intern was easy or a difficult one. The conceptions below describe the participants' views on whether the curriculum had sufficiently prepared them for practice and how they were able to make the transition from being a student to an intern. Princess describes how she made the transition from student life to being an Intern:

The difference between being a student and an intern was basically the responsibility. As an intern you were responsible for the ward and having to do clinics. It was different from being a student where you could do whatever and it was still okay. As an intern you had to manage your time otherwise you were not going home. It was very, very busy and hectic. Most of the time you were walking half asleep but it was a wonderful experience. I really appreciated what I learnt as a student in the Skills Lab because many times you would find yourself in resuscitation situations and it was exciting knowing what to do.

(Princess: 01)

Shaun describes his experience of moving from being a student to an intern and shares the sentiments of Princess in the sense that he enjoyed being left on his own to treat the patients. The following quotation supports this:

I enjoyed myself during internship; I went in head first and enjoyed it thoroughly. No-one was looking after you, you were basically the doctor responsible. No patient blew me away and I took it in my stride and I enjoyed that.

(Shaun: 13)

The following quotations also highlight this notion of the interns being left alone to take on the responsibility of patient care:

Internship quickly taught me how to manage patients on my own. I am grateful that I quickly learned how to stand on my own and not depend on anyone else. I learnt a lot by being given the freedom to be a doctor.

(Cindy: 03)

From the above data it is evident that the participants had to move quickly from the mentality of being medical students to that of professional medical doctors. According to their reports, the main contributing factors for the transition were that they were left alone in the hospital wards and therefore had to assume responsibility for the patient care. They had no choice but to behave as professional medics and perform the necessary treatment that was required. This contributed to them feeling a sense of professional identity.

Internship has been rated the most intense, hectic and formative period by most graduates of medical curricula. According to the participants, a typical working shift of an intern in the South African health care context is a thirty-six hour period of non-stop work at busy District level hospitals. Although most facilities had a Doctor's Room available to the interns for purposes of rest in between patients, there was no time for sleep or change of clothes during the shifts. Ackerman *et al.* (2009) claim that interns in the first few months

should assume new roles and responsibilities and look at this time of their lives as contributing to their professional identities as medics.

5.2.1.2. Conceptions of competence as interns

The participants described their ability to perform clinical procedures and physical examinations on real patients as interns. They expressed their fears, anxieties, competence and confidence in patient care. The data quotes reflect a progression of professional development in terms of their competence and confidence as medical practitioners working in the 'real world' of medicine.

Patricia highlights how scared she was on her first day of internship:

The first day, I had to do Paediatrics, the Registrar asked me to take bloods from a newborn baby. It was absolutely scary because the baby was a preterm and I was supposed to get into the tiny veins. It was so scary!

(Patricia: 04)

She subsequently described how the fear disappeared soon after. The following quotation demonstrates how she was able to overcome her fears.

I asked myself, what if I'm not able to do certain things. What if I'm incompetent? But after a week of internship, I think the fear just went away. As a student you were made to feel like you will not make a good doctor, so you start wondering if you didn't study enough, what if you weren't able to make a diagnosis? But at the end of the day, we did just fine. I think that we did quite well as the new PBL students. After a week, I could manage a ward. I think that I was a good intern actually."

(Patricia: 04)

Gary shared similar experiences in terms of performing clinical skills on patients on the first day of his internship. The following quotation describes his first day of internship:

My first day of internship was in Paediatrics. It was required of me to put up an I.V. line on a neonate that was just two hours old. I felt very confident in doing it and I did it perfectly well. Later on the same day I had to intubate a neonate, and again I felt very capable of doing it and I did it. The staff were very impressed with me. I explained to them that I had done the procedures as a medical student in the Skills Lab.

(Gary: 12)

Tom describes his clinical competence as being good and at the required standard for internship. In fact he won a prize for being the best intern in the Obstetrics and Gynaecology Department that year. The following quotation describes this:

At Hospital X, you were left on your own because they were short staffed and it was very busy. When the patients came in you had to diagnose whether it was a ruptured¹ placenta², placenta previa or preterm³ labour. You had to know when you examined the abdomen whether it was a twin pregnancy, or a breech presentation⁴. All that was expected of you because the hospital was short staffed. I enjoyed that kind of practical experience, and as a result I was given an award for being the best intern for that block during that year.

(Tom: 09)

Sarah shares similar experiences about her clinical competence and confidence:

During internship I enjoyed the resuscitations. If a gunshot patient came in, I would quickly assess the patient, put in a chest drain and drain half a litre of blood without waiting for a chest X-Ray. That was a good experience because we just reflected on the ABCs that we learnt in the Ambulance Course in first year. That gave me the confidence to deal with any emergency.

(Sarah: 05)

¹ Ruptured placenta: partial or complete separation of the placenta from the uterine wall.

² Placenta previa: situation of the placenta lower down in the uterus, partially or completely covering the cervix.

³ Preterm labour: labour prior to 28 weeks of gestation.

⁴ Breech presentation: when the presenting part is other than the head.

Another participant describes how she gained confidence in patient assessment and reflected on her experience of the Ambulance Course.

The Ambulance Course taught you how to do a primary and secondary survey of a patient. It taught you how to quickly and systematically go about assessing your patient and to quickly rule out the life-threatening injuries and to do simple procedures to save your patient. So as horrible as we thought it was back then, in real life in the emergency setting it quickly sorts out problems for you.

(Jane: 15)

The descriptions clearly show that the participants were clinically competent and confident to work as interns. They were able to cope well with the demands of internship. Eyal and Cohen (2006) compared medical students' and graduates' perceptions of the effectiveness of their medical curricula in preparing them for clinical practice. Their study reflected similar findings where graduates rated their learning experiences better than students. This may be attributed to their growth in professional identity as well as their increasing maturity in the field of medicine. (This will be discussed later in the Chapter).

5.2.1.3. Conceptions of relationships with the health care team during internship

The healthcare team consisted of consultants, registrars, medical officers, community service officers, interns, graduates from Universities throughout South Africa and the nurses. The participants described their experiences of working together with the healthcare teams in the various hospitals during internship. In this way we are able to trace their growth into a professional identity and their ability to form health care relationships with other professionals.

Mary describes her relationship with the healthcare team as being good and she felt like she was part of the team. The following quotation highlights this experience:

We had a good relationship. We worked as a team. Internship was very tiring so we needed each other's help. The consultants also appreciated the work we did. They treated us with respect and spoke to us as doctors. It wasn't like when you were a student where they would degrade you or make you feel like you knew nothing because you did the new curriculum.

(Mary: 14)

Joseph also felt the same in terms of how he related to the team:

Throughout my internship I felt like I was part of the team. It didn't matter what curriculum you did. They did not differentiate at all. You were an intern and you were expected to work the same as all the other interns.

(Joseph: 06)

Mac felt clinically stronger than the interns who had graduated from other universities in South Africa. This is evidenced by the following quotation:

I think that the UKZN graduates were a bit stronger clinically, even the attitude to work was much better. The intern from UCT was a bit stronger theoretically, but clinically we were able to perform the skills better because of our undergraduate training.

(Mac: 10)

Keti felt the same way; that her competencies as an intern were better than the other interns on her team. She also attributes this advantage over the others to her undergraduate training. She describes this in the following quotation:

UKZN interns were on top in terms of our clinical practice. We were much quicker to perform the procedures. They would hesitate or ask us for help to

perform them. But at the end of the day we worked as a team. We were one big group of interns.

(Keti: 07)

Sarah described her experience with the consultants in a very bad light. Her experience as an intern in Hospital Y, Department X was filled with discrimination and racism. The black interns were treated differently from the white interns. This is evidenced by the following quotation:

The Surgical disciplines, General Surgery and Anaesthetics were run by white consultants and medical officers who were also white foreigners. There really was discrimination where the black interns were told to go and run the clinics whilst the white interns would be told to go to theatre where they could learn laparotomies.

(Sarah: 05)

She goes on to describe how badly they were treated as black interns during the ward rounds. The following quotation describes this:

When I presented the mortality stats to the consultants, I would say if the deaths were avoidable or unavoidable. If there was an avoidable one, the consultant would target you as if you had killed the patient. So sometimes you really felt victimised. Another black intern who was my friend, she was light skinned and she used to walk out red every morning after those meetings because she would just be crying. Once they realised that you had tears, they were quick to victimise you even more.

(Sarah: 05)

At that particular hospital even the staff facilities were separated. The following quotation highlights this:

There were two tearooms in Hospital X, one for the black doctors and one for the white doctors. It wasn't really stipulated, but if you went to the theatre

tearoom where all the 'whiteys' were, five minutes was long enough and you walked out on your own.

(Sarah: 05)

In the Ackerman *et al.* (2009: 119) study, low point incidents reflected “moments in which the interns felt incompetent or unable to master the medical knowledge and clinical skills required of an intern.” In my study the low point seemed to reflect feelings of racial victimization and discrimination and not clinical competence and confidence. This is evidenced by Sarah’s experiences. Ackerman *et al.* (2009: 120) state that “as the interns process the clinical events they either develop or erode their confidence and independence as a medical practitioner.” From the data it can be determined that the participants in the study did not allow such incidents to affect their professional development. However, the impact and effect of such hegemonic discourses will be dealt with in Chapter 7.

The data also reflected the demands of internship and its impact on the personal lives of the participants. This was evident by Princess’ description of “how busy and hectic her internship period was.” She also stated that she was sleep deprived. Similar findings were recorded in the Ackerman *et al.* (2009) study where interns described how physical challenges like sleep deprivation and their long hours of duty placed a huge strain on their personal lives. However, throughout the internship period, the participants appeared to gain a sense of professional identity in terms of them being left alone to fulfil the roles of medical practitioners at the busy hospitals.

In terms of relationships with the health care team, the participants appeared not to have team conflicts. Instead they felt advantaged over the other interns in terms of their preparedness to perform clinical procedures. They also described their experiences of teamwork in a positive light and claimed that this contributed to their learning in the clinical environment. Ackerman *et al.* (2008) described the opposite findings in their study where the interns described disagreement about patient management situations and team members were openly disrespectful to them. This contributed negatively to their

learning opportunities. It can therefore be concluded that close interactions between interns and other health care professionals provide rich opportunities for the role of teamwork and therefore assists in the development of professional identities of medical practitioners.

5.2.1.4. Conceptions of rurality as community service officers

Post 1994, the South African government began to change legislation regarding public service delivery. South Africa's transforming health care was influenced by the imperatives of the World Health Organization's declaration of the Alma-Ata (1978) and the Ottawa Charter (1986). In doing so, a primary health care approach was adopted. With the emphasis on primary health care, came a broadening of access to medical care in areas that were previously under-resourced, under-serviced or had no health care facilities at all. As part of the ANC's Reconstruction and Development programme, came the clinic infrastructure programme in which one thousand three hundred and forty-five new clinics were built and two hundred and sixty three upgraded in rural communities previously called "Bantustans" (Coovadia *et al.*, 2009). This attempted to "transform the public health system into an integrated, comprehensive national service, driven by the need to redress historical inequalities and to provide essential health care to disadvantaged, especially rural people (Coovadia *et al.*, 2009)".

During this period of mass transformation in South Africa, the Department of Education and Higher Education Institutions also had to open its doors to change. With the introduction of "The Education White Paper 3", all Higher Education Institutions throughout South Africa had to realize goals of increased access and participation, generate new curricula with flexible models of learning and teaching within a curricula paradigm that was more participatory and transformative focusing on developing individual and societal needs, (Ramklass, 2006).

According to the Declaration by the ANC (1994), primary health care, "emphasized community participation and empowerment, intersectoral collaboration and cost-effective

care as well as integration of preventative, promotive, curative and rehabilitation service.” Despite the implementation of such a policy, “the pivotal facets of primary health care are not in place and there is a substantial human resources crisis facing the health sector” (Coovadia *et al.*, 2009: 820). It therefore became a legislated requirement of the HPCSA, that all South African medical graduates serve a compulsory period of community service within a rural health care facility for a period of one year on completion of the internship period. Subsequent to community service, the medical professional had a choice of applying for a post within the Department of Health’s public service or seeking employment in the private sector, or through international agencies. This conception describes the participants’ experiences of rurality in their community service placements at the different rural health care facilities in KwaZulu-Natal. Mary describes the rural clinic that she was attached to for one year. The following quotations highlight her experience:

It was a very busy district clinic with very basic facilities and only 4 doctors (2 community service officers and 2 medical officers). The patients would come in taxis and form queues every day. We had limited resources, not even a Lab. Sometimes we would even run out of drips.

(Mary: 14)

Kenneth also expressed that the limited resources was a problem during his community service placement.

We went without water for two weeks, sometimes without electricity. They brought us jugs of water just to wash our hands. It got a bit rough sometimes. We only had level one and level two drugs. Equipment was bad, didn’t have tubes to take bloods. BP machines didn’t work. It was tough; we didn’t even have suturing material.

(Kenneth: 08)

Princess describes her rural experience in a similar light with very limited resources and a year of difficulties.

What a year of suffering! It was very rural. Yeah, very limited resources, equipment and consumables, even human resources. The staffing was very

bad. We were 11 on paper but on any given day there were 5 at work. It was very busy, the OPD¹ would see roughly a hundred and twenty patients. We didn't have needles or drips sometimes and you would just watch a child die in front of you because you didn't have fluids to resuscitate them. Not even oxygen masks!

(Princess: 01)

Despite the implementation of a primary health care model and reconstruction and development efforts, sixteen years later, the reality within the rural health care facilities (as evidenced in the data) is that they still remain under-resourced and under-serviced. Coovadia, *et al.* (2009) study on *The Health and Health System of South Africa: historical roots of current public health challenges*, examine the historical roots of the determinants of health in South Africa and the development of the health system through colonialism and apartheid to the current post-apartheid period. They found that although the “public health system has been transformed into an integrated, comprehensive national service, failures in leadership and stewardship including weak management has lead to inadequate implementation of what were often good policies” (Coovadia, *et al.*, 2009: 828). Their report details some of the failures in health system governance of the post-apartheid period that has delayed progress in addressing South Africa’s historical inheritance. Chapter 7 will detail some of their findings according to the following headings:

- Human Resource Challenges
- Poor stewardship, leadership and management of health systems

It was quite evident from the data that the above mentioned issues compromised patient care in the rural facilities. There was a serious lack of essential resources like medication, medical equipment, consumables and even water that were critical for patient care. The participants’ however were able to deliver a service to the patients under these

¹ OPD: Outpatient Department

circumstances. The next conception describes how they were able to cope as medical practitioners even with such limitations.

5.2.1.5. Conceptions of the construction of a relationship with rural practice

The conceptions below describe the professional identity and practice of the participants who were practicing medicine in a rural context. They describe here how they were able to deliver medicine to the rural communities even under limited circumstances. Precious describes how satisfying this kind of practice was for her:

When I was out there on my own, able to make good decisions, proper assessments and put the patient first, it was very satisfying. You get to know your patients because they come in and out to see you to say 'thank you'. Some even bring mealies and food for you. Then you feel like you have done something good. You are making a difference out there.

(Precious: 02)

Mac also believes that he was making a difference in terms of providing a service to the community although there were limited resources. The following quotation describes his experience of patient care in the rural context:

I saw myself in a vital position to help. I tried to do as much as I could given the limited resources. I felt for the patients, that's what pushed me to work. So for me, we couldn't just turn a patient away because there was no water in the clinic, we had to consider that they were coming from far and they had no money to come back, so I did the best I could. I tried to use all my skills that I learnt from medical school and treat the patients as best as I could despite the resources.

(Mac: 10)

As a result of the lack of resources and local services in rural areas, medical professionals are forced to take on a patient-centred approach to medicine (Farmer, 2003). From the data it is evident that the participants were easily able to adapt to patient care demands in the rural community context. This may be attributed to the underpinning philosophy of

the problem-based learning medical curriculum that formed part of their teaching and learning at NRMSM.

Cindy also attributes her ability to work in the rural context with limited resources to the nature of the curriculum that she was taught at medical school. This is evidenced by the following quotations:

We have started a self-help project at the clinic. Some patients have grown a vegetable garden. I think a lot of that came from the undergraduate PBL curriculum. PBL was not just didactic learning, we didn't just learn about medicine, it really opens you to the patient and the family. All our cases had a name, there was Mr So and So, a 45 year old male, with a problem (medical) and he has a wife and three children. It wasn't just about his medical condition, we actually learnt around the patient. I think the PBL process really helped me understand all this. I think that's what makes working at this clinic so fulfilling, frustrating, and rewarding at the same time, 'cos you're just trying to do your best. That's what community service is all about.

(Cindy: 03)

Niki describes how she enjoyed making the decisions about medical management and being the doctor responsible for her patients.

Community Service was an absolutely enjoyable experience. I was my own boss, I wasn't told what to do in terms of medical management of my patients. The decisions that I made were final I didn't have to confirm with someone else that I was doing the right thing. I felt like a responsible, competent doctor.

(Niki: 11)

From the above descriptions in the transcripts it appears that all the participants had good experiences as rural practitioners. The descriptions were too numerous to be included, although there were limitations in terms of resources both with regards to staff and medical equipment, they were able to provide adequate patient care to their patients. In their self-ratings of their abilities as doctors, they felt that they were making a difference to the patients in the rural communities. Most attributed this to the nature of their undergraduate curriculum that focused on the holistic management of patients and their

families. It is clear from the data that their community service experience culminated in them completely developing into medical professionals. The next section will discuss the development of the participants' journey from being students to that of professional medical practitioners.

5.3. Link between categories of description and emerging professional identity

I will now draw on all the categories of description from the outcome space and show how the participants' experiences as students, interns and community service officers progressed across the clinical contexts according to and in relation with the three distinct levels of the Professional Entity as described in Table 3, section 5.2.1.

The narrowest most limiting level of the Professional Entity was the 'intrinsic technical' that focused on the technical skills of the work situation. In my study the participants described their conceptions as students at this very limiting level. The focus of their learning was to merely gain competence and confidence in the clinical and procedural skills that were required for patient encounters (supervised by hospital staff) as well as during assessments. The following quotation from Patricia supports the link of professional identity to the extrinsic technical level of the Professional Entity.

In the wards you were given a logbook that contained all the skills you had to do for the block. I would just go to the patients and do whatever was required just to get the log book signed off, so that I could pass”

(Patricia: 04)

Gary describes his experiences of learning these skills in a simulated environment (the skills lab) and reported that learning the skills on models gave him an idea of what to expect in the real clinical environment. Gary describes his experience in the skills lab:

I think if we hadn't practiced how to do a lumbar puncture on the model in the skills lab, we wouldn't be able to do it confidently on a real person.

(Gary: 12)

Jane describes her focus on the technical skills that were acquired in the skills lab:

I still struggle to put up drips on patients, because I don't like inflicting pain. I remember in first year we learned to put up drips on the model arms in the skills lab. We learned it in a step by step manner. The protocols really helped because you could go back to them.

(Jane: 15)

In the wards during their clinical education, the focus was also on the acquisition of the technical skills of the profession of medicine. They felt confident in taking histories from patients, 'examining them' and performing certain procedures for example insertion of intravenous drips, collecting blood specimens and performing lumbar punctures on real patients.

The above quotations all illustrate the extrinsic technical level of the Professional Entity in relation to the level of experience of the participants' i.e. the student (year 1 - 3) and subsequently years (3 – 5) in the clinical education environment. They felt satisfied that they were able to perform the technical components of their professional work when it was required.

During their internship period many of the participants described the extrinsic meaning level of the Professional Entity. Here they described how they were able to make meaning of their professional skills within the clinical environments that they were working in as interns.

This is evidenced by the following quotation by Shaun:

Being an intern was completely different from being a student. Now you had the responsibility of an entire ward or clinic. It was so different from being a student where you could do whatever you wanted and it will still be okay. As an intern you had to prioritise certain things and manage your time properly otherwise you were not going home.

(Shaun: 13)

Precious expresses how meaningful the internship experience was in the following quotation:

It was the busiest period of my life and I was always tired, but I don't regret it, it was the most important two years in my career."

(Precious: 02)

Cindy shares the same sentiments:

The calls during the internship were very busy, but I was still able to make proper assessments and diagnosis and stabilize patients even at two o' clock in the morning"

(Cindy: 03)

Princess describes how she was able to make meaning of her professional skills as a medical practitioner even though she was exhausted from not eating or sleeping throughout her shift. The following quote highlights her dedication and commitment to the profession:

It was the of January; I was on call for Ortho at Hospital X. That day, I hardly had a chance to have a bite of my sandwich, but I had to put my mind to it. I had to pull out the red book and work. I didn't even sit down for a minute. The patients were in and out. It was three o' clock in the morning, my eyes were heavy but I still kept them open. I think that there are certain things that get my adrenalin rushing, like treating all those patients that came in with fractures from the taxi accident. I never thought that I had so much of energy.

(Princess: 01)

It is evident, from the above quotations that when the participants reached the internship level of experience, they were able to identify with the ‘inherent meaning’ of their professional work. During their community service placement, they showed their own personal development with regards to their profession as medical practitioners. This is evidenced by the following quotation:

As community service officers we were not just playing the numbers game with the patients. We considered the patients waiting outside. I sometimes wanted to do extra things for the patient, like go into health education. I didn't just refer patients to other better facilities to decrease my workload.

(Joseph: 06)

Gary also shares the same sentiments about community service:

Community Service was not just simply about being the doctor that gave the diagnosis. It was about the service we offered the patient. Were we improving their quality of life in any way? I had to consider the patient and the family and the social issues around the family.

(Gary: 12)

Kenneth describes how he was able to relate to the patients personally during community service. The following quotation shows how he considered the patients first:

During community service we had limited resources. We didn't have labs for instance. We had to consider whether it was really necessary to do all the fancy investigations. I had to often question whether the investigations were necessary for the sake of excluding certain things or whether it was going to change the management. So I had to really think about all the consequences for the patient, identify with him/her before calling for all investigations.”

(Kenneth: 08)

The above quotation from Kenneth shows how the professional work of being a medical practitioner is related to his own personal being. Keti describes how meaningful the patient-encounters were during community service:

In the field when I was working as a CSO, I loved and enjoyed it. I had a positive attitude and wanted to be a good doctor. During community service I was alone most of the time and got used to the patients. It was really fulfilling when they said 'thank you' or brought you mealies or something. It made me feel like I was making a difference. Then I thought that I was not a bad doctor after all. I didn't miss out on the Chemical Pathology or Anatomy lectures like the old curriculum students. We also had a good basis and foundation with the new curriculum. We were making a difference out there. I think we did quite well as a group that were seen to be 'guinea pigs'.

(Keti: 07)

5.4. Conclusion

The progression from 'guinea pigs' to professional medics was a journey that the first cohort of PBL medical graduates had to endure. Their experiences as students in a simulated clinical environment, the clinical education modules in the wards, the internship experience and finally the community service experience shows a progression from the narrowest extrinsic technical level to the broadest most inclusive level of intrinsic meaning. This progression in the formation of a Professional Identity also reflected how the participants were able to construct a relationship between the experiences of learning the clinical aspects of a PBL medical curriculum and the experiences of the subsequent clinical environments of internship and community service. The phenomenographic analysis resulting in the formulation of the outcome space (Chapter 4, section 4.1.) described and interpreted what the participants' experiences of the phenomenon were and how the relationship between the phenomenon and the subsequent clinical contexts was constructed. An additional analytical frame of CDA was required to uncover why the relationships were constructed in the way that they were.

Chapter 7 will describe the CDA framework in the analysis of the three categories of description: 'Guinea Pig Identity,' 'Knowledge Construction' and 'Professional Identity.' This will serve to address the third critical question of the study.

The next Chapter forms a framework for the CDA Chapter. It outlines the methodological issues that were encountered after the phenomenographic analysis was completed and justifies the use of CDA as the second analytical lens.

CHAPTER 6 BECOMING CRITICAL

6.1. Introduction

As a doctoral student, one of the most difficult tasks was to choose a research framework and methodology that would be most appropriate to the focus of my study. As the research journey progressed, I also experienced some personal changes as a researcher. This chapter provides an explanation for the route that the research journey took in terms of its theoretical framing and methodological choices that were made for the purposes of a more in-depth analysis of the data. It will show how and why such methodological issues are extremely important in a doctoral study. The chapter begins with an explanation of why there was a need to merge methodologies, followed by the rationale both personal and theoretical for the shift to a critical approach. Thereafter, I describe the use of critical discourse analysis as an additional analytical framework. This chapter concludes with the ethical considerations that were adopted for the study.

The previous two chapters described in detail how a phenomenographic approach was used to collect, organize and analyze the data that reflected the experiences of learning of the first cohort of medical students through the clinical aspects of the PBL medical curriculum and the subsequent clinical environments. It was on completion of the phenomenographic analysis together with some other factors (detailed later in this section) that I began questioning the emergent phenomenographic categories. I then began a search for an additional approach that would enable me to unpack and illuminate the phenomenographic categories of description beyond the interpretive level of understanding and description offered by phenomenography. The next section will deal with literature that reflected similar methodological issues as well as literature that confirmed the interpretive and descriptive theoretical and methodological underpinnings of phenomenography, and why it became necessary to adopt a further approach to augment the phenomenographic analysis.

6.2. Justification for additional analytical lens

When phenomenography was founded by Ference Marton in the early 1970s, it did not have a particular overt philosophical basis, neither was it guided by specific theoretical underpinnings (Entwistle, 1997; Giorgi, 1999; Akerlind, 2005, 2008). Phenomenography emerged from a strong empirical basis that was mainly concerned with solving of specific learning and teaching problems in higher education (Entwistle, 1997; Akerlind, 2005). It later developed from, “problem to solution and from question to answer” (Giorgi, 1999: 114). Entwistle (1997) succinctly summarises the purpose of the original phenomenographic research:

What eventually became codified as phenomenographic research started out as an attempt to scrutinise and understand human learning by focusing on what people are in fact doing in situated practices and when studying. In particular, the approach was driven by an attempt to replace the abstract and empirically unverifiable conceptual frameworks, such as those which implied that people

‘process’ or ‘store’ information in various processing devices of dubious ontological status... The aim was one of reinstating a truly empirical approach to learning as a human and institutional phenomenon, with an interest in clarifying functional relationships between what people do when they engage in learning activities and the nature of understanding they end up with...

(Entwistle, 1997:128)

Phenomenography subsequently became a popular qualitative research tool, used by researchers who were interested in studying teaching and learning in higher education. With its popularity, came problems and challenges (Entwistle, 1997; Webb, 1997; Ashworth and Lucas, 1998, 2000; Amedeo, 1999; Akerlind, 2005; Levy and Ben-Ari, 2009). Some phenomenographic studies were critiqued in the early years for not being rigorous enough in their research design and analysis. Entwistle (1997) however tries to defend such claims by declaring that in the early years of phenomenographic research, there was very little literature on the precise guidelines and descriptions that were required. It therefore became difficult for young and new researchers in the field to effectively use the phenomenographic approach (Entwistle, 1997).

Both qualitative and quantitative researchers have challenged the phenomenographic approach with regards to the subjective nature of deriving the categories of description. This critique however, may well be pertinent to much qualitative research and is not only peculiar to phenomenography. Also some theorists (for example Saljo, 1997; Webb, 1997; Ashworth and Lucas, 2000; Laurillard, 1993; Trigwell and Prosser, 1996) have claimed that phenomenography is a branch of other more established methodological traditions. An interesting point to take note of regarding the critique of phenomenography is that such critique and criticisms have emerged from some of the original members of the research group (Saljo, 1997; Svensson, 1977; Entwistle, 1979 and Lucas and Ashworth, 1998, 2000). Some of the critiques posed by these members have been incorporated into this section of the thesis.

In the subsequent sections of this chapter, I have attempted to highlight some methodological issues that have been reflected in studies in terms of the goal of phenomenography as well as, its research paradigm, and theoretical issues pertaining to phenomenography, its research procedure and results. In this way, I aim to illuminate the limitations of the phenomenographic approach with regards to my study and to justify my addition of CDA to address these limitations in taking forward the phenomenographic results of the first part of my research. Also power is implicated in all the categories of the outcome space and it is because of this substantial emphasis on power that I have decided to augment the analysis with an approach that has power as its core concern.

6.3. The descriptive and interpretive nature of phenomenography

Levy and Ben-Ari (2009) used phenomenography to uncover the ways in which teachers experienced a computer programme called 'Jeliot.' They came up with the category 'dissonant teachers' that described teachers who were enthusiastic about 'Jeliot' but did not use it. Levy and Ben-Ari (2009) claimed that because of its descriptive nature, phenomenography by itself did not enable them to further elucidate and account for this phenomenon. They therefore had to look for a theoretical framework that enabled them to connect 'attitudes' with 'behaviour.' The one limitation of phenomenography that they highlighted was in terms of its goal. The goal of phenomenography is to describe and understand 'variation' in behaviour. It does not attempt to look at the causes of such behaviour. Levy and Ben-Ari (2009) required a methodology that would elucidate causes of behaviour and therefore had to augment their analysis by choosing an appropriate methodology that dealt with relevant concepts like attitude and behaviour for the second phase of their research.

Similarly in my study, some of the phenomenographic categories that emerged from the data, reflected issues of power. Initially the focus of my study was to understand and describe the qualitatively different ways of experiencing the phenomenon. The phenomenographic approach enabled me to arrive at such categories of description. However, phenomenography alone did not allow me to answer the 'why' research

questions of the study. In attempting to uncover why the participants in my study constructed the relationship between learning the clinical aspects of a PBL medical curriculum and the subsequent clinical environment in the ways that they did, I needed to unpack the causes of attitudes and behaviours that the emergent categories described. A methodology that would allow me to explain, expose and illuminate each behaviour was required. According to Webb (1997) phenomenography does not have a particular view of humanity since it is entirely interpretive and descriptive. It therefore makes no critical claims. Webb (1997) argues that phenomenography does not take the social context of education into consideration. He justifies this argument by stating that phenomenography is:

Not in any sense politically radical and no responsibility is placed upon lecturers to produce social reformers, to motivate transformative intellectuals, to argue the oppressive nature of education within an unequal society or to call for de-schooling.

(Webb, 1997: 198)

Phenomenography in the above regard claims to be neutral in terms of its relationship with the learners (participants). It assumes an interpretive position in terms of values and interests by acknowledging their existence without critiquing their power. Many researchers feel that it would be a hindrance to their practice if value positions and ideologies are factored into their research (Webb, 1997). Webb (1997) goes on to critique phenomenography for the supposed observational and interpretive neutrality of the researcher that is usually characteristic of positivistic researchers. He makes further claims that the qualitative nature of phenomenography is underdeveloped in terms of it not being able to exhibit hermeneutical values that are usually associated with human beings. Webb (1997) challenges the qualitative positioning of phenomenography by stating that a tension exists between Enwistle's argument that qualitative analysis requires 'rigour' and carries the 'hallmarks' of scientific research and at the same time seeks 'empathetic understanding.'

Webb (1997) suggests that a hermeneutic understanding by the researcher is an intricate process of 'self-reflective,' 'care' and 'authentic openness' to the 'other.' Such

understandings take time to develop and a phenomenographic interview that is so controlled and short-term does not allow for such understandings to take place. Webb (1997:198) states that, “Qualitative methods employed by phenomenography appear to have more to do with a quest for positivist generalisation than the development of a hermeneutic understanding.” This statement provokes one to question the ontological and epistemological assumptions of phenomenography.

My study was initially located within the interpretive research paradigm in line with the ontological and epistemological positioning of my chosen methodology, phenomenography. Webb’s critique however, questions this location of phenomenography within an interpretive paradigm and raises a suspicion that in fact the methods employed by phenomenography appear to seek a quest for positivist truths which allow for broad generalizations rather than a hermeneutical understanding of the participants’ ways of experiencing the phenomenon. In my attempt at data collection and analysis, I remained faithful to the phenomenographic approach by adhering to the stipulated hermeneutic processes that enabled me to arrive at the categories of description. However, at that point the research took a shift to a more critical approach as I adopted CDA to explore and illuminate the categories of description further. The paradigmatic shift also allowed me to account for *why* such categories emerged.

Ashworth and Lucas (1998) draw our attention to the uneasiness of the kinds of claims phenomenography can make. There seems to be a deliberation of where exactly phenomenography is located. It appears to sit in tension between descriptive interpretive and scientific positivism. This claim may be substantiated by Ashworth and Lucas (1998) argument that Marton’s ‘second order’ of the participants’ conceptions is not straightforward. They argue that the phenomenographic researcher is required to enunciate assumptions and presuppositions that would tend to import ‘first order’ matters into the categories of description. Guided by Husserl’s work on life-worlds, Ashworth and Lucas (1998) drew on two categories that guided the ‘*epoche*’ (bracketing) that they claimed was lacking in the phenomenographic literature on the research process. I have summarised the two categories below:

1. Science- (refers to a 'body of known facts'). In this regard, the researcher has to put this aside in order to avoid the importing of theories that may distort the description of the life-world. It would only be permissible to include perceptions of the researcher's situation that echoed scientific concepts 'naturally' arising in the data. These inclusions would then be independent of the fact that such notions were included in the scientific literature.
2. The researcher should not 'query the validity of the life-world.' He /She should take no position on the true/false nature of the claims made by the participant. Data collection should be seen as a discovery process of individual cases with unique 'life- worlds.'

Summarised from Ashworth and Lucas, (1998)

Saljo (1997) makes a comment that most phenomenographic studies concern how people 'experience' scientific concepts. He contends that the combination of 'experience' with scientific concepts leads to, "claims that are difficult to reconcile with the connotations that go with the term 'experience' in everyday language as well as in any scientific approach that emphasises human experience as an object of inquiry." (Saljo, 1997:185) The linguistic awkwardness is not the main issue here. Saljo claims that the scientific concepts that are part of the scientific accounting practices have been developed in a way that is drained of experiential perspectives (Saljo, 1997).

The above statement may be the one reason why phenomenography has been so successful within a science context. Science concepts are generally not defined by reference to human experience, instead they are defined in "highly specialised accounting practices that have placed certain phenomena in discursive formations that do not need to refer to any kind of human experience" (Saljo, 1997:186). Institutionalised accounting practices are developed and characterised by this feature. Their languages rely on such definitions of concepts and relationships between them. When attempting to understand

such scientific concepts, one usually does not refer to experience and background knowledge in such life worlds, but would rather look at how the concepts are defined by explicit delimitation of what qualifies as instances of those concepts and what falls on the outside (Saljo, 1997). Webb (1997) has critiqued the decontextualizing which has occurred in some phenomenographic studies and argues against the universal application of method across cultures and contexts.

A related critique of phenomenography lies in its failure to acknowledge issues of gender, race, discrimination and marginalization (Entwistle, 1997). In its analysis of the data phenomenography abandons the experiential aspects in its efforts to formulate the categories of description. In doing so, the individual voices of the respondents/participants are lost. The cognitive components of learning as indicated in the data are over-emphasised thus neglecting the emotional aspects (Entwistle, 1997; Ashworth and Lucas, 1998, 2000). Criticism has been raised that there is a tendency in phenomenography to lean on 'patriarchal' disciplinary frameworks in order to structure the outcome space. This may be attributed to the number of male researchers that choose phenomenography as their methodology as well as the 'male dominant' participants involved in the teaching and learning of science where most phenomenographic research has occurred.

The phenomenographic challenge in the context of unravelling how people learn and make use of discursive devices by taking over institutionalized accounting practices are often devoid of an experiential perspective. Phenomenographic research is interested in the situated experiential background of specific utterances. These utterances reflect 'the collective anatomy of awareness.' Saljo (1997:187) states that, "If the expression, 'the collective anatomy of awareness' has any meaning, we must be talking about a discursive entity; ways of accounting for the world that are located in and have their meaning in discursive practices." Saljo critiques this very notion that phenomenographic analysis separates the speakers from his /her utterance (categories of description) and by creating this disconnection, the utterance from the communicative function in context, the study becomes very abstract (Saljo, 1997). Because issues of racism, discrimination and

marginalization were clearly evident in the phenomenographic outcome space of the study (see Chapter 4, section 4.1.), it became necessary to call on an additional mode of analysis which would take cognisance of the study context.

6.4. Methodological claims of phenomenography

Ashworth and Lucas (1998, 2000) have raised several key questions about the nature of phenomenographic research and the way in which it is conducted. They question the position of phenomenography regarding its methodological adequacy in terms of revealing student experiences. They argue that there are clear methodological requirements in this regard and critique phenomenography for not meeting those requirements. Some of these requirements are discussed below.

In phenomenographic research, the aim is to construct a typology of the participants' conceptions as interpreted by the researcher who attempts to provide a clearer, more accurate account of conceptions than those that would be generated by the participants themselves (unaided). Ashworth and Lucas (1998: 417) qualify this statement by saying that, "It must therefore be a paramount requirement for phenomenography to be sensitive to the individuality of conceptions of the world. It must be grounded in the lived experience of the research participant." They go on to say that if this is not considered then the description of the participants' experiences will not be valid and the typology will be deemed arbitrary. In my data collection efforts, I was guided by Marton (1986, 1994) who declared an awareness of the above mentioned issue, and therefore during the interviews I adopted an open-ended technique with a limited number of questions in order to evoke the participants' own conceptions. However, phenomenography literature does not clearly reveal such research procedures for accounting for the lived experience of its research participants (Ashworth and Lucas, 1998; 2000).

Ashworth and Lucas (1998) describe the 'epoche' as the central methodological principle in revealing the true lived experience of the research participants. 'Epoche' refers to the process of 'bracketing' or setting aside prior assumptions about the nature of the

phenomenon. They question the specificity of the presuppositions that should be bracketed in the empirical work. They claim that leading phenomenographers have given some indication of their awareness of this issue. However, there are no stipulations of the process of the 'phenomenographic epoche.' Marton (1994) and Saljo (1997) have provided some guiding questions around the issue of 'epoche'. However, there are clear guidelines on what exactly is involved in 'bracketing.'

Uljens (1992) drew attention to the fact that the phenomenographic research on deep and surface learning did not practice the bracketing of prior theories or findings. He claims that some phenomenographic researchers, "used Marton's (1976) judgement instructions to identify deep and surface approaches...analyses were no longer a process of discovery, but a means of searching for predetermined categories." (Uljens, 1992: 418). During the interview process of my research, I was aware of the bracketing of my presuppositions and theoretical conceptualisation. In this way, I cleared the way for careful hearing of what the participants were saying. Chapter 3 described the implementation of the phenomenographic interviews that were guided by Bruce (1994: 219). Regarding the research procedure of my study, all the qualitative methodological requirements were adhered to. The problem I experienced was not in the construction of the categories, but in accounting for the issues that emerged from the categories of description.

Entwistle (1997: 131) draws our attention to Saljo's critique that, "Phenomenography is concerned about the abstractions which were created through the categories of description, seeing them as being as doubtful in their ontological status as the psychological constructs they were supposed to replace." Saljo refutes the contention that the phenomenographic categories are able to describe the different experiences. He claims that the empirical data reflects only the participants' 'account' of their experiences and he therefore questions the status of the interview data in phenomenographic research (Saljo, 1997).

Saljo (1997) critically looks at phenomenographic enquiry with regards to the relationship between discourse and experience. He considers this issue to be central in

terms of the phenomenographic object of inquiry. According to Saljo (1997: 176), “Talk and language are important ingredients in phenomenographic research.” Phenomenographic assumptions may closely resemble other approaches where discourses are analyzed. Marton (1995) alludes to the constitutive role that language plays in human life, and therefore it is safe to assume that discourse maybe given a crucial role in the constitution of the social world according to phenomenography.

According to phenomenographical assumptions, language, culture and human experience are intertwined. Saljo (1997) however argues that culture in its material and discursive components is ‘genetically prior’ to individual experience. He further argues that communication (talk) has primacy over experience with respect to it being a tool through which individuals’ learn to ‘experience.’ It also characterizes and communicates people’s experiences and the researcher uses it to document the empirical data. Saljo explores the implications of this position of communication by reminding us that ‘ways of experiencing,’ is the primary unit of phenomenographic analysis. These ‘ways of experiencing’ may be accessed through interviews and the researcher may be able to establish the limited number of ways of experiencing the phenomenon. Saljo (1997: 177) questions, “In what sense do the utterances that people respond with in phenomenographic interviewing relate to ‘ways of experiencing?’ In other words, he is questioning what is meant by what is said. He goes on to clarify that:

how people talk, what genres of communication they assume to be appropriate and how they master various discourses are primary, since they form the basis on which we as scholars consider their contributions to communication as instances of meaningful talk.

(Saljo, 1997: 177)

In phenomenographic analysis we have been guided to consider the utterances (as per the interview) as indicative of ‘ways of experiencing.’ In this way, the researcher does not assume that the utterances may signify something else; for example, the participant merely provides a response to a question just to say something and does not truly mean

what he/she is saying. The phenomenographic researcher in his/her quest to remain faithful to the methodology places himself/herself at risk of turning the method into ontology. Saljo (1997: 178) succinctly explains that, “the categories of description allegedly indicating ways of experiencing are no longer the analyst’s tool for understanding human activities in context, but rather something that is supposed to be there in the material and which one is more or less obliged to find.” Saljo further cautions us against considering what people communicate in the interviews as being indicative of a ‘way of experiencing’ rather than a ‘way of talking.’

Since my study focuses on the learning and development of medical students, I am cautioned by Saljo’s suggestion that we should “refrain from critical commitments to assumptions that we generally are studying ways of experiencing when interviewing people.” (Saljo, 1997: 178). What we are in fact studying is what the participants say and therefore the ‘object of inquiry’ becomes the ‘accounting practices.’ Saljo describes this unit of analysis as, “ways of understanding, talking, arguing and ways of bringing the world into language in order to be able to communicate.” (Saljo, 1997:178).

Saljo (1997) argues that entities such as ‘ways of experiencing’ provide a strategy for better understanding of learning. He claims that phenomenographic research only “becomes interesting when there is a discursive practice in which people are trying to achieve something” (Saljo, 1997: 179). Therefore the researcher should rather, “study the constitutive and social nature of language in human practices, and the interesting question of how people learn to mean in such practices” (Saljo, 1997: 179). This becomes my major rationale for considering the discursive nature of the outcome space, and my use of CDA to do this.

Saljo (1997: 180) states that, “what is at stake is precisely the constitution of a phenomenon in a situated practice in which concepts are put to use for concrete communication purposes rather than put on display for observation as they tend to be in interviews.” The participants’ conceptions of the phenomenon were not meaningful in isolation but they formed part of discursive practices and as such gained meaning from

being part of a systematic discourse. Therefore the utterances that were made by the participants and transformed into ‘categories of description’ in that context may not mean the same as they did in their original communicative setting. Furthermore, having developed an outcome space which elucidates systematic discourses, it became important to understand how these functioned.

Saljo (1997) claims that people learn how to experience events in their life. Therefore ‘accounting practices’ (or discursive constructions in CDA terms) are genetically prior to experience. He argues that when an individual talks about his/her experience of a phenomenon, it is usually a borrowed account from what other people have been saying about it before him/her. Dominant discourses about the phenomenon temper the individual’s experience of that phenomenon and therefore affect their accounting of that experience. Saljo (1997:184) qualifies this by stating that, “linguistic categories as something you simultaneously borrow from the past, offer to your interlocutors as sensible ways of constituting events, and thereby present them as resources for individuals to account for their experience in further situations.” It is only through discursive social practices that an individual can account for his/her experiences. Saljo (1997:185) reminds us that, “any ‘experiencing’ presupposes access to a symbolic code through which whatever an individual hears, feels or encounters can be experienced and communicated.” This need to consider the ‘accounting practices’ underpinning an experience requires an explicit consideration of discursive constructions of that experience.

6.5. My personal epistemological shift

Subsequent to the acceptance of my research proposal for the study, I became intensely immersed in a whole new world of philosophical and theoretical readings around the focus of my study. I also attended the six-weekly doctoral seminars that were hosted by the Faculty of Education, UKZN on the week-ends. During the seminars, I would engage with members of staff and fellow doctoral students on issues of research paradigms, methodologies and theoretical frameworks. At the same time, I began analyzing the data

that I had collected using the phenomenographic methodology. It was a combination of all three activities that created an evolution in me as a researcher. I became increasingly uneasy and uncomfortable with the interpretive relationship that I had with the data in wanting to account for and describe the participants' experiences. The phenomenographic analysis only allowed for a description of the participants' experiences and did not account for the ways in which the categories had power over their realities. I began to question the powerful nature of the emergent categories.

As a researcher, I was no longer satisfied with just tracing the experiences of the participants and describing them. My relationship to the research phenomenon underwent a significant shift as a result of my response to the emergent categories. I increasingly felt the need to analyze the participants' experiences in terms of the issues of power and control; discrimination and marginalization which emerged. It was as a result of this epistemological shift¹ that I was prompted to engage with a critical discourse analysis to more fully account for the phenomenographic findings in the data.

Critical researchers believe that men and women live in a world filled with contradictions, unequal power relations and privilege. The critical researcher has to therefore endorse theories that are dialectical, recognizing that problems of society are part of the 'interactive context' between individuals and society. During analysis, both the individual and the society are considered equal and a reference to one is a reference to the other. A dialectical theory thus attempts to trace interactions from the "context to the part, from the system inward to the event" (McLaren, 1986:70). Being dialectic in nature, critical research allows the educational researcher to see 'school/college/university' as a place for instruction (indoctrination/ socialization) as well as an institution that promotes student empowerment/transformation. Critical research is therefore tied to a struggle for a better life for all through the construction of a society that is based on non-exploitative relations and social justice.

¹ Annexure N: poster presented at AMEE 2010, Miami.

Annexure O: poster presented at UKZN, Faculty of Education, Research day (won s second prize in the poster competition).

Using methods such as CDA, critical research seeks to reveal ideological practices. Fowler (1991: 490) defines ideology as a “society’s implicit theory of what types of objects exist in their world (categorization); of the way in which the world works (causation); and of the values to be assigned to objects and processes (general propositions).” These ideas, beliefs, values and principles constitute both individuals’ and groups’ ‘commonsense.’ It may be seen as a way of viewing the world and its social practices.

The shift from a descriptive, interpretive paradigm to this ‘emancipatory paradigm’ allowed me to explore why the participants in the study constructed their relationship with the phenomenon in the way that they did. Lockett (1995) claims that it is within this paradigm that the teaching and learning experiences should be subjected to an ‘ideology critique’ so that the ‘political and socio-economic’ causes of what might be considered to be ‘natural’ could be exposed. The critical paradigm asks questions such as “whose interests are served by the curriculum? What curriculum would promote greater equity, emancipation and social justice? How is power distributed in the teaching and learning process? And how can it be more equitably distributed?” (Grundy, 1987:12). Thus, while CDA was simply used to augment the phenomenographic analysis, due to the nature of the categories which emerged from the data, it cannot be denied that it entailed an ontological shift within me as a researcher also. Chouliaraki and Fairclough (1999) confirm that CDA is concerned with the consequences of social and political ‘commitment’ and how their theoretical practice is influenced and shaped by struggles and practical practices.

6.6. Critical discourse analysis

6.6.1. Introduction

Discourse analysis deals with language, meaning and context. There has been little agreement to a fixed definition of what constitutes a discourse. TerreBlanche, Durrheim and Painter (2006) claim that one should distinguish between how the term ‘discourse’ is

used in the methodology of discourse analysis and how it is more commonly used in 'everyday talk.' McKenna (2004: 15) agrees by indicating the error of assuming the everyday interpretation of 'discourse' where, "a discourse could be seen simply as the set of statements about a given area."

In the study, however, the understanding of discourses goes further than just a set of statements about the discipline of medicine and includes the discursive power of particular understandings of a wide variety of issues related to the pedagogy of medicine within a PBL curriculum and the relationship with the subsequent clinical environments. I agree with Kress (1988: 180) who declares that, "Discourses are regarded as giving expression to meanings and values; they are regarded as having the power to organise how a topic is talked about, understood and acted upon." The study thus looked at the phenomenographic categories of 'Guinea Pig Identity,' 'Knowledge Construction,' and 'Professional Identity' to establish what happened in the construction of knowledge of the participants and the social practices that they experienced during clinical education in their journey towards becoming professional medical practitioners.

According to Van Dijk (2008: 2), "Discourse analysis is a domain of scholarly practice...that adopts many methods of study, depending on the aims of the investigation, nature of data etc." The use of such a practice in my study was to analyze the emerging discourses that were identified through the phenomenographic analysis. The analyses of such texts took the form of qualitative descriptions and explanations of the details of the discourse structure.

Luckett (1997: 30) reminds us that "texts are always discursively produced, it is always a part of a process of social interaction and thus it is conditioned by the structural context and therefore meanings of texts are always socially and historically located in discourse." Van Dijk (2008: 66) states that "...institutions may influence the structures of texts and talk in such a way that, as a result, the knowledge, attitudes, norms, values and ideologies of the recipients are more or less indirectly affected in the interest of the dominant group."

Institutions in my study, the medical professionals at (NRMSM and hospitals in KZN) have their own ways of using language, i.e. discourses that create certain subject positions. From these positions, discourses can come to be seen as natural and obvious by those who use them; live within them. Those who are able to recognize institutionally privileged discourses and take them up are constituted by the institution as being in a position of power. Medical practitioners are constituted by institutional discourses to perform certain roles which give them subject positions and social roles which in turn become part of their identities and subjectivities. Powerful individuals are constituted within particular subjectivities that are dictated by the “power knowledge” formulations in which they find themselves. Discourses in this understanding form a basis of power and in my study, access to power was considered.

Patterns and strategies of access may be spelled out for all institutions. In traditional medical education, the lecturers usually control communicative events, distribute speaking turns, and otherwise have special access to and hence control over medical educational discourse. Traditionally, medical students had access to talk in the lecture theatres and in the wards only when talked to and invited to speak. Therefore, not everyone had equal access to scholarly text and talk. My study sketched a discursive and communicative ‘schema of conditions and strategies of access’ (Van Dijk, 2008) for the participants involved focusing on who said what, to whom and in what circumstance.

TerreBlanche, Durrheim and Painter (2006) advise that the researcher should identify known discourses operating in a particular text. Discourse analysis involves a way of reading that is made possible by the researcher’s immersion in a particular culture. In my study, it was the culture of teaching and learning, the culture of medicine in South Africa, the institutional ethos, the historical context of medicine in South Africa and the socio-cultural contexts of the consultants with the participants. The literature on discourse analysis warns that, although a rich cultural background is a pre-requisite to doing discourse analysis, I extracted myself from the “living in the culture to reflecting on the

culture.” Parker (1992:40) puts it as “striking a critical distance from text.” As I have stated in Chapter 1, although I have been the central instrument in this study, during the data collection and analysis phases, I attempted to distance myself from the text. My use of discourse analysis sought to uncover how the structural context conditioned the discourses (Van Dijk, 2008). In describing these discourses in Chapter 7, I attempted to illustrate through the use of data a rich tapestry of ‘ways of speaking’ that could be recognised and dialogued. I will now move on to discussing critical discourse analysis.

Critical discourse analysis is a “critical framework that is distinguishable from conventional discourse analysis by its emphasis on linguistic manifestations of social and political domination in both spoken and written texts” (Fairclough, 1995: 28). A major goal of CDA is to develop a framework of analysis that becomes a resource for people who are struggling linguistically against oppression and domination (Fairclough, 1995). In analyzing the ways in which the participants discursively constructed their relationship with the phenomenon under study, I was alerted to the domination and oppression that was present during the experiences as students, interns and community service officers.

“CDA primarily studies the enactment of social power abuse, dominance and inequality and how these are reproduced and resisted by text and talk within the political and social contexts” (Van Dijk, 2008: 85). Its purpose is to analyze “opaque as well as transparent structural relationships of dominance, discrimination, power and control as manifested in language” (Wodak, 1996: 24). It is aimed at the understanding, exposure and ultimately resistance of social inequality. CDA’s critical nature thus, “projects a relational logic into a dialectical logic through its analysis of stabilization as an effect of power and a factor in reproducing relations of power, and its forms on the dialectical tension between structural permanences and the practical activity of people engaged in social practices” (Chouliaraki and Fairclough, 1999: 58).

My study used the tools of CDA to analyze the phenomenographic categories of description, then re-examined and evaluated the data to develop theory and acquire a deeper knowledge about the experiences of the participants as being the first cohort and

how they constructed their relationship with the subsequent clinical environments of internship and community service. The study of language use is fundamental to the understanding of how oppressive social relations are created and reproduced (Foucault, 1984). I therefore agree with Fowler (1996) when he claims that CDA is a

Careful analytic interrogation of the ideological categories, and the roles and institutions...a society constitutes and maintains itself and the consciousness of its members. All knowledge, all objects are constructs: criticisms, analyzes the process of construction and acknowledging the artificial quality of the categories concerned, offer the possibility that we might probably conceive the world in some alternate way.

Fowler (1996: 25)

Fowler's definition meets the hallmarks of discourse analysis in the questioning of objectivity and its interest in the practices which produced objectivity, normality and factuality. I used CDA to focus on how the texts were constitutively constructed and how they enacted social relationships and social identities (Chouliaraki and Fairclough, 1999; Fairclough, 1992; Wodak and Meyer, 2001).

6.6.2. Conceptual and theoretical framing of CDA

There are several types of CDA which may be theoretically and analytically quite diverse. However all CDA, including the one used in my study, ask questions about the way discourse structures are deployed in the reproduction of social dominance. My study looked at the phenomenographic categories arising out of the interviews with my participants and re-examined their reporting of the conversations that occurred during their experiences of the phenomenon. According to Van Dijk (2008) typical vocabulary featured in CDA are notions such as 'power,' 'dominance,' 'hegemony,' 'ideology,' 'class,' 'gender,' 'race,' 'discrimination,' 'interests,' 'reproduction,' 'institution,' 'social structure,' and 'social order.' These concepts featured strongly in the transcripts of the interviews as well as the phenomenographic categories that emerged. The study therefore

shifted towards a concern for the analysis of power relations and professional discrimination through a consideration of differential access to discourse networks.

The micro level of social order comprises language use, discourse, verbal interaction and communication whilst power, domination and inequality between social groups are terms that typically belong to a macro level of analysis. Theoretically CDA has to bridge the gap between the micro and macro approaches (Van Dijk, 2008). In my study, I was able to bridge the gap between the experiences of the participants at the micro level and what the discursive constructions of such experiences allowed one to conclude about issues of 'power', 'domination' and inequality at the macro-level.

Most critical work in discourse analysis looks at the social power of groups and institutions. Social groups may be defined in terms of control where groups have power if they are able to control the acts and minds of other groups. This ability presupposes the power base of privileged access to social resources such as knowledge, information, status, fame, etc (Van Dijk, 2008). Bourdieu (1994: 153) states that, “‘symbolic elites’ such as academics exercise power on the basis of ‘symbolic capital’ and they are able to determine topics, style or presentation of discourse.” He further claims that their symbolic power may not only be limited to articulation, but may also extend to the mode of influence. The term ‘elite’ may be problematic but Van Dijk (2008) argues that it should be maintained to denote exclusive social control by a small group.

6.6.3. Methodology of CDA

Fairclough (1992) sketches a three-dimensional framework for the analysis of discourses. The dimensions are: ‘discourse as text,’ ‘discourse as discursive practice’ and ‘discourse as social practice.’ The framework that was selected in the analysis of my study was ‘discourse as social practice’ that looked at the ideological effects and hegemonic processes in which the discourses used by the participants were seen to operate. Hegemony concerns power that is achieved through the construction of alliances and the

interrogation of classes and groups through consent. Fairclough (1995) concurs with this statement by stating that:

The way in which discourse is represented, respoken or rewritten shows the emergence of new orders of discourse, struggles over normative attempts at control and resistance against regimes of power.

Fairclough (1995: 47)

Given the critical approach that the study had shifted to, the framework of ‘discourse as social practice’ was the most appropriate method for the second phase of the study, that served to augment the phenomenographic analysis.

Social life is made up of ‘practices.’ Practices may be defined, as “habitualised ways, tied to particular times and places, in which people apply resources to act together in the world.” (Chouliaraki and Fairclough, 1999:21). The word ‘practice’ may also be understood both as a social action (what is done in a particular time and place), and as what has become relatively permanent (a sense of a habitual way of acting). A dialectical view of practice may reflect that practices are characteristic of both structures and events and structures and agency. A practice of production occurs when people in a particular social relation apply certain technologies to materials (Chouliaraki and Fairclough, 1999). Social practices are always ways of socially interacting and therefore it is important for any dialectically conceived critical theory to grasp the complex qualities for such social interactions.

The use in my study of a critical research approach and the use of CDA within a framework of discourse as social practice enabled me to make the relationships of the participants with the PBL medical curriculum and the subsequent contexts more visible and transparent. It enabled me to explore the ways in which social structure (within the multiple clinical contexts of the medical school and hospitals) related to the discourse patterns (in the categories and transcripts) in the form of power relations and ideological affects. In treating these relations as problematic, I situated the study within a critical research paradigm.

6.6.4. A critical discourse analysis framework

The framework gives a view of what critical discourse analysis usually involves. A framework can be narrowed down to suit particular purposes, for example pedagogical purposes. In my study the analysis suited the pedagogical purposes of a PBL approach to a medical curriculum and the subsequent clinical environments. A CDA framework should be theoretically grounded in its approach (Fairclough, 1995).

CDA usually begins with a discourse related problem. For example, a problem in social practice or a problem in the reflexive construction of a social practice. The first type of problem may involve the 'ideational' or 'textual' functions of discourse whilst the second type may be associated with problems of representations and miscognition. My study at the CDA phase, looked at the phenomenographic categories that emerged and questioned how those categories were discursively constructed. The problem was thus identified as existing within the activities of social practice (across the different clinical contexts).

Chouliaraki and Fairclough (1999) advocate three types of analysis in CDA: analysis of the conjecture 'analysis of the particular practice/s and 'analysis of discourse proper.' The CDA analysis of the phenomenographic categories in my study was located within the second type of analysis: 'analysis of a particular practice.' This type of analysis focuses on the dialectic between the discourses and the moments. The moments of social practice in my study referred to the social relations and process (social relations with the consultants, power, and institutions i.e. hospitals) and the discourses (Chouliaraki and Fairclough, 1999). The analysis was interested in what role discourses played in the practice (clinical education across clinical contexts) and what the relations were of internalization between moments. For example, I wanted to know, what went on in the wards that made the participants feel like 'Guinea Pigs;' who was involved and what was done in the wards at that moment. It was therefore necessary to 'reconstruct' the practice that the discourses were located within in order to get a proper sense of how the discourses figured in the practice. The general objective of the analysis here was to have

a clear sense of how the discourses worked in relation to the internalisation between them and the other moments. Another point of consideration was when internalization was absent (where the discourses remain external to the moments). Chouliaraki and Fairclough (1999: 62) remind us that, “discourse has social force and effect not inherently, but to the extent that it comes to be integrated within practices.”

Specifying relations between the social and discourse moments of social practice inevitably raises questions about power. In the case of the emergent categories in my study, ‘Guinea-Pig Identity,’ ‘Knowledge Construction,’ and ‘Professional Identity’ these categories may be classified as discourses which have internalized the power relations between the consultants and the participants, the academic rulers and the ruled and whose internal features were shaped by these power relations. It is evident in this case that the discourses have power. Power relations are usually relations of struggle. Power may not simply be exercised or fought over. This interdiscursive orientation of discourses may be seen as a strategy of the power struggles. Questions of power may be linked with questions of ideology and maybe looked at in terms of a relationship between the discourse moments of different practices and different orders of discourse (Chouliaraki and Fairclough, 1999).

In terms of the actual CDA, it should be based on a substantial body of material that represents a particular domain of practice. In my study the material emerged from the phenomenographic outcome space that was formulated as a result of the categories of description from the transcripts of the interviews. From the empirical data one needs to determine whether and how the problematic aspect of the discourses functions within the practice. According to Bhaskar’s (2002) explanatory critique there should be a shift from explanations of what it is about a practice that led to a problem to the evaluation of the practice in terms of its problematic results.

Texts can be understood in many different ways. CDA however analyzes understandings; therefore it may offer a particular explanation of a text. By using a theoretical framework to locate the text in social practice, the researcher may re-describe the properties of a text

that may include a range of understandings it gives rise to. Bernstein (2000) distinguishes between internal and external ‘languages of description.’ Internal language is a reference to the theoretical framework whereas external language relates empirical data to the concepts of the framework. Chouliaraki and Fairclough (1999) state that:

Explanation lies in the interplay between the two languages of description and it can be seen as a process of translation, whereby the (internal) conceptual language is used to re-describe specific material, such as texts. It is an interpretation of the text in the terms of a theoretical framework, which crucially involves making invisible categories become visible.

(Chouliaraki and Fairclough, 1999: 21).

CDA looks at a relational/dialectical logic that assesses how a discourse moment works in a social practice taking into consideration effects on power struggles and domination. For example, the interpretation of texts ideologically is not of understanding the text, but by locating the text in a social practice by reference to the category of ideology, it becomes part of the explanations. The explanation is that aspect of social practice that makes critique possible. In terms of understandings, the researcher’s own understanding may be subjected to critical analysis. I have openly declared my understandings in Chapter 1 of the thesis. In terms of the critique of the study, it dealt with a transitive critique of how the participants discursively constructed their experiences of the phenomenon. It also dealt with how the participants believed they in turn were discursively constructed by others during their experiences of learning the clinical aspects of a PBL medical curriculum and the subsequent clinical environments.

6.6.5. Ethical considerations for the study

My study involved students from the NRMSM, University of KwaZulu-Natal. I therefore had to gain authorization from the medical faculty to conduct my research. A letter detailing the purpose of my study was sent to the Dean of the NRMSM (Annexure P). At the time of the interviews, the participants were working as community service officers in

rural hospitals in KwaZulu-Natal. A letter of authorization was sent to each of the medical superintendents of the hospitals (Annexure Q). All the participants who were involved in my study did so on a voluntary basis. Informed consent letters (Annexure K) were given to each participant.

The participants were also advised that they had a right to withdraw from the study at any given time at their own free will. Confidentiality and anonymity was guaranteed during the interviews, the analysis of the data as well as in the writing of the thesis. Pseudonyms were used to give each of the participants an identity. The pseudonyms were discussed with each participant prior to me allocating it. The pseudonyms were used throughout the transcripts as well as the thesis. The process of interviewing, transcribing of the interviews, and analysis of the data that was conducted by myself and reporting of it was clearly transparent in nature. Copies of the transcripts were given back to the participants for their validation. Accurate records of all the transcripts including the audio-tapes and confidential documents were kept in a secure place during the working of the thesis. On completion of the thesis, these documents were handed over to the School of Adult and Higher education for safe-keeping for five years as required by UKZN policy.

6.7. Conclusion

Returning to the third research question of the study as well as the phenomenographic outcome space that reflected the categories of description, an analytical framework that would augment the phenomenographic findings was required. I chose CDA to look at the issues of power in the discourses that emerged from the data. During the phenomenographic analysis, such research critically analyzed how discourses served to construct certain social realities and in this process privileged some ways of viewing the phenomenon over others. I therefore called on the theories and methods of CDA to more fully explore the construction of the participants' relationship with the curriculum and the clinical contexts. The next Chapter details the use of CDA in illuminating the emergent discourses from the phenomenographic findings. In so doing, it appropriates the relevant theories in an attempt to understand why the participants' constructed a relationship with the clinical environments in the way that they did.

CHAPTER 7: DATA IN SEARCH OF A THEORY

7.1. Introduction

This Chapter details the critical discourse analysis of the categories reflected in the phenomenographic outcome space (Chapter 4, section 4.1.). Chapter 4 and 5 reflected the phenomenographic analyses that dealt with the first and second critical questions of the study. The intention of this Chapter is to address the third critical question of the study that asks why the participants constructed a relationship with the phenomenon and the subsequent clinical environments in the way that they did. The phenomenographic outcome space was imbued with issues of racism, discrimination, marginalization and labelling. It became evident that it would be necessary to call on an analytical framework that would deal critically with the emergent categories of the ‘Guinea Pig Identity,’ ‘Knowledge Construction and ‘Professional Identity.’ CDA was used to unpack the discursive power that was immanent in these categories and in so doing addresses the third critical question of the study.

The Chapter is divided into three sections representing the three categories that have been identified from the phenomenographic outcome space and which are now analyzed discursively. In the discussion of each discourse, I have called on substantive theories that serve to illuminate and explain the particular discourse in terms of why it was used

and how it functioned within the social practices of the clinical environments of the study. In so doing, my intention was not to formulate a theoretical model to establish the effect the discourses had but to call on an established theory which seemed best to account for the particular discourse being analyzed. Widdowson (1998:137) in his critique of CDA indicated that, “CDA is not the systematic application of the theoretical model, but a rather less rigorous operation, in effect; a kind of adhoc bricolage which takes from theory whatever concept comes usefully to mind.” I believe that the use of various substantive theories in this Chapter does not fall into the bricolage trap but rather serves to elucidate the discourses in terms of broader theory.

The first section of this Chapter deals with the ‘Guinea Pig Discourse.’ Gramsci’s Hegemony Theory was found to be the most appropriate means to interrogate and problematize this discourse. The next section describes the discourse of ‘Knowledge Construction’ and uses Bernstein’s Theory of Knowledge Structures to show how the different expectations of a traditional versus a PBL construction of medical knowledge affected the participants’ experiences. The third section discusses the ‘Professional Identity Discourse’ and Identity Theories are called upon to show how an emerging sense of clinical competence and professionalism across the range of clinical contexts was achieved in the face of these power relations. The progression of the participants’ professional development is plotted according to Reid and Petocz Professional Entity Theory (2004) which was introduced in Chapter 5 and the reasons for these levels are unpacked.

7.2. The Guinea Pig discourse

The phenomenographic category of ‘The Guinea Pig Identity’ emerged from the participants’ conceptions of feeling like they were a part of a curriculum experiment since they were the first cohort of medical students to register for the PBL curriculum at the NRMSM. They reported being labelled as ‘guinea pigs’ when they undertook the clinical education modules during year three to year five of the curriculum (Diagram 1 levels of experience, Chapter 1, section 1.2). Chapter 4, section 4.2.1 described the

participants' reports of being labelled by the medical ward staff. Their reports also indicated that they were constantly compared with the traditional curriculum students during the ward rounds¹.

During the participants' final year of study, they were grouped together with the traditional students, who, according to the participants' reports were perceived by the consultants to be better than them in terms of their theoretical knowledge. The effects of being referred to as part of an experimental first cohort were exacerbated by practices of racism, marginalization and discrimination.

In adopting a critical discourse lens to these issues, it is possible to understand how the 'Guinea Pig Identity' impacted on the participants' experiences of the phenomenon and also to determine what effect such a discourse had on their construction of a relationship with the subsequent clinical environments. I wanted to explore the practices that took place in the wards that led to the participants' feelings about being called 'Guinea Pigs.' I also wanted to understand how and why issues of racism, marginalization and discrimination were inferred and reinferred in the routine structures of the everyday practices across the clinical contexts of the study. These practices may be collectively referred to as hegemonic practices since the participants who were subjected to these practices did not revolt against them but accepted the values of the consultants who subjected them to such practices, as common sense and obvious.

The participants were rarely conscious of being subject to hegemony and rarely overtly referred to this in the interviews. At most they had a broadening sense of limitation and a vague hope for an alternate arrangement in the years that they undertook the clinical education modules. They however did see themselves as having willingly consented to an educational system and therefore expressed an inability or unwillingness to address this

¹ Ward round: when the consultant and Medical ward staff accompanied by the students proceed from bed to bed reviewing each patient's charts and condition, performing relevant examination if necessary. This may be followed by discussions around the patients' medical condition regarding aetiology, pathology, treatment, investigations required etc. It is at this stage of the ward round that the consultants may ask the students any questions pertaining to that particular patient's condition and related theoretical knowledge of the disease/condition.

sense of being marginalized, alienated and disempowered at the risk of it affecting their success as students. The data indicates that the pedagogy of the clinical aspects of the PBL medical curriculum assumed hegemonic practices in the hospital wards during the participants' clinical education modules. Princess describes her experiences of racism during the final year in the wards by stating that:

The medical school has gone through so many issues of racism and in our final year that was the height of the racism struggles. In my group there were five black females and we were always being called to the MSRC¹ office and asked about racial incidents in the wards. I remember complaining about the one wicked consultant who told us to just sit next to the fan and not to fall asleep because she was busy with the 'other' students.

(Princess: 01)

The PBL medical curriculum promised equal opportunities to all medical students regardless of race, culture, gender or social-economic position (NRMSM Faculty Handbook, 2001). The participants' reports however, reflected a contradictory practice that occurred in the wards. This may be evidenced by Joseph's experiences of racism and marginalization during the ward rounds when he stated, "What made it difficult for us to understand was why we were sidelined? Was it because of our colour or was it because we were in the new curriculum?" (Joseph: 06). There was thus a feeling of uncertainty of whether the marginalization that they experienced was as a result of racism or because they were from the PBL curriculum. Cindy (03), Kenneth (08) and Joseph (06) claimed that they had experienced racism first hand during their surgical rotations in final year. These were all Black participants who reported such incidents of racism. Although the focus of this study was not envisaged to include racism, the effects of this discourse on the participants' experiences of the phenomenon could not be ignored.

From the data it is evidenced that certain race groups felt less privileged in terms of learning opportunities. Cindy (03) stated that, "The White and Indian students definitely got better opportunities in terms of learning." It appears that the medical staff in the

¹ MSRC: Medical Students Representative Council

wards favoured the White and Indian students. It was unclear what race group the medical staff belonged to. The participants did not divulge who the people responsible for the hegemonic practices were; they merely stated that they had accepted such forms of racism and discrimination during their ward rounds. Joseph (08) stated that, “There was nothing you could do about it. You needed to get the logbook signed off.” This reflected a passive acceptance of the discriminatory practices that they experienced as undergraduate students in a PBL curriculum for fear of being victimized or failing the assessments.

Post-apartheid South Africa drafted numerous policies for Higher Education Institutions to adopt in its attempt to rectify the imbalances of the past apartheid government. The NRMSM was one such institution that opened its doors to the new policies and declared an approximately seventy percent intake of previously disadvantaged students (NRMSM Faculty Handbook, 2001). During the same time period, however, the number of Black academics in the medical school and the number of Black consultants in the wards did not increase proportionately to match the number of Black students admitted. Racial desegregation during the post-apartheid years did not occur to any great extent in the academic or clinical environments that the participants were exposed to during their undergraduate training.

The average age of the participants during the clinical years as students (years 3 to 5 of the programme) was twenty-one. We can therefore assume that they would have had very little personal experiences of the apartheid regime. However, while 1994 brought on a new democratic government, the data indicated that racialised social structures clearly remained after this date. The participants appeared knowledgeable about racism and could identify it in the wards. Maybe they came into the University with a framing that they were disempowered because of their colour and felt even more disempowered in the wards when they were constantly being labelled negatively and told that they were from an inferior curriculum.

The issue of racism at the NRMSM during 2004 and 2005 was a serious one. Allegations of racism were reported by the student body at that time (comprising a combination of traditional and PBL students) to the Dean of the NRMSM. The University immediately appointed an external private company to execute a forensic audit in this regard. My study is not concerned with the findings and outcomes of the forensic audit but it should be noted that the participants were exposed to such an investigation during their clinical education modules. It should be further noted that Princess (01) reported feeling the tension of racist struggles during that time and therefore we can deduce that racism did have an impact on the participants' construction of a relationship with the clinical environment when they were undergraduate students.

Despite the University's implementation of institutional redress policies such as a new admissions policy as well as the forensic investigation regarding the racism allegations, the participants in 2008 reported that racist practices were still prevalent in the clinical environments. It appears that the medical consultants in the wards assumed a 'wall of impenetrable privilege and authority' that went unchallenged by the participants (Jansen, 2004). The theme of inherent racism and discrimination of the participants by members of the hospital clinical staff is prevalent across the thesis, and I believe that this issue led to a contextual limitation of the study. As a researcher I found it difficult to distinguish between the reported attitudes of racism and the reported negativity towards the new curriculum by the hospital ward staff. I therefore called on Gramsci's Hegemony Theory to interrogate such issues of racism, discrimination, marginalisation and alienation that were reported by the participants.

“Gramsci's Theory of Hegemony posits that dominant social groups impose their supremacy over weaker groups, either by overt coercion or by using more intellectual means of realizing their dominance” (Ndhlovu, 2006: 305). Historically hegemony was a concept used by Marxists to indicate political leadership of the working class. Gramsci suggested that capitalism maintained control, not through violence or political coercion, but ideologically through a hegemonic culture in which the values of the bourgeoisie became the commonsense values of all people. The working class identified their own

good through the good of the bourgeoisie and thus maintained the status quo rather than revolt against it (Gramsci, 1971).

According to Gramsci, hegemony occurs when people who are being marginalized do not rebel or criticize but actually take on what suits the powerful to be obvious or commonsense. Power is given to those who control, teach and police the different forms of knowledge. In my study 'disciplinary power'¹ was accorded to the medical staff who were specialists in their own fields of knowledge. Students want to register at Universities and medical faculties because they would like to become members of such specialist communities and subsequently access the power that these 'discipline experts' bestow on them, but the study data suggests that the positioning of the participants as 'guinea pigs' made it particularly difficult for them to navigate access to the specialist community. The participants made frequent reference to feelings of alienation and marginalization by virtue of their mentorship in the PBL curriculum.

Due to the hierarchical nature of the medical school and hospital management structures, the medical staff in the study assumed a type of 'positional power' that had been granted to them because of their relative positions and duties (Foucault, 1979). In the study, the participants reported that they were made to believe that the medical ward staff were the figures of authority and that they determined what was right and what was wrong, what was normal and what was deviant. Foucault (1972) refers to such belief systems that gain momentum as people accept the particular views of such systems as forms of covert power. From the data it is evident that the participants' ways of seeing the world and normalizing them as being the truth were defined by what the medical ward staff told them.

Kenneth shows us how he was accepting of his position as a 'guinea pig' by simply taking on the values and beliefs of the consultants as being common sense.

¹ disciplinary power: refers to power associated with being experts in the field.

He stated:

Yes, these perceptions that the consultants had of us were that we were guinea pigs and that we were not capable. Some people just had preconceived ideas that the new curriculum students were like this and there was nothing we could do about it. We had to just accept what they said about us. Only time would prove them wrong.

(Kenneth: 08)

Kenneth's description of his acceptance of such a hegemonic relationship with the consultant is reflective of Tollefson's (1991) view that hegemony may be achieved through spontaneous consent by the participants to the life that the dominant group imposes onto them. According to Gramscian theory, hegemonic relationships are not as a result of contractual decisions and therefore transformations of identity may occur. In the data, it was evidenced that the participants' transformed into a 'Guinea Pig Identity' as a result of the hegemonic practices they experienced, however they did indicate a sense of wanting to overcome such dominant positioning. Cindy describes how she was able to overcome such dominant ideology of the medical ward staff in the following quotation:

If there's one thing the consultants who assumed that we were no good did, it was to make us prove our worth. Even though they demotivated us in the wards by calling us names, in fact that motivated us to read more because we didn't want to go back the next day to be told, the 'guinea pigs' class again!

(Cindy: 03)

From the data we can see that the participants willingly took on their lower hierarchical positions as 'guinea pigs' in the wards but they tried to work harder in terms of their theoretical knowledge to gain such expertise and be given recognition as part of the medical fraternity. They wanted to prove their worth as medical students despite the medical ward staff's scepticism about the PBL curriculum.

According to Ndhlovu (2006), the ‘methodological’ and ‘pragmatic’ premise of Gramsci’s Theory was based on a supremacy that manifested in two ways: firstly, through domination and secondly through intellectual and moral leadership. The main argument in Hegemony Theory is that institutional policies and practices appear to be ‘natural’ or ‘commonsense’ and therefore people do not question the assumptions being made by them. This was reflected in the data when the participants accepted the medical ward staff constructions of them as a matter of reflex because their very own identities were formed by the dominant framework of the consultants, to the extent that they became powerless to do anything else. Tom (09) highlighted such powerlessness by not criticizing the power imbalances between them and the medical ward staff :

It was stressful because you were not motivated by the people who were teaching you in the wards because they were always discouraging you and harassing you and picking on you because you were from the new curriculum. This was something that we just had to deal with and contend with right up until we qualified. We were powerless in the wards.

(Tom: 09)

According to the Gramscian Theory of Hegemony, it is usual for the ruling class of society to be at the same time, the ruling intellectual force. In the case of the study, the participants were at a preliminary stage of their professional identities and therefore became subject to the “dominant class’s machinations and caprices” (Ndhlovu, 2006:311). From the above excerpt it is evident that the participants felt powerless during their clinical education ward rounds. It seems that despite the medical school’s attempts to address matters of racism and discrimination, the participants felt that they were not being heard and that it was ineffective.

Institutions usually support elite interests when such dominant ideologies and principles are challenged so that they are able to manage the debate and maintain some sort of social stability (Ndhlovu, 2006). This can result in the less powerful and less privileged groups

being marginalized. This was the experience of this study's participants who claimed that they were rendered powerless by the medical staff in the wards.

The hegemony served at times to silence them:

During the ward round, the consultant would tell 'us' (PBL students), to just stand and listen. The discussion would go on and he would make comments like, "You wouldn't know this because you didn't get time in the dissecting hall¹" or "You don't have the proper Chem Path² background." We would just stand there and listen to him.

(Gary: 12)

From the above excerpt we can see that the participants, who were the subordinate social group, unknowingly consented to the hegemonic practices of the 'powerful' consultants because they felt that they could not question the prevailing values and the attitudes due to unequal relations of power between them and the consultants. In the above case, hegemony occurred as a result of active domination by the consultants who were in a position to 'frame' the way the participants responded to their own lived experiences. The consultants assumed power over the participants by representing themselves as having agency and thus were able to completely internalize the act of domination and render it a natural phenomenon. When this happened there was no need for external coercion. This may be the reason why the participants did not revolt against such power but assumed that the hegemonic practices were commonsense values that typically occurred in the clinical contexts.

The act of being silenced and marginalized can be explained by recourse to the insights drawn from theories about hegemony that argue that hegemonic forces usually impose their dominance by denying the weaker groups a say in the decision-making process (Gramsci, 1971). This may also be explained in hegemonic terms, where the forces of

¹ Dissecting hall: refers to the laboratory where human cadavers are preserved and dissected for the teaching of Human anatomy.

² Chem Path: refers to the discipline of Chemical Pathology that is the study of disease using chemical means and analysis of bodily fluids

domination and exclusion are seen to be operating through hidden intellectual means that are not easily discernable. Hegemony, thus, cannot be directly observed. The participants did not blurt out that they were subjected to hegemony. It was identified in the discourses of the participants as they described feelings of being marginalized and silenced.

Despite the hegemonic practices that the participants experienced, they wanted to prove a point to the world of medicine. This indicates some degree of confidence that they achieved in their clinical skills abilities. The data indicated that they were confident and competent at procedures and physical examination techniques that they learned in the Skills Lab (Chapter 4, section 4.2.2.1). As reported earlier in the thesis, the Skills Lab was experienced as a safe, non-racial, non-discriminatory and non-threatening learning environment where they were able to gain confidence and competence in clinical skills. It was this sense of confidence and competence that they were able to transfer to the real clinical setting when it was required despite the racism, marginalization and discrimination that they experienced. The construction of the participants as ‘guinea pigs’ was thus experienced as a hegemonic practice. In the next section, I will argue that such hegemony arises in part from discourses of knowledge construction.

7.3. The discourse of knowledge construction

The ‘Knowledge Construction’ category in the phenomenographic outcome space emerged from the participants’ conceptions of how they constructed their medical knowledge through a PBL curriculum. While the interviews related to the participants’ experiences of the clinical aspects of their learning, inevitably they also referred to the other parts of the curriculum. This was perhaps especially inevitable given PBL’s purported integration of theoretical and practical knowledge. The data thus raised issues about the participants’ construction and integration of theoretical medical knowledge and their ability to apply this knowledge to the real clinical setting.

Critical researchers and theorists claim that knowledge is socially constructed. In order to make this claim, the social world that we live in has to be understood as being

constructed through social interaction and dependent on context, history, culture and custom. This social world is symbolically constructed in the minds of individuals who do not stand 'before' it but live in the 'midst of it.' McLaren (1986:312) states that "when critical theorists claim that knowledge is socially constructed¹, they mean that it is the product of agreement/consent between individuals who live out particular social relations (class, race, gender) and who live at particular junctures in time."

It is only when one is in the middle of this socially constructed world that one is able to ask, "how and why knowledge gets constructed in the way that it does, and how and why some constructions are celebrated by dominant culture while others are not?" (McLaren, 1986: 312). Some of the forms of knowledge in this study were found to have more power than others, and the data indicates that the knowledge construction processes underpinning the participants' learning experiences in PBL pedagogy were largely devalued in their interactions with the consultants in the wards.

Also, according to critical theorists certain types of knowledge favor certain gender, class or race interests. This lends itself to the following questions that McLaren (1986: 312) asks, "What interests does this knowledge serve? Who gets excluded from the knowledge? and who is marginalized?" The issues pertaining to the construction of knowledge in the context of this study were about the relationship between the knowledge that was constructed at the medical school and that constructed during the subsequent clinical education modules at the different levels; and how to account for some knowledge having higher status (that constructed through the traditional medical curriculum). The use of the CDA lens at this stage of the findings shifted the study from a description of knowledge construction to a questioning of the power accrued to certain knowledges.

The participants reported that they first encountered clinical medical knowledge in the Skills Laboratory where they were trained in clinical and medical skills in a simulated

¹ socially constructed: this social constructivist position can be in a weak or strong form. Many social-constructivists acknowledge a realist realm which impacts on the ways in which we socially construct our experiences of reality.

environment on specialized models and mannequins (Chapter 1, section 1.3). The phenomenographic descriptions and interpretations of the participants' experiences in the Skills Lab are detailed in Chapter 4, section 4.2.2.1. The participants reported that the consultants in the wards expressed negative views regarding their training in the Skills Lab. Gary stated that, "We were labelled as students who learned medicine on dummies [models in the Skills Lab]" (Gary: 12).

The participants indicated that the consultants in the wards had a negative perception that they did not know how to treat or examine real patients because they spent too much time in the Skills Lab learning medicine on simulated patients and models. The participants, however, indicated that the Skills Lab provided a safe learning environment for them to master the necessary physical examination techniques, communication skills and the clinical/emergency procedures of the profession (Chapter 4, section 4.2.2.1).

The participants reported that the clinical knowledge that was constructed in the Skills Lab enabled them to make the transition to the real clinical setting where they were exposed to a negative clinical environment. The transfer of skills and knowledge that they gained in the Skills Lab to the real patients in the wards was undertaken without assistance from the medical ward staff (Chapter 4, section 4.2.2.2). Although the participants were able to achieve a level of confidence and competence in their clinical skills, they reported that the consultants believed that they had not achieved a sense of what medicine was all about. The following excerpt from Gary's experience highlights the consultants' confusion in this regard when both cohorts (traditional and PBL) were in the final year together.

The skills that we learnt in second and third year in the Skills Lab, like abdominal exam and neurological exam, made a huge difference when we did ward rounds with the old curriculum students. During the ward rounds the consultant would be teaching all the students at the bedside and would do these skills again. We felt advantaged over the old curriculum students because we had done them and were even examined on them in the OCSE so it was just revision for us.

(Gary: 12)

It was evident to the participants that the consultants did not know what clinical skills had been developed in the PBL curriculum at the Skills Lab, but despite this they made judgments of and criticized the participants for learning medicine on ‘dummies’ in the Skills Lab. From the above excerpt we can see that the participants felt at an advantage clinically because they had already gained the experiences of learning and performing the physical examination techniques previously (on simulated patients and on each other) in the Skills Lab. Their learning was further reinforced by the clinical assessments that they undertook in the Skills Lab in the form of the OSCE (Chapter 4, section 4.2.2.3). The fact that they had passed assessments on those clinical skills (procedures and physical examination techniques) boosted their confidence and competence levels.

The participants stated that they were not affected by the consultants’ negative remarks about their clinical skills abilities and the fact that they had trained on ‘dummies’ because they could see the benefits of being trained in a simulated clinical environment prior to the clinical education modules where they were exposed to live patients. They indicated that the PBL pedagogy and the training in the Skills Lab enabled them to transfer their clinical medical knowledge to the real clinical setting even during their clinical assessments in the wards (Chapter 4, section 4.2.2.4).

The question of whether PBL and training in simulated clinical environments works has been asked by medical professionals throughout the world and was discussed in Chapter 2. Medical educators nationally and internationally have been researching whether PBL has worked as a methodology for developing active, independent learners, divergent thinkers and good communicators. Bligh (1995: 120) advocates that, “The product of a PBL curriculum will be a doctor well versed in group problem-solving, capable of working well independently, competent at using literature and statistical databases to retrieve information and is confident in his own professional ability.” Gary (12) stated that, “The consultants said...we were not going to make good doctors.” This confirms that the medical staff in the wards had a negative perception of the PBL curriculum.

According to the participants the biggest concern and criticism in terms of knowledge construction in the PBL curriculum that was raised by the consultants in the wards, was the issue of theoretical inadequacy pertaining to their knowledge of the basic sciences. The participants reported that they were constantly being negatively compared to the traditional curriculum students in terms of their lack of basic sciences knowledge:

The old curriculum students did basic sciences over three years. For example they did an entire year of Anatomy, Physiology, Pathology, etc. We had it all combined in the problems from first to third year. We were looked down upon because of this.

(Patricia: 04)

In the traditional curriculum, Anatomy was studied in parallel with Physiology and formed a basis for the subsequent study of Pathology and the other clinical disciplines. With the PBL curriculum that adopted an integrated approach to learning, the problems in the first three years of the programme were designed to be vehicles for the learning of the above-mentioned basic sciences disciplines. As discussed in Chapter 1, section 1.2. It was the responsibility of the Theme design group to integrate all the required objectives of the basic sciences into the clinical cases for each of the Themes. The integration was supposed to have occurred in a spiral manner that introduced basic science concepts at an early stage with the vision that it would be revisited at greater depth at regular intervals across the entire curriculum (NRMSM Faculty Handbook, 2001).

As reported by the participants, they were of the opinion that many of the consultants in the wards had little or no involvement in the design and development of the PBL curriculum during the first three years of the programme. It may therefore be the case that the consultants were unaware of what basic sciences had in fact been covered by the participants in the small group tutorials at medical school. The consultants expressed serious concerns about the lack of basic science knowledge and assumed that the participants did not have a foundation in medicine. According to the participants, the consultants felt that the PBL curriculum did not prepare them adequately for the clinical

setting via a strong theoretical foundation and therefore it was not ‘good enough.’ Jane reported that she knew exactly why the consultants did not like the new curriculum, “it was because we were no longer required to perform complete dissections of the human body and we were not taught Biochemistry, Microbiology, Clinical Pathology, Virology etc.” (Jane: 15).

The issue of the lack of basic sciences knowledge construction in the PBL curriculum can be further endorsed by Mary’s experience, first presented in Chapter 4 (4.2.2.5):

I remember this time in year when I presented a case on pneumonia and the questions that I got asked (of course, we hadn’t done that much Microbiology, we had just touched on it in year), but the question was “name all the organisms that can give you a cavitating pneumonia? Oh, I just stood there and laughed because I only knew klebsiella. The rest of the discussion, the consultant just blurted, “I don’t know why you don’t know this! This is basic year stuff, How are you going to be doctors?”

(Mary: 14)

The concern of adequate coverage of the basic sciences in the PBL curriculum is raised in literature. The two main concerns on PBL are its ability to provide adequate coverage of the curriculum content and the time it requires for both faculty and staff (Barrows, 2000; Dolmans and Schmidt, 1996). However, Dolmans and Schmidt (1996) also claim that PBL curricula encourage the integration of knowledge from different domains for example, biochemical and medical domains which is reported as an advantage of PBL. They go on to say that PBL students should be able to better integrate the basic sciences knowledge when they encounter similar problems in the real clinical contexts. I argue that my study revealed that this integration did not occur because the participants themselves acknowledged the limitations in their knowledge of the basic sciences. Shaun confirmed his lack of theoretical knowledge by stating, “when it comes to discussing the theory behind it, I wasn’t confident about whether I know enough about the topic.”

The question that needs to be asked regarding the knowledge construction of the basic sciences was whether all the basic sciences objectives were in fact covered in the PBL cases during year one to three of the curriculum. The second question is whether the participants were able to elicit all the basic science objectives through the small group tutorial process at medical school. The data revealed a sense of uncertainty around these issues on the side of the participants. They were not in a position to comment on whether the core knowledge of the basic sciences was covered during the five years of the programme or not. To date there has been no research studies that provide answers to the questions that I have raised above although further curriculum change has already been implemented in 2010 to increase the basic science content of the first year. (This is discussed further in Chapter 8 of the thesis).

When one looks at the structure of the PBL medical curriculum at the NRMSM (Annexure R) and the description in Chapter 1, section 1.2, one can determine that the basic sciences feature in the clinical paper cases of the various Themes. However, the theoretical inadequacy that was reported by the participants may have been attributed to the fact that all the basic science concepts were presented in the context of clinical problems from the first year to the third year.

This might have resulted in the participants paying more attention to the clinical aspects of the problems and neglecting the underlying basic sciences knowledge. Another contributing factor to the lack of basic sciences knowledge construction was that, during years three and four of the curriculum, the participants attended their clinical education modules at the hospitals. These were outside the PBL Themes and tutorials that ran concurrently at the medical school. Niki highlights this incongruence in her construction of the theoretical knowledge by stating, “I was in a clinical block that was completely unrelated to the theory we were doing in the Themes. I was doing Paediatrics in the Block and doing Body in Motion in the Theme...totally confusing.” (Niki: 11). These feelings of incongruence and misunderstanding may have impacted negatively on the participants’ construction of the theoretical aspects of their medical knowledge and their

ability to integrate such knowledge of the basic sciences with the clinical problems they were encountering in the real clinical setting.

The consultants' views that the participants had a lack of basic sciences knowledge in the PBL medical curriculum, as reported in the interviews, can be conceptualized through a consideration of Bernstein's account of knowledge structures. Bernstein's work on the theorizing of pedagogic communication in terms of power and control is directly related to my study where a traditional discipline-based medical curriculum was in place for almost fifty years and was replaced in 2001 by a PBL medical curriculum.

Bernstein (2000) came up with a specialized language of classification and framing to theorize and question whether pedagogic communication was influenced by patterns of domination that were internal to education and if so, what made this possible (Muller, 2008; Gamble, 2006). According to Bernstein (2000), classification is a reference to the level of insulation between categories such as disciplines or bodies of disciplinary knowledge. He described the relationship between such categories in a pedagogic setting and their ability to establish and maintain the boundaries that mask their identities. He claimed that a weak classification occurs when there is a 'weak' maintenance of boundaries and insulation between discourses. As a result there is a blurring of boundaries which he represented by the symbol C-. A strong classification occurs when there is a 'strong' status of the disciplinary discourse and a high level of insulation between the categories of discourse. This strong classification is represented by the symbol C+ (Bernstein, 2000).

The issue of status is paramount to the study context. In the traditional discipline-based curriculum, medical disciplines like Anatomy, Physiology etc had strong classification in the curriculum. The PBL curriculum, however, reflects a weak classification of the disciplines in that they were all integrated into the curriculum (see Chapter 1, section 12 for the structure of the PBL curriculum). The participants in the study, never having studied in a traditional curriculum where subjects were organized along strong classification lines, could not understand the vehemence of some of the dismissive

comments that were made by the consultants in the wards. The Bernsteinian understanding of classification of subjects therefore helps to account for the dismissive discourse that was reported by the participants regarding the negative perceptions of the PBL curriculum.

Framing, in Bernsteinian terms, refers to the locus of control in pedagogic practices. It is a reference to who has control over the selection, sequencing, pacing and the criteria that is used to evaluate knowledge. The principles of framing regulate how the discourse is to be transmitted and acquired in the pedagogic context (Bernstein, 2000). The framing is strong in a pedagogic setting when the teacher has total control over the selection, sequence, pace and evaluation criteria. Bernstein (2000) represented such strong framing with the symbol F+. He claimed that a weak framing occur when the learner has control over such issues of selection, sequence, pace and evaluation criteria of the pedagogic interaction which he represented with the symbol F- (Bernstein, 2000).

The traditional didactic lecture in the traditional curriculum at the NRMSM was an example of strong framing F+. In this format, the lecturer was responsible for determining what was to be covered in the forty five minute lecture and went about delivering such a lecture at his/her own pace with relatively little input from the students (usually in a large class of two hundred students).

In the PBL curriculum, the student was accorded far more control over his/her own learning. As described earlier in Chapter 1, the PBL tutorials were facilitated by non-experts who engaged the students to arrive at their own learning goals and subsequently research them in order to solve the problems that were represented to them in the paper cases. This process requires self-directed learning techniques by the students who determined their own pace in researching and mastering the knowledge. Therefore in the PBL curriculum a weaker framing F- occurred.

The participants of the study, who were exposed to such weak framing during the first three years of the curriculum, discursively constructed their knowledge as being their own. They assumed their own power in making meaning of the medical knowledge. The interview data provided evidence of the participants reflecting on their engagement with particular problems and developing emergent knowledge about the relevant procedures. The data revealed that this was at odds with the more hierarchical expectations of the medical ward staff. The participants indicated that consultants would constantly silence the participants during the ward rounds and tell them that they were in control of the teaching and learning process. This posed a challenge for the participants who were used to a weaker framing during the facilitation tutorials at medical school during the earlier years of the programme.

It is in this regard that the Bernstein theory of classification and framing provide a means to link the empirical evidence from my study to a theoretically generated network of related concepts that enabled me to expose how such power and control as mentioned above that took place in the wards, translated into principles of communication that differentially regulated forms of consciousness with respect to their production and the possibilities of change. Bernstein's pedagogic device that enables and legitimizes such pedagogic discourses that occurred in the wards can be used to examine how they were established and maintained. The pedagogic device is mediated hierarchically through distributive rules, recontextualisation rules and evaluation rules (Bernstein, 2000).

The owners of the pedagogic device in the wards were the consultants who constructed their power discursively and established their own representations through the use of the above rules. As a result they were able to control what counted as legitimate knowledge. The consultants used the distributive rules to determine who had access to clinical knowledge in the wards. Using their discipline power they were able to distribute their medical knowledge to the different groups of students (traditional and PBL students). The data revealed that on many occasions the consultants limited the access to medical knowledge to the participants of the study. This can be further explained through the use of Bernstein's recontextualisation rules that serve to regulate specific discourse

formulation. Recontextualisation rules construct the classification and framing of pedagogic discourses that I have described earlier. The data revealed that the consultants who were trained in a traditional curriculum and who taught in the traditional methodology for most of their lives operated within strong classification and strong framing of the medical disciplines and therefore were dismissive of the structures of the PBL curriculum.

Bernstein's theory of knowledge structures is relevant when looking at traditional versus the PBL curriculum. Bernstein's work reflects the nature of change between the traditional curriculum to the PBL curriculum. The theory helps one to understand how the curriculum structures emphasized certain knowledge, how it was taught and learned and who was responsible for driving the process of learning. Bernstein named two types of curricula, a ¹collection code type and an integrated code type with units (a period of time) making up both code types. In the traditional curriculum, for example, one unit was Anatomy whilst another unit was Physiology.

In the collection code type of curriculum (traditional curriculum) there were distinct boundaries of the units and each unit had a high degree of autonomy. For example, only Anatomy was taught in the Anatomy unit whereas in the integrated code type (PBL curriculum), blurring of boundaries occurred and the content from each of the units overlapped. According to Bernstein, this kind of pedagogic theory is likely to be self regulatory and allows for students' rights and status to be increased. This is in line with the philosophy of the PBL curriculum.

The power relations that the participants experienced in the wards created legitimized and reproduced boundaries. From the classification and framing perspective, it was clear that the PBL curriculum favoured a weaker classification (C-) that resulted in the blurring of boundaries of the basic science knowledge whereas the traditional curriculum was made up of self-contained disciplines through stronger classification (C+). The framing of the

¹Collection code type of curriculum: The traditional discipline-based curriculum was a collection code type because of the distinct boundaries that occurred between each of the disciplines of Medicine-See structure of traditional curriculum (Annexure A).

PBL curriculum was also weak which resulted in the students being in control of the pacing of the curriculum (student-centred) while the traditional curriculum was very lecturer driven and didactic in nature. (F+). This mismatch in knowledge construction may, in part, account for the experiences of marginalization reported by the participants.

The classification and framing of the PBL curriculum was perceived by the consultants as not meeting the required standards according to the participants in the study. The participants themselves acknowledged their own gaps in the theoretical knowledge of basic sciences. However, with regards to the clinical competences, they felt that they were adequately confident and competent to perform the relevant procedures on real patients.

In restructuring and reorganizing the medical curriculum at the NRMSM, the curriculum developers weakened the classification between disciplinary boundaries with a move away from a collection-type curriculum (the traditional curriculum) toward an integrated-type curriculum model (the PBL curriculum). In terms of the framing of the curricular content in the new PBL curriculum, this was modified by rendering disciplinary principles of curricular regulation subordinate to external principles of regulation which repealed the power and control that individual disciplines had previously had. Such a move had major consequences for the forms of organization and power structures within NRMSM. The individual department/disciplines no longer had total control over individual modules, but had to integrate their discipline content into the PBL format. A School of Undergraduate Medical Education was created to organize and administer the new PBL curriculum. The faculty thus underwent a major shift from collection-type to an integrated-type curriculum.

At the NRMSM the traditional curriculum was a collection-type curriculum and the power and authority remained within the discipline department. The principles that governed the selection, sequencing and pacing of the content were governed within each of the disciplines. The PBL curriculum on the other hand was an integrated type of curriculum and called for staff from the different disciplines to unite in a common

endeavour and thus forming horizontal relationships. This resulted in more complex patterns of power and authority. A strong social network was required with the formation of collegial sub-communities to question the goals of the programme. It was also required of the staff to agree on what should count as valid/core knowledge and why and how it should be recognized in the programme. According to Moore (2002) the staff in a PBL curriculum needs to have a common epistemology of the curriculum.

According to the data, the participants reported that the consultants at the hospitals did not demonstrate a common epistemology of the PBL curriculum. In fact many of the participants reported that the consultants did not understand the structure of the PBL curriculum and critiqued its intentions. However, from the literature it can also be seen that some of the consultants' concerns about theoretical expertise regarding the PBL medical curriculum needs to be carefully evaluated. Muller (2008:25) describes the current debate about the PBL medical curriculum and argues that "its proponents are clearly trying to bend the medical stick towards the contextual side by emphasizing the contextual problem to be solved rather than the disciplinary knowledge to be learned." He describes the designing of a PBL curriculum in terms of having an external contextual coherence instead of an internal conceptual coherence. Table 3 below differentiates between these two curriculum structures at the NRMSM.

TABLE 4: Differentiation between conceptual and contextual coherence in curriculum structure at NRMSM-traditional versus PBL curriculum structure.

<p style="text-align: center;">INTERNAL CONCEPTUAL COHERENCE (TRADITIONAL CURRICULUM)</p>	<p style="text-align: center;">EXTERNAL CONTEXTUAL COHERENCE (PBL CURRICULUM)</p>
<ul style="list-style-type: none"> • High codification – presumes a hierarchy of abstraction and conceptual difficulty 	<ul style="list-style-type: none"> • Segmentally connected where each segment is adequate to a context, sufficient to a purpose.
<ul style="list-style-type: none"> • Vertical curriculum – requires conceptual coherence and sequence matters 	<ul style="list-style-type: none"> • Sequence is of less importance, coherence to context is important
<ul style="list-style-type: none"> • Regulated by adequacy to truth (logic) 	<ul style="list-style-type: none"> • Regulated by contextual adequacy to a specialized form of practice.

Adapted from (Muller, 2008).

Muller (2008) claims that gaps in student knowledge can arise when sequential requirements are ignored. He declared that there are limits to contextualizing the curriculum of a vertical discipline because of the greater conceptual coherence that was required by such a discipline. 'Sequence' should be of the foremost importance in order to maintain the necessary congruence with the vertical spine of the parent discipline. Muller (2008:26) also stated that, "where congruence is scrambled....e.g. by PBL that contextualizes the curriculum in such a way that renders the conceptual sequence invisible or out of the sequence..."

Learning was put at risk when crucial conceptual steps were missed as was indicated by the participants and by the nature of a focus on highly contextualized problems, and in the second instance when chunks of core knowledge were missed completely through the omission of the basic sciences leaving the gaps in the theoretical knowledge also reported by the participants.

The above statement can be used to explain why the participants felt a sense of theoretical inadequacy during the ward rounds of the clinical education modules in years three, four and five. It can also be used to understand why the medical ward staff reacted to the participants' theoretical knowledge in the way that they did. It also indicates that the development of a common endeavour crucial to a shared epistemology of PBL was insufficiently attended to. From the data it was evident that the structure of the PBL curriculum was an issue that directly impacted on the participants' experiences of learning the clinical aspects of the medical curriculum and how they constructed a relationship with the subsequent clinical environments.

The next section on 'Professional Identity Discourse' illuminates why the participants were limited in terms of their professional identity construction across the clinical contexts and shows how and why they were finally able to construct a meaningful Professional Identity and be acknowledged as medical practitioners in the communities that they served.

7.4. The professional identity discourse

The 'Professional Identity' category emerged in the referential aspect of the phenomenographic outcome space. The 'how-aspect' of the outcome space consisted of the participants' conceptions of how they constructed a relationship within the subsequent clinical environments of internship and community service within the South African health care system. The conceptions indicated an emerging sense of professional identity that I argue could be levelled against Reid and Petocz's (2004) Professional Entity' categories of Extrinsic Technical Identity, Extrinsic Meaning Identity and the Intrinsic Meaning Identity (Chapter 5, section 5.3). It is the intention of this section to re-analyze the 'Professional Identity' category in terms of its function, as a discourse, in order to understand why the participants' constructed their professional identities across the clinical contexts of the study at the above-mentioned 'Professional Entity' levels. The intriguing aspect of this development of the professional identity is that it occurred in the context of both a 'Guinea Pig Discourse' and a negative discourse around PBL students' 'Knowledge Construction.' It is therefore important to analyze how and why the participants shaped their professional identities in the presence of such discursive practices.

This section on Professional Identity Discourse is divided into three sub-sections according to the levels of the Professional Entity Model (Reid and Petocz, 2004) to demonstrate the progression of the participants' construction of professional identities through the clinical contexts first as undergraduate medical students, then as interns and finally as community service officers. It is hoped that by plotting the progression of the professional identity, it will be possible to trace how the participants' identities changed over space and time. It is also important to note that the data comprises the participants' reflections back on the above-mentioned three stages of their becoming a professional medical practitioner.

7.4.1. The extrinsic technical identity

It was during the participants' reflections on their experiences of the phenomenon in the Skills Lab and the clinical education modules in the wards that they indicated a sense of emerging professional identity. However, from the data it can be gathered that the level of the professional identity that was constructed was limited to merely performing professional skills of the medical profession when it was required for the purposes of completing the logbook and passing the clinical assessments. They reported that there was no meaningful engagement with the profession especially in the wards where they were constantly labelled as 'guinea pigs' and 'inferior students.'

The data of the study indicated numerous opportunities for the participants to observe professionals calling on the medical professional discourses. As undergraduate students they attended health care visits to facilities such as Hospice, Child Welfare Societies, General Practitioners rooms etc. During these visits they were observers and did not engage with the professionals meaningfully. The Skills Lab was another exposure to the clinical discourses of medicine (Chapter 4, section 4.2.1.2.). This simulated clinical environment created an opportunity for the participants to gain confidence and competence at the various examination techniques and procedures that were required for the profession. Early exposure in the first three years of study enabled the participants to "learn their skills in a relaxed environment" (Sarah: 05). It also "exposed them to the clinical work and was an excellent introduction to the clinical examination" (Tom: 09). The participants were also given opportunities to deal with simulated emergency scenarios that boosted their ability to deal with real emergencies when they were faced with them in the wards. Kenneth (08) stated that he was able to use the "appropriate emergency equipment and deal with emergencies without fumbling in order to save lives."

The issue of identity construction is vital in all learning contexts. The skill of learning is not merely attained through a quest for success and to practice in a profession. It also involves engagement with power dynamics and social interactions that may impact on the construction of an identity. There is therefore an important link between individual identities and the social structures that they find themselves in. According to McKenna

(2004), some of the main influences on identity construction are power and access to resources within social structures. From the above discussion and findings on the participants' experiences of the phenomenon and exposure to the Skills Lab it can be argued that the participants felt a sense of belonging and were able to engage freely in such a clinical environment. They were therefore able to construct their professional identities at a level that reflected competence and confidence of their skills (The Extrinsic Technical Identity).

However during their clinical education modules at the hospitals, the participants reported a sense of alienation, discrimination and marginalization (discussed in the hegemony section). They reported a sense of feeling constrained by the power imbalances and discourses that they experienced in that particular learning environment.

In the ward rounds, when you were degraded because of the curriculum...it created such a negative environment...then there was the logbook so you just had to go the ward and do what you had to do just to pass.

(Tom: 09)

By stating that he felt degraded during the ward rounds, Tom introduced the hegemonic discourses that he experienced in the clinical setting during the clinical education modules. He further claimed that the degradation resulted in a negative learning environment. However, as a student within a particular set of discourses, despite the labelling and degradation by the medical ward staff and their views of him, Tom had to continue to attend the ward sessions in order to complete his logbook that was a requirement for assessment purposes, indicating that he had to maintain the Extrinsic Technical Identity of the profession.

From Tom's report of his experience during the ward round as a medical student, it can be argued that the level of negativity that he experienced must have had a negative effect on his self-identification with the medical profession. This kind of negativity that was created in the clinical learning environment might have compromised his 'sense of being' as a professional. According to Solomonides and Reid (2009), "The Sense of Being

describes a way of thinking about themselves that emphasizes their confidence, happiness, imagination and self-knowledge.” This may be further elaborated on by Princess’s reporting that she felt, “academically inferior to the traditional curriculum students because when we were asked questions, I could see that I had gaps and they (the traditional students) knew the answers.” (Princess: 01). Princess’s sense of alienation from the group because of her lack of theoretical knowledge could have contributed to her not being able to completely identify meaningfully with the professional identity. Wenger (1998) suggests that in order for a student to experience the world meaningfully, they need to ‘negotiate meaning’, and believe that their ‘engagement is meaningful.’ From the descriptions of Tom’s and Princess’s experiences we can argue that their professional identities as students were constrained and they were only able to construct and identify with the technical components of the profession. This may be attributed to their positive learning experiences in the Skills Lab and, despite the negative discourse practices in the wards; the participants were able to achieve a sense of Extrinsic Technical Identity.

The attainment of a professional identity at the ‘extrinsic technical’ level can be further justified by some of the participants’ reports of their positive experiences of being able to perform clinical procedures on patients in the wards confidently and competently. Shaun described his clinical ability in the wards as being at the required professional standards.

When it came to my clinical acumen, I was very good. I was confident and competent to perform any of the procedures on patients when they wanted me to. I was able to make the change from the Skills Lab to the real patients.

(Shaun: 13).

Shaun provides us with a positive indication of his competence and clinical skills acumen. Being able to recognize a change in his clinical competence and being able to interact differently in the real clinical setting may be suggestive of his new felt identity of professional development. He felt capable of identifying with and performing the technical skills that were required of the profession. In the wards he was given the

opportunity to enact in a position that he was not previously allowed to, working with real patients. He was thus able to conceive of himself in a new light. Through this experience he was able to identify with his new position in the medical profession, thus achieving a technical sense of professional identity.

To trace the participants' journey as medical students through the clinical aspects of a PBL curriculum we can determine that as they entered medical school they were incorporated into a new social position of being the first cohort of medical students in the PBL curriculum. When they went to the Skills Lab to perform their professional and clinical skills on the models and simulated patients, they reported gaining a sense of what it would be like to be medical practitioners. When they went to the hospital wards during the clinical education modules they were defined and labelled by the medical ward staff (see Chapter 4, section 4.2.2.2). In addition to the views that the others (medical staff, peers, traditional curriculum students) had of them; they were exposed to opportunities to perform, and enact certain behaviours that were required of the medical profession. These had behavioural implications for the participants who had conceived of themselves as different from when they had started out as being when they first entered the programme. The participants expressed confidence in their ability to do real medical procedures.

This progression in identity construction into the profession can be traced in the data as the participants reflected on all three stages of their clinical experiences. Murray (1998) claims that to become a professional and to take on the discourses of that particular identity, the three processes of exposure, verbal interaction and motivation have to occur. From his argument, it is evident how essential the verbal interaction aspects are for the development of a professional identity. The data indicates that verbal interaction may have compromised the participants' complete acquisition of the professional discourse because, while it cannot be denied that the participants did have opportunities to participate verbally in medical discourses and there was sufficient data to show how this

successfully happened, there was also data to show that they were silenced by the negative comments of the consultants. The data also illuminated issues of mistrust with the negative comments of the consultants resulting in the participants doubting their rights to the professional identity of medical practitioners. However because of their clinical competence, confidence and abilities as medical students (as reflected in the data) they were able to achieve a sense of being a professional at the 'Extrinsic Technical' level (Petocz and Reid, 2004).

7.4.2. The extrinsic meaning identity

The phenomenographic analysis revealed that when the participants graduated and became interns in the medical profession, their professional identities progressed to an 'extrinsic meaning' level which reflected that their professional work was focused on developing the meaning of the medical discipline that they were working in. Kaufman and Feldman (2004) claim that a felt occupational identity, which can be likened to the extrinsic meaning identity, is based on society's recognition of the individual's membership in that profession. I will now explore the interactions that made possible the link between the participants' experiences of the phenomenon as Interns in the medical profession and that served to establish a more meaningful construction of their professional identities.

An extrinsic meaning identity may be constructed during interactions with colleagues, peers, mentors etc (Kaufman and Feldman, 2004). According to the participants' reports it was during their internship placement that this kind of interaction was made possible when the participants were interns at the district level hospitals where they worked together with other graduates from all the other medical schools in South Africa.

Patricia described her interactions with some of the interns and stated,

Once you qualified, you qualified as a doctor and you are basically expected to perform equally well! All the interns worked well together and it didn't matter that we did a PBL curriculum.

(Patricia: 04).

Joseph also stated,

When we were interns we worked side by side with the graduates from UCT¹, WITS² and MEDUNSA³, there were no differences between us and we just worked as a team. They thought that we were good at the procedures and being hands on. They admired us for always offering to do procedures.

(Joseph: 06).

The above excerpts serve to reflect the importance of fellow graduates' impressions of the professional ability of the participants and this served to reinforce their identity as professional practitioners. It was this kind of interaction with peers, friends and colleagues that served to create a social reality of the occupation and that led to a corresponding construction of an extrinsic meaning identity. Social groups reinforce professional identities, it solidifies their identities and further, these identities are imputed and confirmed by the group (Kaufman and Feldman, 2004). For the participants in the study this served as an acknowledgment that they were equally as competent as the other graduates and this made them feel like they were part of the medical profession.

From the reports of their undergraduate experiences, the participants were not made to feel equal to their traditional curriculum peers. They were also marginalized in terms of the perception that they were products of an 'inferior curriculum.' The participants also felt that their identities as the new curriculum students were not given space in the wards. They reported that their identities were not acknowledged by the medical staff in the same way that the traditional students were. This led to feelings of alienation. I would

¹ UCT: University of Cape Town

² WITS: University of Johannesburg

³ MEDUNSA: Medical University of South Africa, now part of University of Limpopo

argue that these were some of the reasons why the data indicates that the participants did not construct a completely meaningful identity as undergraduate students of a PBL curriculum. While identity development is always ongoing and takes time, regardless of curriculum type or the views of others, it is my contention that the experiences reported by the participants had a negative effect.

Making contact with the medical staff, patients and communities serves to advance such an occupational standing and also serves to reinforce the perceived occupational identity. “When one is surrounded by significant others who share one’s professional aspirations, it becomes much easier to hold on firmly to those aspirations and to identify oneself accordingly” (Kaufman and Feldman, 2004: 480). When the participants were given the opportunity to network and develop and maintain relationships with people in their desired profession, they reported being able to construct extrinsic meaning identities that may have been imputed by others.

An example of such networking in the various medical departments is highlighted by Jane:

“I think that the two year internship we had to do was the best thing. Rotating through all the Departments, Surgery, Psychiatry, and Paediatrics...you did everything. Despite what we learned in medical school, the greatest learning curve and actual learning as a doctor came from the internship. It was a priceless experience”

(Jane: 15)

Kenneth expressed his extrinsic meaning identity that coincided with the one that was imputed to him by the others in the profession:

“You were an intern no matter where you qualified, it didn’t matter what curriculum you did. The medical staff in the hospitals did not differentiate at all. They treated us at the same level and that is the absolute truth”

(Kenneth: 08)

Mac described his experience of how the others in the group and the medical ward staff felt about his ability to perform as a professional doctor:

At no point in my entire internship did I feel less of a doctor or incompetent or not as good as any other doctor. In my opinion and generally the way the consultants and registrars and my fellow colleagues felt about my abilities, I was probably the best intern they ever had.

(Mac: 10)

Internship provided the participants with an unsurpassed experience that opened their eyes to the world of medicine. The experience of being treated as equals and being given the opportunities to network within all the disciplines of medicine contributed positively to the construction of an extrinsic meaning identity. The fact that their extrinsic meaning identities were imputed by all the medical staff as well as their peers played a significant role in fostering their incipient professional identities. The participants were thus able to develop a sense of meaning within the discipline of medicine. This meaning however was still at an extrinsic level because where the participants reflected on their internship experience they were not yet describing a merger of this developing professional identity and a strong personal sense of self. Although they felt like members of the profession, there were reports of racism and discrimination during internship that may have prevented them from fully relating their personal beings to that of professional being. These negative incidents could have led to them only achieving a professional identity that was limited to the Extrinsic Meaning level. However, the internship experience proved to be a more rewarding experience when compared to the undergraduate clinical experience. Therefore the emergence of a sense of professional identity progression was identifiable in the data.

7.4.3. The intrinsic meaning identity

The phenomenographic analysis of the community service experience showed that the participants at that stage of their careers were able to construct their professional identities at the ‘intrinsic meaning’ level that reflected a sense of professional work that was eventually related to their own personal and professional beings (Petocz and Reid, 2004).

According to the participants’ reports, their community service placement at rural health care institutions in South Africa provided an experience which helped them “form a self perceived occupational identity” (Kaufman and Feldman, 2004:401). The participants reported that working within the impoverished communities with limited resources and under pathetic working conditions (see Chapter 5, section 5.2.1.4) provided a sense of belonging and a situational context within which their true professional identities were negotiated, experienced and ultimately completely constructed.

Mary described her rewarding experiences of community service that ultimately resulted in her feeling like a ‘real doctor’:

I did my community service with Gary from my class at med. school. We had been through a lot together as new curriculum students and we ended up doing community service together. I remember, it was just the two of us in the hospital most of the time. Gary was working in Anaesthetics and I was doing O and G. One night a patient came in for a Caesar¹. There was nobody else at the hospital, it was just the two of us, so Gary had to do the doping² and I had to do the cutting³. During the Caesar, I remember that we just looked at each other and laughed. I said Eish, you know that after all we’ve been through; we are the only doctors here! Anyway we got the job done, the baby was delivered and everyone was happy. I think that’s when we felt like we were finally doctors.

(Mary: 14)

¹ Caesar: Caesarian section is a surgical procedure for the delivery of a baby.

² Doping: Providing an anesthetic drug for the purpose of sedating a patient

³ Cutting Lay: term for performing a surgical incision on a patient.

The participants reported that their community service experience had served to solidify their sense of confidence and independence in terms of their construction of professional identities as medical practitioners. It was evident that they felt a sense of membership in the communities that they worked in. They claimed that they were also able to view the world from the community's perspective. It was during this community service placement that they were finally recognized publically for their identities as doctors. They were thus able to construct a professional identity "within a particular 'social-structural reality' as well as within a particular social group" (Kaufman and Feldman, 2004: 483).

At this stage of their medical careers, the participants felt that their professional identities were no longer what they themselves perceived, but were also socially imputed identities. This indicated that their sense of professional work was eventually related to their own personal and professional beings in intrinsically meaningful ways.

The mapping of developing professional identity against the stages of the participants lives as students, interns and community service officers is of course far neater and more discrete than is perhaps reflected in the messiness of the data. Furthermore, different participants developed at different stages and the data was collected largely through reflections on earlier stages. However, looking at the data collectively allowed for this analysis, which broadly evidenced a gradual acquisition of an intrinsic 'meaning professional identity.'

7.5. Conclusion

This chapter sought to re-explore the three phenomenographic categories of the 'Guinea Pig Identity,' 'Knowledge Construction' and 'The Professional Identity' in terms of their discursive construction and power. By identifying and interpreting these discourses critically, I was able to consider what was said about the participants who were the first cohort to undertake the PBL curriculum, how their medical knowledge was constructed

and how and why they were able to view their professional identities or sense of themselves as doctors through the different contexts of the clinical environments. By unpacking these discourses, I was able to expose hegemonies that negatively affected the participants during their clinical education modules. By moving beyond the phenomenographic description and interpretation of the participants' experiences of the phenomenon, I was able to move towards a critical explanation of why they constructed a relationship with subsequent clinical environments in the way that they did.

The next Chapter contains the final comments of the thesis and describes an empirical model that I have designed in attempting to resolve the findings of the study. The model will serve as a future innovation that curriculum designers may take heed of when considering the construction of medical knowledge in a PBL curriculum.

CHAPTER 8 FINAL WORDS AND FUTURE INNOVATIONS

8.1. Introduction

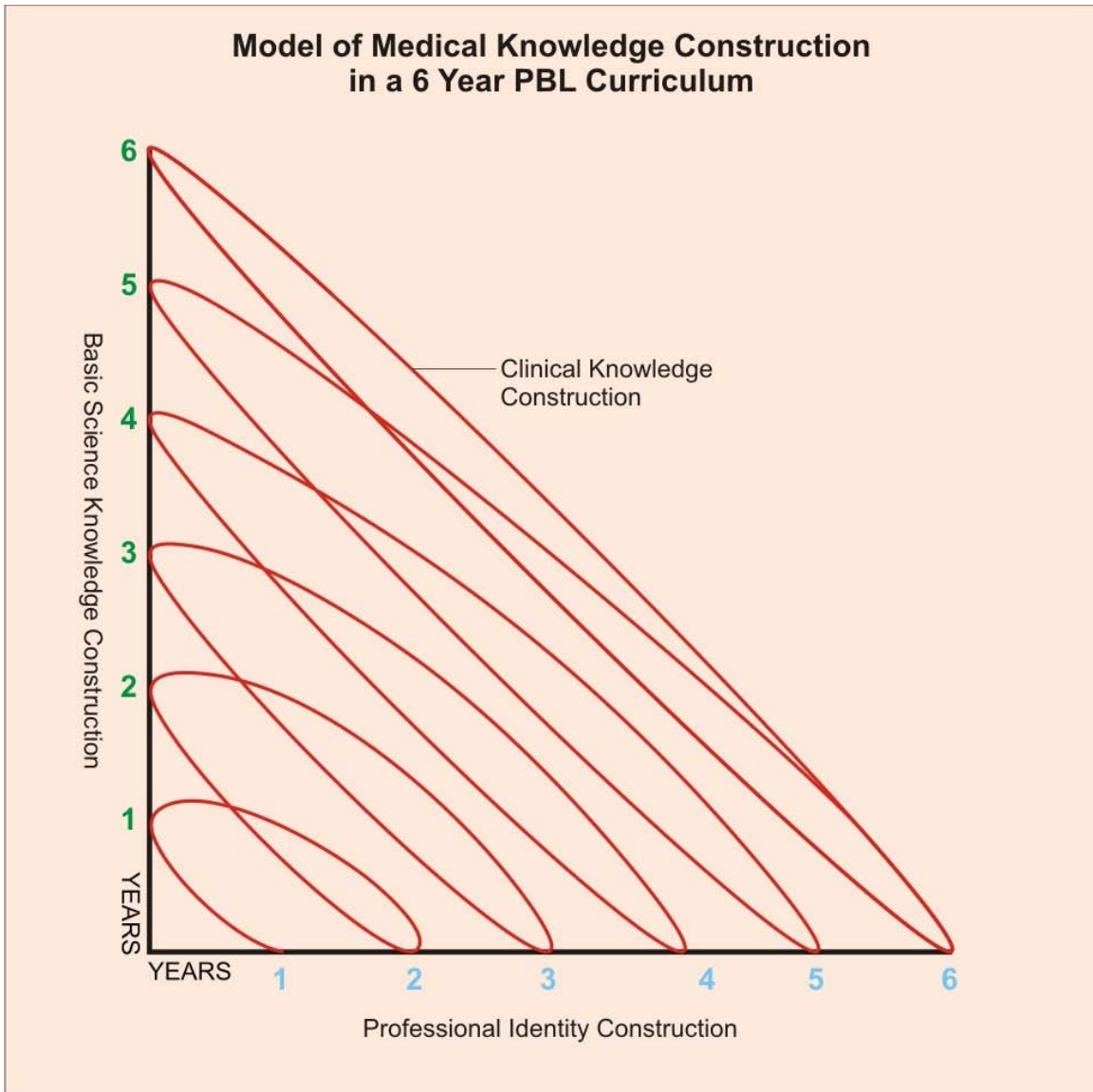
The study sought to uncover the variations in the descriptions and conceptions of the phenomenon under investigation. Using a phenomenographic methodology, I attempted to understand how the participants experienced the learning of the clinical aspects of a PBL medical curriculum across the clinical contexts of the Skills Lab and the hospital wards during their clinical education modules. I subsequently unpacked their reports which detailed how they were able to construct a relationship between their experiences of the phenomenon and the clinical environments of internship and community service within the South African Health care system. A critical discourse analysis of the phenomenographic findings was undertaken with the intention of illuminating why the participants constructed a relationship with the clinical environments in the way that they did.

From the participants' perspectives and my theorizing around the phenomenographic findings, I can now propose a model to situate and to understand the participants' interactions between learning in the specific discipline of medicine and their ability to clinically engage in it to become professional medical practitioners. By the participants' engagement I mean their relationship with the phenomenon and the subsequent clinical environments. Focusing on the variation of the participants' experiences of the phenomenon provided a background to understand the qualitatively different ways in which the participants understood and appreciated their engagement with the clinical world of medicine. Focusing on the discourses constructing these experiences provided a critical understanding of the interaction of power in their engagement with the clinical world of medicine.

The descriptive power of phenomenography enabled me to re-create a picture of the participants' experiences in the PBL medical curriculum and the subsequent clinical environments. The CDA took these descriptions further and indicated that the participants felt empowered by the practical and problem-solving nature of their educational experience and in particular took pride in their clinical abilities that was developed through the regular and continuous skills training within the PBL medical curriculum. They did however express feelings of marginalization and alienation as a result of the negative views that the consultants in the wards had of the PBL curriculum. This impacted on their ability to develop strong professional identities during the undergraduate years in the clinical education modules. The marginalization was a complex phenomenon which seemed to call on discourses of racism and issues around the ways in which medical knowledge construction is incrementally developed in a PBL curriculum. Despite the participants' concerns about possible gaps in their basic sciences knowledge and their reports of the consultants' dismissive attitude to the 'guinea pig' curriculum, the study found that the participants felt an enormous confidence in their ability to cope with clinical realities in hugely under-resourced clinical contexts. It was in this way that the participants were ultimately able to construct intrinsically meaningful professional identities as medical practitioners.

In concluding this thesis, I propose a model which arises from the study's findings regarding medical knowledge construction in a PBL curriculum that might inform future innovations.

8.2. DIAGRAM 5: Model of medical knowledge construction in a 6 year curriculum



The discussion that follows describes each of the axes of the model before turning to the ways in which the clinical knowledge construction relates to the simultaneous movement along each axis.

8.3. Basic sciences knowledge construction: the Y-axis

The end product of any medical curriculum is a medical practitioner who possesses, “the ability to construct, from a detailed history and clinical examination a differential diagnosis¹ for the patient” (Franklyn-Miller *et al.*, 2009: 202). These authors claim that making a diagnosis is the first step to be able to effectively treat a patient and determine his/her prognosis². They further argue that the ability to arrive at a diagnosis is dependent and determined by the type of medical education that the medical practitioner received during his/her training as a medical student (Franklyn-Miller *et al.*, 2009). These claims and arguments remind us of the concerns about the basic sciences knowledge that the consultants expressed according to the participants’ reports (Chapter 4, section 4. 2.2.5).

To address such concerns, the NRMSM is currently undertaking substantial changes to Curriculum 2001 (Annexure R). The staff at the NRMSM has indicated that in the haste of medical education reform in 2001 to that of a PBL philosophy and methodology, the absolute requirements for building of a “systematic knowledge base of Anatomy, Physiology and Pathology” had been deviated from (Franklyn-Miller *et al.*, 2009: 198). In an effort to decrease the factual overload in the traditional medical curriculum and replace it with life-long learning and problem-solving skills in preparation for the changing technologies and knowledge in today’s world, it is argued that the fundamental aspects of the medical knowledge base were overlooked.

As discussed in Chapter 1, section 1.2, the basic sciences knowledge in the PBL curriculum (Curriculum 2001) was integrated into the paper cases of the Themes in years one to three of the programme. Chapter 4, section 4.2.2.5 highlighted the participants’

¹ differential diagnosis: a systematic method used by medical professionals to diagnose a specific disease in a patient.

² prognosis: a medical term to describe the likely outcome of an illness.

reports of their acknowledgement that there was a theoretical inadequacy in their knowledge of the basic sciences. The question that needs to be answered regarding this finding is whether medical practitioners would be able to arrive at a differential diagnosis without having the basic foundational knowledge of Anatomy, Physiology and Pathology behind their clinical reasoning processes.

I conclude that vertical knowledge structures (Bernstein, 2000) such as the disciplines of Anatomy, Physiology and Pathology cannot be floated into the spiral structure of a PBL curriculum without there being quality assurance over the complete integration of the core objectives of the basic sciences being integrated into the paper cases of the first three years of the curriculum. Such integration would necessitate careful oversight of the curriculum as a whole and for clinicians at all levels in the training programme to be actively involved in curriculum development. This study revealed stark disjuncture between the aims and structure of the PBL curriculum and the consultants in the wards understanding thereof. The literature (for example Ash, 2009 and Svincki, 2007) makes it clear that the development of basic medical knowledge within PBL environments requires a close relationship between the clinicians and the curriculum.

The second issue pertaining to the core objectives of the basic sciences knowledge is whether these objectives are elicited during the small group facilitated sessions or elsewhere. According to the participants' reports they were unaware of these two issues being met when they were in the first three years of the programme. This suggests better oversight of how the small group sessions operate to ensure a gradual construction of the basic sciences knowledge. In 2010, the perception that there was a lack of basic sciences in the PBL curriculum has resulted in the changeover to a more traditional delivery of the basic sciences in the new first year of the programme. Anatomy, Physiology and the other basic sciences disciplines like Chemistry, Biochemistry are now lectured in a traditional didactic manner in modules in the first year. Early signs suggest that this reactionary move resulted in a swing back to problems that were related to curriculum overload. Presently the faculty has engaged in setting up an oversight committee to investigate this matter and come with a plan to restructure and deliver the first year. This has direct

implications for the delivery and design of the subsequent years of study. Arising from the findings of my study, I propose that the basic sciences in the new curriculum (Curriculum 2010, Annexure S) should be delivered within a PBL format using basic sciences orientated paper cases with elements of clinical knowledge in the first year with a vertically increasing progression of the basic sciences across all six years of the programme. There should be a sequential approach to the pedagogy of the basic sciences as this would ensure that there would be no gaps in the knowledge construction of the basic sciences even in the clinical years where such knowledge is needed the most in order to arrive at a provisional diagnosis of a patient.

8.4. The professional identity construction: the X axis

The X axis of the proposed model that arises from the study is that of the professional identity construction. In noting that the idea of ‘professional’ arises from the verb ‘profess,’ Derrida (2002: 209) states, “To make profession of is to declare out loud what one is, what one believes, what one wants to be, while asking another to take one’s word and believe this declaration.” The participants in the study were exposed to the professional community of medicine and its rituals, practices and practitioners from day one of the PBL curriculum. They reported on their experiences of the clinical contexts in terms of how they belonged to it and their nature of involvement with it. They also highlighted those clinical environments where they felt a sense of belonging like the Skills Lab where they reported being part of the community of learning since their clinical abilities were appreciated. This contributed to a sense of becoming a professional.

However, in the wards during the clinical education modules, the negative clinical environments hampered their sense of feeling like a professional. I therefore appeal to curriculum developers to give careful consideration to how the essential skills of professional development such as communication skills, ethics, teamwork etc. are spread throughout the six years of the programme. Since these professional practices can be paralleled to Bernstein’s (2000) horizontal knowledge structures, each skill has no particular order but should be integrated horizontally across the six year programme to

ensure that the students become aware of the epistemology and ontology of their discipline and are able to adopt a philosophical and moral stance to their profession that is aligned to their own sense of being.

The findings of the study in terms of the professional identity construction revealed that a sense of being and a sense of transformation within the medical discipline were dependent on how the participants were able to construct a relationship within the clinical learning environment. Their cognitive and emotional transitions in the development of their professional identities were influenced by the clinical learning contexts as undergraduate medical students, interns and community service officers. It is therefore imperative for curriculum developers to understand that students' happiness, confidence and feelings of competence are directly linked to their ability to apply and appreciate their profession from the outset of the programme until they graduate and beyond.

8.5. Clinical knowledge construction: the spiral

The proposed model suggests that clinical knowledge construction can be developed in a spiral manner that aligns itself to the vertical development of the basic sciences knowledge construction and the horizontal development of a professional identity. Clinical and emergency skills training in Curriculum 2001 began from the first day of the PBL programme. History taking, physical examination techniques and emergency skills were taught at the Skills Lab. From the participants' reports of their experiences of learning such skills, it is evident that they were satisfied with the skills training programme that they received. This enabled them to develop a sense of confidence and competence in terms of their professional identity construction. This in turn facilitated their ability to transfer their knowledge of clinical skills and competencies to the real patient setting in the hospital wards during the clinical education modules. However, when the participants went to the wards in their third year, they reported that the consultants viewed them as inferior to the traditional curriculum students. From their reports it appeared that the consultants were of the opinion that the participants lacked the, "systematic body of medical knowledge to take full advantage of the learning

opportunity” (Franklyn-Miller *et al.*, 2009: 199). The consultants seemed to believe that the participants lacked a sense of clinical pattern recognition which was the foundation of clinical practice, despite the participants feeling competent in this area.

For three years the participants learned clinical skills in a simulated environment with the use of models and simulated patients. The literature shows the effectiveness of such virtual environments on students’ clinical skills competencies (Post and Drop, 1990; Remmen *et al.*, 2001; Nielsen *et al.*, 2003; Niemi-Murola *et al.*, 2007). However according to the participants’ reports, the consultants in the study as well as many of the NRMSM staff are presently questioning the effectiveness of early clinical exposure in a medical curriculum. Many of the medical staff are of the opinion that simulated patients (actors) can be trained to relate to classical disease histories without the influence of real emotional stressors. Consultants are questioning the frequency of the real patients presenting with such highly ‘sanitized’, ‘reproducible’ ‘highly structured’ and ‘manufactured’ cases (Franklyn-Miller *et al.*, 2009). In the real clinical setting, clinicians are required to rapidly recognize a provisional diagnosis sometimes in the absence of a classical disease history.

Franklyn-Miller *et al.* (2009) express concern for the lack of room for the development of the creativity that is required to clinically question patients. They further indicate that this issue raises a concern for future doctors’ ability to recognize complicated patterns of patients’ presentations in order to select a differential diagnosis. Another concern that is expressed by the consultants is the decline in the emphasis of the bedside teaching method. The consultants believe that the ‘master-apprentice’ model of the bedside tutorial has been lost as a result of the use of simulated patients and models in the Skills Lab. Numerous studies have shown the effectiveness of the bedside tutorial in enabling students to perform thorough clinical examination skills that correlate directly with the actual time spent at the bedside of patients watching senior experts performing such skills (Reilly, 2003; Tamblyn *et al.*, 2007, Johnson and Carpenter, 1986). It is also noted that by performing thorough clinical examinations and taking proper histories of patients’

complaints, there is a reduction in the use of unnecessary diagnostic investigations such as magnetic resonance imaging (MRI) (Franklyn-Miller *et al.*, 2009).

The above-mentioned concerns about PBL and the consultants and medical staff of the NRMSM's call for a return to the pre-clinical/clinical divide are at odds with the findings of my study. The participants in the study indicated a sense of competence regarding their physical examination techniques and clinical procedures which they were required to perform on real patients in the wards. The model that I have designed indicates a spiral application of clinical skills knowledge construction in a PBL curriculum that starts from first year and broadens out maximally into the final year of study. I therefore recommend that clinical skills training remain in the first three years of the curriculum at the Skills Lab with the subsequent transfer of these basic skills into the real clinical environments during years four, five and six. This would serve to augment the bedside tutorial rather than replace or downgrade it in anyway. In fact, the consultants at the bedside in the wards should facilitate the transference of the students' competencies and abilities that they have learnt in the first three years at the Skills Lab. The consultants should allow the students to perform such skills in the real clinical environments under supervision, presuming they are familiar with the educational work which had been undertaken in the Skills Lab. History taking skills, physical examination skills and procedural skills should not be re-taught but reinforced by the experts. This will serve to inspire the students when they are acknowledged by the experts for their professional competencies, thereby assisting them in developing a sense of professional identity in the discipline.

8.6. Conclusion

NRMSM experienced a rapid change from a traditional discipline-based medical curriculum to a complete new paradigm shift to a PBL curriculum. The centuries old medical curriculum with its detailed professional standards and abilities has been put under the spotlight and criticized across the world for its content overload and its inability to enable students to transfer knowledge to the real clinical setting. A PBL methodology that was based on clinical problems that acted as learning stimuli with the expert being

replaced by a non-expert facilitator and the promotion of a student-centred, life-long learning approach was the new innovative medical curriculum that would prepare doctors for tomorrow. Numerous studies over the past four decades have been conducted to prove the effectiveness of PBL as well as to reveal its faults. In its haste to address such issues through curriculum reform, did the NRMSM put in place sufficient quality oversight to ensure that there was no decline in the clinical skills ability and diagnostic acumen of its graduates?

According to Franklyn-Miller *et al.* (2009:200), “It takes over fifteen years to fully train in a speciality and thus will result in a hangover effect where changes in learning methodology will not be apparent until these PBL trained classes of doctors complete their higher training.” It will require further research to establish whether the PBL graduates of the NRMSM are sufficiently prepared to take on speciality training and how they perform at registrar or fellowship level.

My study was able to determine whether the participants who experienced the phenomenon through PBL pedagogy were ready for their professional identities as medical practitioners. The study was able to conclude that, despite some concerns about basic science knowledge and the hegemonic practices as well as the power relations that had ideological effects on the participants’ experiences of the phenomenon, they were able to construct an emerging sense of professional identity across the clinical contexts and finally felt like, ‘real doctors’ during their community service placement. Here they felt a sense of belonging within the rural communities of South Africa. The participants reported confidence and competence in their clinical practice in a PBL environment and their subsequent clinical environments. A progression from a ‘guinea pig’ identity to the identity of a ‘professional medical practitioner’ was finally achieved.

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26 November 2010

Ms. S Reddy (200277857)
School of Adult and Higher Education

Dear Ms. Reddy

PROTOCOL REFERENCE NUMBER: HSS/0013/09D

PROJECT TITLE: Experiences of clinical practice in a problem-based learning medical curriculum and subsequent clinical environments.

FULL APPROVAL NOTIFICATION – FULL COMMITTEE REVIEWED

This letter serves to notify you that your application in connection with the above was reviewed by the Humanities & Social Sciences Research Ethics Committee on 5 December 2008, has now been granted full approval following your responses to queries previously addressed.

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach/Methods must be reviewed and approved through an amendment /modification prior to its implementation. Please quote the above reference number for all queries relating to this study. **PLEASE NOTE: Research data should be securely stored in the school/department for a period of 5 years**

Best wishes for the successful completion of your research protocol

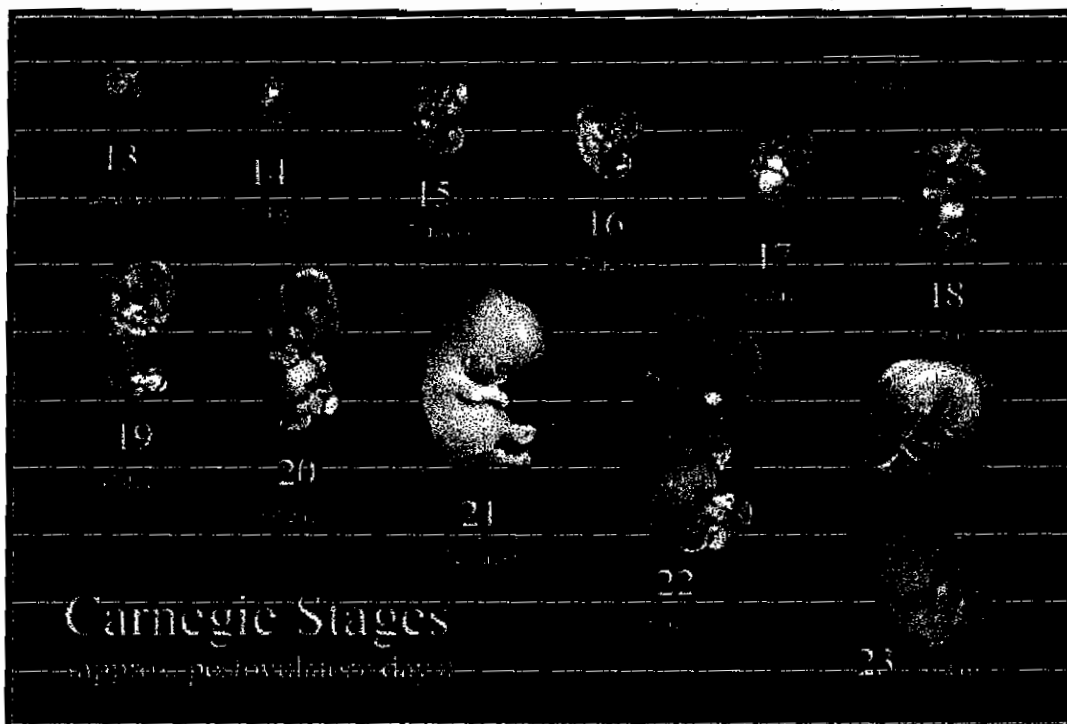
Yours faithfully

.....
PROF. STEVEN COLLINGS (CHAIR)
HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE

cc. Supervisor – Dr. S McKenna
cc. Mr. N Memela

GROWTH & DEVELOPMENT

STUDENT MANUAL



Acknowledgement-<http://embryo.soad.umich.edu/>

SCHOOL OF UNDERGRADUATE MEDICAL EDUCATION

Nelson R Mandela School of Medicine
UNIVERSITY OF NATAL

MBChB 1
Curriculum 2001

May 2001

CONTENT

Co-ordinator and contributors to the Module Planning Group..... 2

Subject Specialists 2

The University Of Natal's 8 steps..... 3

Module Timetable 4

Learning Objectives of Module 8

Weekly Objectives..... 9

Details of Skills Activities..... 10

Details of Practicals 11

Synopsis of Large Group Resource Sessions 12

CASES:

Week 1

Case 1 – An Unforgiving World..... 13

Week 2

Case 2 – Big Head = Big Brain? 14

Week 3

Case 3 – Milestones of Development 15

Week 4

Case 4 – The Emotional Rollercoaster of Teens 16

Week 5

Case 5 – The Middle years and Beyond..... 17

Week 6

Case 6 – The Morality of Health Care 18

Two case readings from philosophy of principles of ethic

Resource material..... 19

Self Assessment Questions and Answers..... 20

Appendix 1

Guidelines for visit to Spes Nova and Brown's Schools; Valley Trust and KEH clinics

Appendix 2

Psychology: Group Assignments

Histology Practical Schedules

Year Co-ordinator for MBChB 1

Professor M McLean (Physiology)

Curriculum Organiser

Ms V Singaram (Medical Educational Development)

Module Planning Group**Co-ordinator:** Dr M Chhagan (Paediatrics)

Contributors:

Prof M Adhikari	(Paediatrics)
Ms V Jitho	(Med Applied Psychology)
Dr A Marszalek	(Physiology)
Ms N Singh	(Med Applied Psychology)
Ms L Mattison	(Philosophy)

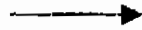
Secretarial AssistanceMs AR Balram
Ms NC Maistry**SUBJECT SPECIALISTS**

Family Medicine	-	Prof M Cassimjee
Medically Applied Psychology	-	Ms N Singh /Prof B Pillay
Histology	-	Dr A Marszalek /Prof M McLean
Human Anatomy	-	Dr N Sunderlall /Dr JS Naidoo
Philosophy	-	Ms L Mattison
Paediatrics	-	Dr M Chhagan
Genetics (Paediatrics)	-	Dr Winship

1. DEFINE
Words or
concepts



2. IDENTIFY
Main issues/
hypothesis



3. GENERATE
(brainstorm)
Explanations for
main issues



4. IDENTIFY QUESTIONS
that need to be answered to
produce explanations or
descriptions of process that
underlie the main issues

UNIVERSITY OF NATAL

the eight PBL steps



8. REFLECT ON,
evaluate your
learning, your
personal growth and
the group process



7. SHARE, pool,
integrate the
knowledge
acquired and
produce
explanations of the
main issues



6. REALISE
the requirements of
the learning goals
using individual or
group study



5. Formulate
learning goals

GROWTH & DEVELOPMENT: TIME TABLE

WEEK 1

	8h30	10h30	11h00	13h00	14h00	16h00
Monday 14/05	Introduction to module and The Continuity of Life L2 <i>Ms V Singaram</i>	T E A	1 st Tut: Case 1 – An Unforgiving World	L U N C H	Connective Tissue (Histology) L2 <i>Prof M McLean & Ms S Bux</i>	
Tuesday 15/05	Skills lab (1-4)		Skills lab (9-12)		Skills lab (5-8)	
	History-taking skills S1, S2 <i>Ms Singh & Mrs Jithoo</i> Grps (5-6)		History-taking skills S1, S2 <i>Ms Singh & Mrs Jithoo</i> Grps (13-14)			
	History-taking skills Skills lab <i>Prof Cassimjee & Dr Pillay</i> Grps (7-8)		History-taking skills Skills lab <i>Prof Cassimjee & Dr Pillay</i> Grps (15-16)			
Wednesday 16/05	Histology (Cartilage & bone) Group A		Histology Group C		Histology Group B	
	History-taking skills Skills lab <i>Prof Cassimjee & Dr Pillay</i> Grps (1-2)		History-taking skills Skills lab <i>Prof Cassimjee & Dr Pillay</i> Grps (9-10)			
	History-taking skills S1, S2 <i>Ms Singh & Mrs Jithoo</i> Grps (17-18)	History-taking skills S1, S2 <i>Ms Singh & Mrs Jithoo</i> Grps (11-12)	History-taking skills S1, S2 <i>Ms Singh & Mrs Jithoo</i> Grps (19-20)			
Thursday 17/05	Basic principles of Genetics L2 <i>Dr Winship</i>	Skills lab (Grps 13-16)	Skills lab (Grps 17-20)			
Friday 18/05	History-taking skills S1, S2 <i>Ms Singh & Mrs Jithoo</i> Grps (3-4)	2 nd Tut: Case 1 – An Unforgiving World	Introduction & Principles of Development L2 <i>Ms N Singh</i>			

Key:

Venues L2 – Lecture Theatre 2 Steve Biko – Steve Biko Auditorium DH – Anatomy Dissection Hall S1 – Seminar Room 1 S2 – Seminar Room 2	Student Groups Groups 1-20 – For Tutorials (See notice board for Grouping for Module 1.3) Group 1-20 – For Skills and Hospital visits (As per Groupings for 1.1) For Histology Practicals (As per Groupings for Module 1.1) A: Groups 1-7 B: Groups 8-14 C: Groups 15-20
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WEEK 2

	8h30	10h30	11h00	13h00	14h00	16h00
Monday 21/05	Nervous System (Histology) L2 <i>Dr A Marszalek</i>			1 st Tut: Case 2 – Big Brain = Big Head?		HIV Lecture
Tuesday 22/05	Skills lab (Grps1-4)			Skills lab (Grps 5-8) Histology (nerve tissue) Grp C		Skills lab (Grps 9-12) Histology (nerve tissue) Grp A
Wednesday 23/05	Basic Principles of Embryology/CNS (1) L2 <i>Dr JS Naidoo</i>			Enrichment		Neuroanatomy prac 1 <i>Dr N. Sunderlall</i> DH (All students)
Thursday 24/05	Adolescent Health: An Overview <i>Steve Biko</i> <i>Prof Cassimjee &</i> <i>Ms Singh</i>			Skills lab (Grps 13-16)		Skills lab (Grps 17-20) Histology Group B
Friday 25/05	Question & Answer Basic embryology/CNS (2) L2 <i>Dr N Sunderlall</i>			2 nd Tut: Case 2 – Big Brain = Big Head?		Neuroanatomy prac 2 <i>N.Sunderlall</i> DH (All Students)

- Check noticeboard for Enrichment details

WEEK 3

	8h30	10h30	11h00	13h00	14h00	16h00		
Monday 28/05	The Aging Process: An Overview <i>Prof Cassimjee &</i> <i>Ms Singh Steve Biko</i>		T E A	1 st Tut: Case 3 –Milestones of Development	L U N C H	KEH (Pairs 1-6) POPD	KEH (Pairs 7-12) POPD	
Tuesday 29/05	KEH (Pairs 13-18)	PMMH (Pairs 25-30)		KEH (Pairs 37-42)		KEH (Pairs 43-48)		
	PMMH (Pairs 31- 36)	KEH (Pairs 19-24)		PMMH (Pairs 49-54)		PMMH (Pairs 55-60)		
Wednesday 30/05	KEH Pairs 61-66)	KEH Pairs 67-72)						
Thursday 31/05	**Visit to KEH, Valley Trust, Brown School, Spes Nova, Neonatal clinic			KEH (Pairs- 73-78)		KEH (Pairs – 79-84)	KEH (Pairs 85-92)	KEH (Pairs 93-100)
Friday 01/06	Spes Nova Grps 38-40)			2 nd Tut: Case 3 – Milestones of Development				

** Epilepsy KEH – Grps 1-6 Neonatal Clinic, 7-12 Browns School – Grps 13-22
 Valley Trust – Grps 23-34 Spes Nova – Grps 35-37
 POPD = Paediatric Outpatients Department (King Edward Hospital)
 PMMH = Prince Mysheni Hospital
 Names of Pairs will be available on the notice-board at the end of Week 2

WEEK 4

	8h30	10h30	11h00	13h00	14h00	16h00
Monday 04/06	Theories of Personality L2 <i>Ms N Singh</i>	T E A	1 st Tut: Case 4 – The Emotional Rollercoaster of Teens	L U N C H	English Skills L2 <i>Ms Henson</i>	
Tuesday 05/06	Skills lab (Grps 1-2)		Skills lab (Grps 5-6)		Skills lab (Grps 9-10)	
	Vision and Hearing Skill Skills lab (Grps 3-4) <i>Dr Chhagan/ Prof Adhikari</i>		Vision and Hearing Skill Skills lab (Grps 7-8) <i>Dr Chhagan/ Prof Adhikari</i>		Vision and Hearing Skill Skills lab (Grps 11-12) <i>Dr Chhagan/ Prof Adhikari</i>	
Wednesday 06/06	Physiology of Puberty L2 <i>Mr M Tufts</i>		Medical Terminology L2 <i>Prof Dominik</i>			
Thursday 07/06			Skills lab (Grps 13-14)		Skills lab (Grps 17-18)	
		Vision and Hearing Skill Skills lab Grps (15-16) <i>Dr M Govender</i>	Vision and Hearing Skill Skills lab Grps (19-20) <i>Dr Chhagan/ Prof Adhikari</i>			
Friday 8/06	HIV Workshop	2 nd Tut: Case 4 – The Emotional Rollercoaster of Teens				

* Students will be grouped as per Grouping for Module 1.3 for the HIV Workshop

WEEK 5

	8h30	10h30	11h00	13h00	14h00	16h00
Monday 11/06	Interaction with Patients L2 <i>Mrs Reddy</i>	T E A	1 st Tut: Case 5 – The Middle Years and Beyond	L U N C H	Seminar presentation: (I) Previous week's activities L2 <i>Dr M Chhagan</i>	
Tuesday 12/06	Skills lab (Grps 1-4)		Skills lab (Grps 5-8)		Skills lab (Grps 9-12)	
Wednesday 13/06	Seminar presentation: (II) Previous week's activities L2 <i>Dr M Chhagan</i>		Enrichment L2		Enrichment Neuroanatomy Revision Practical <i>Dr N Sunderlall DH</i>	
Thursday 14/06			Skills lab (Grps 13-16)		Skills lab (Grps 17-20)	
Friday 15/06	HIV Workshop		2 nd Tut: Case 5 – Middle Years and Beyond			

WEEK 6

	8h30	10h30	11h00	13h00	14h00	16h00
Monday 18/06	Principles of Medical Ethics (I) L2 <i>Ms L Mattison</i>	T E A	1 st Tut: Case 6 – The Morality of Health Care	L U N C H	English Skills L2 <i>Ms Henson</i>	
Tuesday 19/06	Skills lab (1-4)		Skills lab (5-8)		Skills lab (9-12)	
Wednesday 20/06	Medical Terminology L2 <i>Prof Dominik</i>		Zulu L2 <i>Ms J Cockerill</i>			
Thursday 21/06	Principles of Medical Ethics (II) L2 <i>Ms L Mattison</i>		Skills lab (13-16)		Skills lab (17-20)	
Friday 22/06			2 nd Tut: Case 6 – The Morality of Health Care		End of Module Test Exam hall	

LEARNING OBJECTIVES OF THE MODULE

The aim of this module is for students to understand the process of growth and development from the newborn period to old age from a bio-psycho-social perspective. This will be accomplished by first gaining an understanding of the basic principles of gross neuroanatomy and embryology and the normal process of functional maturation that accompanies brain growth. This will be followed by an exposure to the various types of injuries that may interfere with normal development, both in terms of disturbed physiology as well as the ability to function appropriately for an individual's age. The psychological, social and ethical problems arising from impaired development will be examined.

OBJECTIVES

On completion of this module, you should

- have gained knowledge of basic neuroanatomy and embryology
- have revised the principles of cell biology, including protein synthesis and the cell cycle
- have acquired knowledge of different types of histological tissues with an emphasis on nerve and connective tissue
- have insight into the response of cells to injury
- understand the human life cycle from the neonate, through to adolescence, adulthood and old age from a **physical/biological**, psychological and social perspective
- have insight into development through the life cycle and how this correlates with biological factors
- have gained insight into the ethical principles that guide care of the physically or intellectually impaired child or adult
- be able to perform a basic developmental screening in children
- be able to perform a basic hearing and visual screening in infancy and childhood
- understand the concept of the multidisciplinary team approach in the management of children and adults with developmental problems
- have acquired history-taking skills especially of an adolescence and elderly

WEEKLY OBJECTIVES**WEEK 1**

During this week, you should gain an understanding of

- 1.1 the concepts of cell/tissue/organ/system organisation
- 1.2 the histology of different types of connective tissue
- 1.3 the response of the brain to injury in neonates
- 1.4 DNA replication, protein synthesis, cell division and basic principles of genetics
- 1.5 history-taking skills in the case of an adolescent and an elderly patient.

WEEK 2

During this week, you should gain knowledge of the relevant basic sciences, leading to an understanding of normal and abnormal human development. Included would be

- 2.1 principles of nerve transmission
- 2.2 basic neuro-anatomy
- 2.3 the histology of nerve tissue
- 2.4 basic principles of embryology focusing on CNS embryology
- 2.5 abnormalities and their impact on development

WEEK 3

During this week, you should gain an understanding of

- 3.1 early childhood development from a bio-psycho-social perspective
- 3.2 normal developmental progression between 0-6 years and should learn to take a basic paediatric history
- 3.3 the aging process
- 3.4 the impact of abnormal impact on the child's and family life

WEEK 4

During this week, you should gain an understanding of

- 4.1 the physiological and psychological aspects of normal puberty and adolescence
- 4.2 problems and maladaptive behaviour that may arise during this period
- 4.3 resources available to people (in all age groups) with problems identified previously
- 4.4 the concept of a multidisciplinary health care team
- 4.5 the introduction to several personality theories
- 4.6 screening children for visual and hearing function

WEEK 5

During this week, you should gain an understanding of

- 5.1 the psychosocial stages in early and late adulthood
- 5.2 the specific issues facing the elderly from an individual and a social/cultural perspective
- 5.3 crisis intervention with regards to a battered child, special patients and those with behavioural problems

WEEK 6

During this week, you should gain an understanding of

- 6.1 the advanced principles of ethics
- 6.2 how these principles are applied when involved in the care of disabled children, the mentally handicapped person and the aged with dementia.

NOTE: Please read the two articles related to Case 6 prior to attending the first session of the week.

DETAILS OF SKILLS**Week 1****1. Application of a cervical collar (video on webCT and LAN)****2. History taking (Skills lab/staff dining room)**

Focus: a. Overview of history-taking skills/clinical interview skills.

b. Overview of micro/macro skills of communication in the doctor-patient relationship.

c. Student role-playing with an adolescent and an aged person in scheduled practical sessions.

2.1. The Adolescent: Interviewing skills will be the focus: Taking a history from an adolescent will form part of this module. Role players will be used to help develop the required skills. Approximately 20 students will make up one group per two hour session.

2.2. The Elderly: Interviewing skills and psychosocial issues facing middle to old aged people will be the focus of this session. Taking a history with the elderly person will form part of this module. Role players will be used to develop the required skills. Other objectives will be outlined (support systems; social activities, etc.)

Approximately 20 students will make up one group per two hour session.

Week 2**1. Basic life support (child and infant) (video on webCT and LAN)****Week 3****1. Taking a developmental history and performing a basic clinical assessment**

Students will work in pairs either at King Edward Hospital (KEH) [Paediatric Outpatients Dept (POPD)] or Prince Mshiyeni Hospital. Each pair will visit the above venue at the stipulated time and randomly select a patient from the waiting queue. Each pair will spend 30 minutes taking a developmental history from the mother and observing the child's developmental functions. Only children with minor ailments should be used. With regard to KEH, these children will be found directly adjacent to the weighing area in POPD.

2. Children with neuro-developmental problems

Students will work in groups of 5 either at Brown's School, Spes Nova, Valley Trust, KEH Epilepsy or Neonatal clinic. Each group will decide on how to share the task and will be allocated one child. In such situations, the child should be observed to ascertain the developmental profile. Any other observations regarding the child's condition should be included. The guidelines at the back of the book should be for this observational task. Each group will return to compile a report on their child. This will include information gathered from your reading and observation. Please note that you will NOT be allowed to interview the child/caretaker on this occasion. This report should include the findings from the above as well as some discussion on the pathogenesis of the child's problem and immediate and long-term management as well as the types of resources that may be available to the child and family. The report should include a relevant literature review. Further, each group should prepare to deliver a 10 minute Power Point presentation on their case. **PLEASE SEE BACK OF BOOK FOR GUIDELINES REGARDING VISITS AND TIMETABLE FOR GROUPING.**

Week 4**Logroll onto spine board (video)****Week 5****Application of scoop stretcher****Application of Kendrick Extrication Device****Week 6****Extrication of patient from motor vehicle****Application of chair stretcher**

DETAILS OF PRACTICALS**Week 1****Neuroanatomy – Practical 1 (Including Histology)**

Video demonstration, dissected specimens and charts will be used to demonstrate the anatomy and histology of the following structures:

Cranium, sutures, sinuses, meninges, cerebrum, cerebellum, brainstem structures

Venue: Dissecting Hall

Group: Entire Class

Neuroanatomy – Practical 2 (Including Histology)

Video demonstration, dissected specimens and charts will be used to demonstrate anatomy and histology following :

CSF circulatory pathways, basic circulation, ventricles and choroid plexus

Venue: Anatomy/Dissecting Hall

Groups: Entire Class

Note: Preparation for these practicals is necessary by reading through the relevant sections in your anatomy textbook/manual.

Histology Practical 1 (cartilage and bone)

Practical schedules (connective tissue, bone, nerve) have been included in your manual book. Only two practicals have been scheduled (for cartilage and bone and for nerve tissue, which means you need to do connective tissue in your own time). Please read these prior to attending the practical. Remember to bring Wheater's Functional Histology. It will also be an advantage to read the relevant chapters in this book and look at Wheater's CD before the practical.

Week 2**Histology practical 2 (nerve tissue, mainly peripheral nervous system)**

Practical schedule has been included in your manual book. Please read prior to attending the practical. Remember to bring Wheater's Functional Histology.

Week 5**Neuroanatomy Revision Practical**

Specimens studied in practical 1 and 2 will be available for revision.

Venue: Anatomy/Dissecting Hall

Groups: Entire Class

SYNOPSIS OF LARGE GROUP RESOURCE SESSIONS (LGRS)**1. Continuity of Life**

This session will provide an overview of DNA replication, protein synthesis and the different stages of mitosis and meiosis.

2. Connective Tissue (Histology)

One of the four basic tissue types in Histology (nerve, muscle, epithelia being the other three). In this session, you will be shown slides on the different types of connective tissue (CT proper, e.g. fibrous, CT and supporting tissue, e.g. cartilage and bone). A practical will be scheduled to view cartilage and bone tissue. You are expected to study the other connective tissues (schedule in Module Book) in your own time.

3. Genetic Influences in Human Growth and Development

Approximately 1% of all children are born with a chromosome disorder and another 1% with a defect of a single gene. Most of these conditions affect the growth and development of the children. Their recognition and an understanding of the mode of inheritance are important for their management, counselling of the parents and possible prevention of recurrence in the family.

4. Medically Applied Psychology Large Group Resource Sessions

The aim is to understand human growth and development, from newborn to old age, within a biopsychosocial perspective. Over the next 6 weeks, you will be given an overview of psychosocial issues/difficulties faced at the different stages of human development as well as an introduction to several personality theories. The focus is to understand the individual within a holistic framework. Please see Appendix 2 for assignment details.

5. The Nervous System (Histology)

This session will provide an overview of the peripheral and central nervous system including various cellular components, their arrangement and function. Different types of neuronal synapses and neurotransmitters will be discussed. Students will be introduced to the structure and function of the neuro-muscular junction and different types of muscle.

6. Basic Principles of Embryology/CNS(I)

This session is an overview of development during the embryonic and foetal period with emphasis on the CNS. The different areas of the brain, its coverings, blood supply, drainage and the osteology of the cranium will be covered.

7. Basic principles of the Embryology/CNS(ii)

This is a question and answer session based on the work covered in the lecture and neuroanatomy practicals.

8. Interaction with Patients

Crisis Intervention

1. Battered child - recognition and handling and reporting
2. Special patients and situations - deaf, blind, language problems
3. Behavioural problems - stress reactions, psychiatric emergencies, aggressive behaviour, etc.

9. Principles of Medical Ethics I and II

The principles of respect for autonomy, beneficence, non-maleficence and justice will be explored and cases will be used to illustrate these medical concerns.

WEEK 1**CASE 1****AN UNFORGIVING WORLD**

It was a rainy night and Barry lost control of his car on a lonely road and collided with a side post. He remained unconscious for approximately an hour before help arrived. At the hospital trauma unit, the doctor on duty found him to have a deep cut in his right thigh which had severed a nerve. He also had a subdural haemorrhage.

Six months later, the wounds on his thigh appeared completely healed except for a small 2 cm scar. He was, however, using crutches as he could not use his right leg, which now appeared much thinner when compared with the left leg. Barry also mentioned that he was experiencing short memory lapses.

WEEK 2**CASE 2****BIG HEAD = BIG BRAIN?**

A mother brings her 10-month old baby to the doctor with a complaint that he is unable to see. The most striking observation is that this child has a head size (circumference) that is much larger than that expected for his age. After further history-taking and a basic neurological examination, abnormal brain development was suspected and the mother was referred to a specialist for further tests to be done.

WEEK 3**CASE 3****MILESTONES OF DEVELOPMENT**

Below is the neurological developmental progress of a set of 8-year old twins. They were born prematurely in the 7th month of pregnancy. They had spent many weeks in hospital after birth because of problems associated with being premature. After 8 difficult years and many consultations with health professionals for the children, the parents now find themselves at each others throats and on the brink of divorce.

	Twin A	Twin B
4 months	<ul style="list-style-type: none"> • cooing sounds, 	<ul style="list-style-type: none"> • cries when hungry • not very noisy otherwise
7 months	<ul style="list-style-type: none"> • sits alone for a minute laughs; makes 'm' sound • holds bottle; bangs objects 	<ul style="list-style-type: none"> • rolls over from prone to supine position • makes throaty sounds
12 months	<ul style="list-style-type: none"> • walks with one hand held • shakes head for 'no' • calls 'mama' and 'dada; finger feeds 	<ul style="list-style-type: none"> • crawling; sits alone for few seconds • holds bottle; cannot drink from cup; does not shout but cries if unhappy
2 years	<ul style="list-style-type: none"> • climbing onto furniture • points to body parts • says 'car'; 'ball'; 'cup' 	<ul style="list-style-type: none"> • stands with support • not saying words
4 years	<ul style="list-style-type: none"> • climbs stairs; hops • copies 'O' and '+' • knows name 	<ul style="list-style-type: none"> • walks with aid; holds spoon attending speech therapy
7 years	<ul style="list-style-type: none"> • attending school, but teacher complains of hyperactive behavior 	<ul style="list-style-type: none"> • severe speech impairment • walks on own • frequent bed-wetting

WEEK 4**CASE 4*****The Emotional Rollercoaster of Teens***

War has broken out at home between 12-year old Rose and 13-year old Peter. Rose called Peter "a pimply dwarf" because he had been on the telephone too long. This hurt Peter because he was already uncomfortable about Rose being taller than him in spite of her being a year younger. Peter retaliated by commenting on the size of her breasts! That evening, Peter was unusually quiet and his mother became concerned. He finally admitted that his friends in class were taller than he was, and some have already started to shave. This embarrassed him as he felt left behind. Rose tried to cheer him up by saying that it didn't matter that they were taller or shaved because they still behaved like children!

WEEK 5**CASE 5****THE MIDDLE YEARS AND BEYOND**

Peter and Rose have calmed down a bit because they're now aware of other conflicts in the household that are more threatening than their own. Dad has been retrenched and is spending too much time in the pub. Mum had been for an interview for a job, which has angered dad. He thinks she is humiliating him by showing him that she can be the breadwinner. At the same time, granddad's (paternal) dementia has taken a new turn. He is 80 years old and is now eating very poorly and losing weight as he appears to have difficulty feeding himself. Dad thinks he should be admitted to a home for the aged which has a good frail-care centre; but mum feels guilt-ridden that he should even have such thoughts. That afternoon at a family meeting, the decision of whether granddad should be admitted into a home for the aged was discussed and a range of conflicting opinions were expressed. For the first time in five years, they attended Mass at the local church that Sunday, hoping to find some solutions.

WEEK 6

CASE 6

" THE MORALITY OF HEALTH CARE"

Please read these two articles prior to attending the first session of the week.

- 6.1. The abnormal child: Moral dilemmas of doctors and parents
- 6.2. Life past reason

R.M.Hare
Ronald Dworkin

RESOURCE MATERIAL**RECOMMENDED TEXTS**

1. Kibel MA, Wagstaff LA (1995) Child Health for All: A Manual for Southern Africa (2nd Ed). Cape Town: Oxford University Press.
2. Coovadia HM, Wittenberg DF (1998) Paediatrics and Child Health: A Manual for Health Professionals in Southern Africa (4th Ed). Cape Town: Oxford University Press.
3. Langman J (1995) Langman's Medical Embryology (7th Ed). Baltimore: Williams and Wilkins.
4. Guyton AC (2000) Textbook of Medical Physiology (10th Ed). Philadelphia: Saunders.
5. Kuhse H, Singer P (1999) Bioethics: An Anthology. Oxford: Blackwell Press.
6. Campbell, N.A. Biology. Addison Wesley Publishing Group, Wokingham, Berkshire, UK

ADDITIONAL REFERENCES

1. Ulijaszed SJ, Johnston FE, Preece MA (1998) The Cambridge Encyclopaedia of Human Growth and Development. Cambridge: Cambridge University Press.
2. Amiel-Tison C, Grenier A (1986) Neurological Assessment During First Year of Life. New York: Oxford University Press.
3. Strasburger VC, Brown RT (1991) Adolescent Medicine: A Practical Guide. Boston: Little, Brown.

SELF-ASSESSMENT QUESTIONS

Week 1

NOTE: Histology questions and answers in practical schedule.

1. Describe in detail DNA replication and protein synthesis.
2. Describe the different phases in mitosis and meiosis.
3. Differentiate between G1, G2, and M phases of the cell cycle.
4. Match the psychosocial stages of development with its specific developmental crises [ERIKSON].

i. Infancy	a. Intimacy vs. Isolation
ii. Early childhood	b. Industry vs. Inferiority
iii. Childhood: Play stage	c. Generativity vs. Self Obsession and Stagnation
iv. School-age	d. Basic trust vs. Mistrust
v. Adolescence	e. Initiative vs. Guilt
vi. Early adulthood	f. Identity vs. Role confusion
vii. Adulthood	g. Ego Integrity vs. Despair
viii. Maturity	h. Autonomy vs. Shame
5. Match the 4 stages of cognitive development identified by Jean Piaget, with their relevant age group.

i. Sensorimotor stage	a. 7 -10 years old
ii. Pre-operational stage	b. Adolescence to adulthood
iii. Concrete operational	c. 0 -2 years old
iv. Formal operations	d. 2 - 7 years old
6. Chromosomal problems that cause neurodevelopmental delay
 - i. include Down's syndrome
 - ii. can be detected during foetal life
 - iii. do NOT cause mental retardation
 - iv. occur only in children when both parents also suffer from the same abnormality
 - v. are required in the second year of life

Week 2

Histology questions and answers in practical schedule.

Answer TRUE or FALSE to questions 7-19.

7. Human somatic cells contain 23 pairs or a diploid number of chromosomes.
8. The corpus luteum is a remnant of the ruptured graafian follicle.
9. Exposure to measles during the first trimester may be harmful.
10. The embryonic period commences after the eight weeks of gestation.
11. Muscles are derived from endodermal cells.
12. The pia mater is the outermost covering of the brain.
13. The internal carotid and vertebral arteries supply the brain.
14. The superior sagittal sinus drains venous blood from the brain.
15. The brain is about 2% of the body weight and receives about 1/6th of the cardiac output and consumes about 1/5th of the oxygen used by the body.

16. The brainstem connects the spinal cord to the cerebrum and is made up of the midbrain, the pons and the medulla.
17. The cerebellum is essential for the co-ordination of movements of the body.
18. The cerebral hemispheres are connected by the corpus callosum.
19. The ventricles contain the choroid plexus.

20. According to Freud's theory
 - a. List the 5 stages of psychosexual development from infancy to adolescence.
 - b. List the 3 levels of awareness on which the human mind functions.

21. List and briefly discuss 3 IDEAL resolutions of adolescence.
22. Failure of neural tube closure during embryonic life
 - a. occurs late in fetal life, usually in the last month of foetal life
 - b. can cause a myelomeningocele
 - c. cannot be prevented
 - d. may result in paralysis of the lower limbs

23. Hydrocephalus
 - a. occurs due to obstruction of CSF flow within the ventricular system
 - b. occurs due to dysfunction in the absorption of CSF
 - c. is a common cause of microphaly
 - d. is a cause of blindness
 - e. is easier to detect from a one-time single measurement of head circumference rather than serial measurements done over time
 - f. may be congenital in origin

24. List at least 5 developmental tasks of Middle Adulthood [40-55 + years]

25. List 5 specific questions you would ask in the history to screen whether a 2-year old child is developing normally.

26. At the age of three years, a child should be able to
 - a. climb up stairs
 - b. start toilet-training
 - c. engage in rational thinking
 - d. display sibling rivalry
 - e. speak in sentences

27. A six month old child
 - a. can sit alone for a few minutes
 - b. has marked head lag when pulled up to the sitting position
 - c. is unable to lift his head and look around when lying on his tummy
 - d. is able to support his weight on his hands with extended arms in the prone position
 - e. should be able to crawl

Week 4

28. Describe briefly how you would assess hearing in a 6-month old child
29. Describe briefly how you would assess vision in a 2-month old baby.

Week 5

30. Describe the management and legal obligations of reporting a battered child.
31. Describe the special care required for patients who are deaf, blind or who do not understand the language.
32. Discuss and describe the safety precautions when dealing with violent or domestic incidents, aggressive patients and psychiatric patients.

Week 6

33. Name and define the 4 principles generally regarded as fundamental to ethical decision making in the field of medicine and health care.
34. What is the difference between non-maleficence and beneficence? Are both necessary as separate principles? Why/Why not? Can you give an example to support your answer?
35. What is meant by "paternalism"? In terms of which principle is it problematic?
36. What is "informed consent"? What conditions must be met if consent is to be really informed?
37. What is the difference between principle-based ethics and character ethics? Why do people argue that principles alone are insufficient as a basis for ethical decision making?
38. Critics of active voluntary euthanasia argue that it may be morally acceptable to allow a patient to die but it is always morally wrong to kill a patient, for example by an injection of morphine. To what extent is the distinction between letting die and killing morally sound or are there times where killing may be morally better than letting die?
- 39a) A Jehovah's Witness is admitted to casualty bleeding profusely as the result of a car accident. You are sure he will die unless he receives a blood transfusion but he refuses blood. Can you force him to have a transfusion? Why / Why not? In terms of which principles do you base your response?
- b) What would you do if that same Jehovah's Witness patient were admitted unconscious, requiring blood to survive?
- c) What if a 10-year old child were admitted requiring blood, but whose parents are Jehovah's Witnesses and refuse to allow their child to have a transfusion? To what principle would you appeal in justifying your response?
40. Should you always tell patients the truth about their condition or are there times when lying may be justified in terms of "therapeutic privilege"? What principles support your answer?

41. In terms of which principle is confidentiality important and why? Is confidentiality an absolute requirement in medical ethics? What is a doctor's obligation in the case of dealing with an HIV positive patient who refuses to wear a condom or tell his partner that he is HIV positive?

42. It is argued that all citizens of South Africa have a right to health care. Does this mean that everybody should receive equal treatment? What principle supports your answer? Does this entail that everyone who needs a kidney transplant is entitled to receive one, or are there justified limitations?

SELF ASSESSMENT ANSWERS

Week 1

1. Please refer to the relevant chapter in Campbell, Biology and Wheater's Functional Histology (pg 12-13)
2. Please refer to the relevant chapter in Campbell, Biology and Wheater's Functional Histology (pg 33-43)
3. Please refer to the relevant chapter in Campbell, Biology and Wheater's Functional Histology (pg 33-43)

4.

- | | | | |
|-------|--------|---------|-------|
| i. D | ii. H | iii. E | iv. B |
| vi. A | vii. C | viii. G | |

5.

- | | | | |
|------|-------|--------|-------|
| i. C | ii. D | iii. A | iv. B |
|------|-------|--------|-------|

6.

- | | | | | |
|------|-------|--------|-------|-------|
| i. T | ii. T | iii. F | iv. F | vi. F |
|------|-------|--------|-------|-------|

Week 2

- | | | | |
|-------|-------|-------|-------|
| 6. T | 8. T | 9. T | 10. F |
| 11. F | 12. F | 13. T | 14. T |
| 15. T | 16. T | 17. T | 18. T |
| 19. T | | | |

- 20a. Oral stage, Anal stage, Phallic stage, Latency stage and Genital stage.
 b. Unconscious, Preconscious and Conscious
21. -Separation from parents commensurate with being able to decide the course of ones own life.
 -Attainment of a stable sexual identity.
 -Ability to form a long-term sexual relationship.
 -Attainment of a steady job or preparation for a career.
 -Attainment of a personal value system that respects both the needs of the self and the needs of others.
- 22a. F b. T c. T
 d. F e. T
- 23a. T b. T c. F
 d. T e. F f. T
- 24a. Accept the ageing body.
 b. To accept time limitation and personal death.
 c. To re-appraise relationships.
 d. To maintain intimacy in the face of significant physical, intra psychic and environmental influences.
 e. To let children go, achieve a relationship of equality with them and integrate new family members.
 f. To accept reversal of roles with elderly parents.

- g. To become a generative mentor and plan for retirement.
- h. To give play new meaning and purpose.

- 25a. Is he/she able to go up/down stairs (2 feet per step)?
- a. Is he/she able to kick a ball?
 - b. Is he/she able to walk well?
 - c. Can he/she feed himself with a spoon?
 - d. Can he drink well from a cup?
 - e. Can he put 2 or more words together?
 - f. Does he indicate toilet needs?
 - g. Does he know about 5-20 words?

- 26a. T b. T c. F
d. T e. T

- 27a. T b. F c. F
d. T e. F

Week 4

28. This will be done by producing sounds of different pitch at the level of the ear, but slightly behind the child so that the test object is out of his field of vision. The sound is produced at a distance of approximately 45cm. Sounds include vocalised "p", "ooo", shaking a rattle or crinkling a piece of paper. The child should turn towards the sound if he is able to hear it.
- 29a. This can be done by checking whether baby smiles in recognition of his mother's face.
- b. This can also be done by moving a brightly coloured object in front of baby's line of vision and checking if he visually tracks the object.

Week 5

The answers can be found in the prescribed textbook, i.e. Mosby's EMT-Basic Textbook by Walt A. Stoy and the Center for Emergency Medicine.
Child abuse and neglect- pg. 429
Behavioural Emergencies- pg. 328
Special situations- pg. 45

Week 6

- 33a) Respect for autonomy – respect your patients' rights to make their own choices and decisions regarding treatment; respect for right to self-determination
Beneficence – do good, act in terms of a patient's best interests
Non-maleficence - do no harm
Justice – fair distribution of access to health care and medical treatment
34. Beneficence requires positive action; non-maleficence is merely a negative injunction i.e. refrain from doing anything that will harm someone. Thus they are separate principles and are equally necessary. Example: a child falls into the river; in terms of beneficence you ought to jump in to try to save it; in terms of non-maleficence you are not obliged to do anything.
35. Paternalism is the interference with or limitation of a person's autonomy/liberty of action justified by reasons referring to the welfare or needs or best interests of one's

patients whose liberty is being interfered with. Conflict with principle of respect for autonomy.

36. Informed consent – agreement by patients to submit to medical interventions. To be informed. It is not enough merely to agree or sign a form. Patients must be **informed** about **understand** the nature of the intervention, they must be **competent** to give consent and consent must be **voluntary**, not coerced.
37. Principle-based ethics is concerned with the right thing to **do**, right action. Character ethics stresses the importance of what it is to **be** a good person, to act from the right motives. The manner in which one acts in terms of appropriate emotions, empathy, etc. is often just as important as what one does.
38. A very controversial question! Perhaps one could look at the way we treat animals that are suffering. Rather than prolong their pain we put them down. It can similarly be argued that it is more humane and morally better when a patient is suffering the pain and indignity of a terminal illness to put a quick end to their suffering by "killing" with a lethal injection rather than letting them die a slow and more painful death. Not everyone will agree with this argument.
- 39a) You cannot force him to have a transfusion. In terms of the principle of respect for autonomy, no competent adult can be forced to have treatment even if it will save one's life.
- b) If you know that the patient is a Jehovah's Witness and refuses blood you cannot perform a transfusion when that patient is unconscious. It is your duty to consult with relatives or friends to find out what such a patient's wishes would be.
- c) In the case of a child, the wishes of parents can be overridden by making the child a ward of the court. The court will permit a transfusion in terms of the best interests of the child.
40. The principle of respect for autonomy entails that lying would involve a failure to respect autonomy since a fully autonomous decision cannot be made when a patient does not know the truth about his/her condition. It is argued, however that in some cases where there is evidence to suggest that full disclosure could have severely detrimental effects and would cause considerable harm (e.g. possibility of suicide or severe psychological effects), a doctor can invoke "therapeutic privilege", in terms of acting in the best interests of a patient. In terms of both beneficence and non-maleficence, lying may sometimes therefore be justified although this should be the exception rather than the rule.
41. Principle of respect for autonomy. This can be overridden in the interests of the wider community. In the case of the HIV positive patient, the medical council of South Africa regard it as a moral obligation on the part of the doctor to disclose this to a partner in terms of the duty to disclose information to an endangered third party.
42. The principle involved here is the principle of justice. In an ideal world equal treatment would be required but since we do not have adequate resources to provide for total equality this necessitates a degree of discrimination. This discrimination must, however, be fair and not based on irrelevant characteristics such as race, gender, religion, language, etc. In the case of kidney transplants, a scarce resource, it is not possible to provide kidneys for all who need them. Therefore there must be clearly laid out criteria for eligibility, such as age, general health, prospects of survival etc. These should be medical criteria.

APPENDIX 1: GUIDELINES FOR VISIT TO SPES NOVA, BROWN'S SCHOOL, VALLEY TRUST AND KEH CLINICS

A. Overall objectives

1. Recognition of deviation from normal childhood development
2. Impact of abnormal development on the child's and the family's life

B. Guidelines

Please note:

- You should observe from a distance that does not distract or intimidate the child
- Record all observations and decide if appropriate for age or not
- You may use guidelines to assist you with gathering information, but you may add on as many features that you wish to/that will make your observation more complete
- Do **NOT** converse with the child/mum or physically examine child

OBSERVE

1. activity and overall behaviour (appropriate for age/reduced/excessive)
2. type of activity and range of different activities
3. any unusual features in overall physical appearance
 - nutrition
 - abnormal face or limbs or posture
 - assistive devices (e.g. crutches, wheelchair)
 - other
4. How does the child socialise with
 - mother/care-giver?
 - other children?
 - strangers?
 - staff?
5. How does the child react to surroundings in terms of interest/pleasure/play?
 - Noises?
 - Toys?
 - other objects?
 - colours?
6. Aspects of child's communication
 - Mainly sounds verbal/non-verbal such as gestures
 - Restricted/easy
 - Bidirectional between child and care giver or unidirectional
 - Means of communicating needs/pleasure/displeasure
 - Quantity and quality of verbal or non-verbal communication
7. How mobile is the child/level of gross motor functioning?
8. How well does the child manoeuvre objects/toys/pen, etc. – i.e. fine motor functioning?
9. Observe any play activity carefully
 - integrated observation of all above functions
 - type of play: none/alone/parallel to others/interacting with others in play
10. How does mother/care-giver/teacher/therapist
 - interact with child?
 - communicate with child?
 - show emotions towards child?
 - perform tasks to accommodate child's "impairments" and additional needs?

C. Timing of observation

1. Should take between 30-60 minutes
2. At any ONE or more (if possible) of the following sites/times
 - in presence of therapist/teacher/doctor
 - during a support-group session
 - in waiting area at or play area at school/clinic/hospital
 - en route to therapy area/dispensary/home

D. Additional guidelines

1. Ask yourself what the problem is (use biopsychosocial perspective)
2. What may be the underlying cause of the problem (try to work out possible medical causes from your reading)?
3. How is the problem being assessed by the parent/care-giver/family/health-workers/society/government (read about what the possible options are even if you have not been able to gather this information from your observation)?
4. Listen to and draw implications from conversations occurring in your presence to ascertain impact on child/family's life. Your observation and reading should assist as well.

REMEMBER

- Each group to compile and submit a 10 min PowerPoint presentation and written report.
- Due date: 6/6/2001 before 3pm to MEDev.
- Submission by email – details of address to be given.
- Selected groups will do a PowerPoint presentation on 11/6/2001

APPENDIX 2. Psychology: Group Assignments**Due Dates For Submission: Assignment 1: 24 May 2001. Assignment 2: 28 May 2001.**

There will be 2 group assignments to submit. Assignment 1 will focus on The Adolescence Phase. Assignment 2 will focus on The Aged. Each assignment must be a minimum of 10 typed pages. Each group will be given a topic. The objective is to report on the common patterns/themes that emerge from your data and to focus the discussion of these themes within the South African context. Submit to Ms. N. Singh or Prof. Cassimjee.

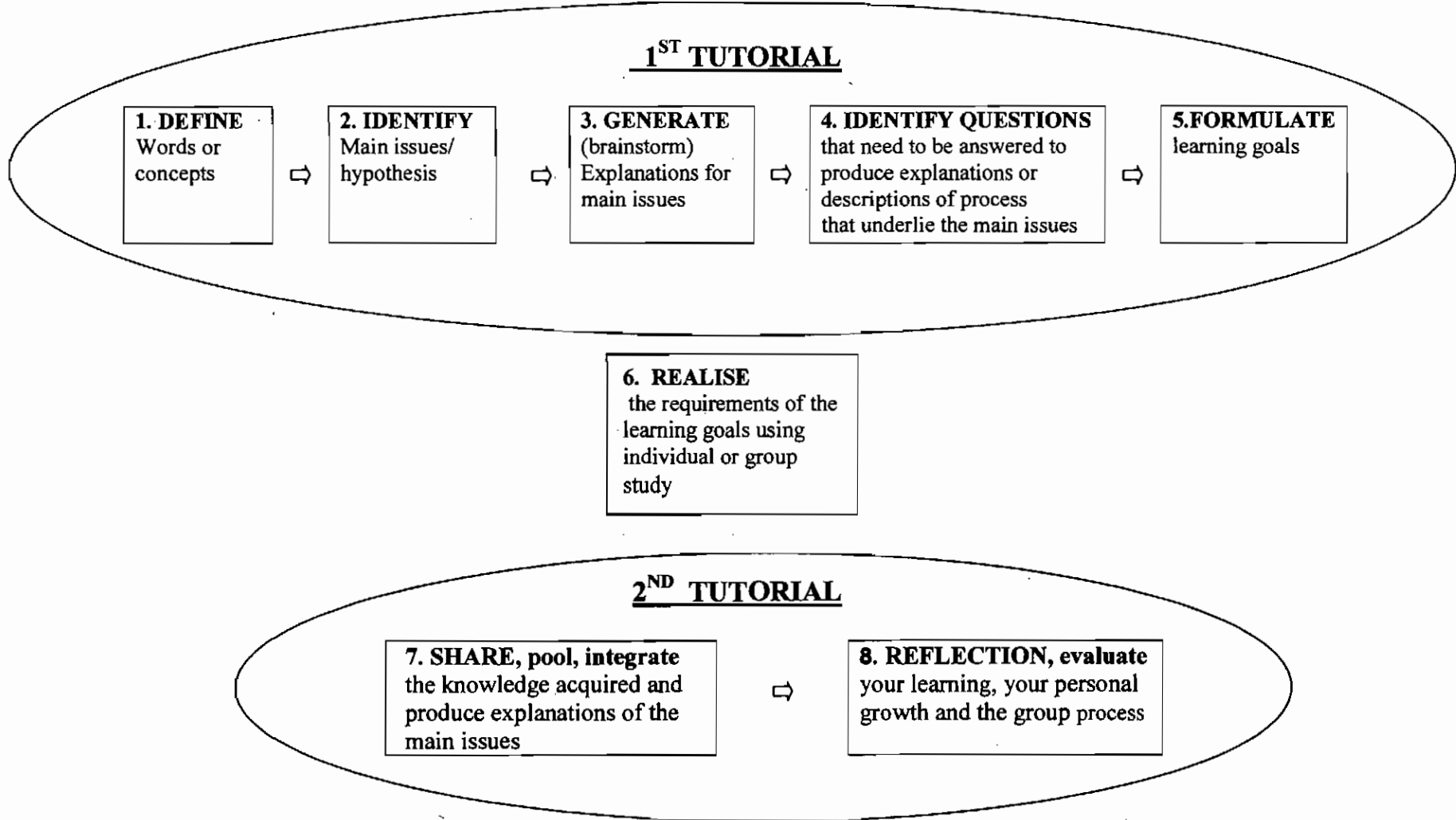
PLEASE NOTE: THESE 2 ASSIGNMENTS MUST BE EXPERIENTIALLY BASED. IT MUST COMPRISE PERSONAL INTERVIEWS AND GROUP DISCUSSIONS HELD WITH FAMILY, FRIENDS, COMMUNITY MEMBERS AND YOUR PEER GROUP.

NO THEORY/ACADEMIC LITERATURE TO BE INCLUDED!

In the week of the PRACTICAL ACTIVITIES section [15-05-2001-18-05-2001], each group of 20 students will be given a topic to research. Within each group, an appointed leader must do the presentation to the rest of the class during The Adolescent Health lecture and The Aging Process lecture. Each group leader will have 5-8 minutes in which to do their presentation. Group leaders get your transparencies and pens for your preparation from MEDev.

UNIVERSITY OF KWAZULU-NATAL

the eight PBL steps



Annexure D

Dear Facilitator

Please note the following:

- 1) Please introduce yourself to the group and get to know the students names.
- 2) Choose a **box person** to collect the tut box for every tutorial. The box is important as it contains student notices and stationary. The box person will be responsible for the maintenance of the box. The person chosen needs to collect the key from Marion in the 2nd year office. The box person is responsible for the key. (Lost keys = R60.00)
- 3) Choose a **group rep** - this person needs to attend a group rep meeting during the theme.
- 4) **Medical Dictionary** - this item needs to be present at all tutorial sessions. Choose a person in the group who will be responsible for bringing the dictionary to the tutorial sessions.
- 5) **Student assessments** - you will need to assess each student's progress during the theme. Please go to the following website in order to assess each student : <http://www.nu.ac.za/meDEV/studentassess.asp>
- 6) **Facilitator Evaluations** - the students in your group will evaluate you during the theme. Questionnaires will be put into the boxes in Week 4 of this theme.
- 7) **Theme Evaluations** - certain students will be asked to evaluate the theme. Please ensure that these students fill out the questionnaire and return it to Marion/Jennifer in the 2nd year office.
- 8) The issue of **combining tutorials** has come up time and time again. The second year does not endorse this activity. Some students have had their DP compromised because facilitators agreed to combine tutorials. This happened during the mid-year exams and students have claimed that tutorials were combined and they were not informed. They further claim that they showed up at the venue at the designated time and nobody was there and therefore did not sign the register.
Please do not bow to pressure from the students to combine tutorials, as these are the same students who impart blame on you when they are not granted their DP.
Should the need arise to change the tutorial times please formalize these requests through the second year Office.

PTO

- 9) Should there be a situation where you are **unable to do your tut**, please notify the second year office in advance so arrangements can be made.
- 10) **Please note all facilitators must sign the Register. A copy is attached for your payments, if there are no signatures you will not be paid for the date. The back-up facilitators will have to be paid.**
- 11) Please do not leave registers in the TUT box.

We hope that you enjoy facilitating this theme and we encourage you to continue facilitating in the upcoming second year themes.

Annexure E: Skills Protocol for the Collection of Blood Specimens using a Vacutainer System

COLLECTION OF BLOOD SPECIMEN USING VACUTAINER SYSTEM

1. Explain the procedure and obtain consent from patient.
2. Prepare the necessary equipment: vacutainer, needle, swabs, tubes, tape, tourniquet, sharps container.
3. Wash hands and put on gloves.
4. Check that the vacutainer needle package is intact.
5. Break the seal and remove clear plastic cover.
6. Screw disposable syringe barrel onto the needle on a tray.
7. Select venepuncture site.
8. Extend the limb and support it on a pillow.
9. Apply tourniquet to chosen limb to a pressure which allows arterial but impedes venous return.
10. Cleanse the venepuncture site with alcohol swab and allow air to dry.
11. Remove needle cover and hold syringe barrel with needle bevel uppermost.
12. Apply gentle traction with finger tips a few cm's below the insertion site.
13. Insert the needle into the vein at 15–30 degree angle and advance slowly into the vein.
14. Push appropriate specimen bottle into vacutainer barrel. If venepuncture has been successful, the bottle will fill automatically to its required volume.
15. Remove full bottle to release vacuum, then remove tourniquet.
16. Withdraw needle from vein and place a cotton wool ball over the site and apply pressure only after needle has been removed.
17. Instruct patient not to bend the affected arm if the antecubital fossa has been used.
18. Instruct patient to apply sustained pressure on the site until leakage stops.
19. Inspect puncture site before applying dressing.

TUBES:

- FBC – Purple top
- U & E – Red top/Plain tube
- LFT – Red top
- Blood culture – Aerobic/ Anaerobic
- Blood glucose – Grey top
- Clotting profile – Blue top

MEDICAL AND DENTAL PROFESSIONS BOARD

HEALTH PROFESSIONS COUNCIL OF SOUTH AFRICA



LOGBOOK FOR INTERNSHIP TRAINING

2005

i
INTRODUCTION BY JUDASA

WHY, you may ask, now that you are no longer a student, but a QUALIFIED DOCTOR, should you need to fill out another logbook?!

This, precisely, is one of the questions we wanted answered when the HPCSA proposed the compilation of the logbook. In our discussions with them, however, we realized that his logbook could be a powerful tool for interns, enabling you to get the most out of your internship. We therefore fully support the aims of the logbook as outlined below, and hope that you will spend the five minutes required to read these paragraphs:

This logbook is primarily aimed at assisting interns to see what the HPCSA believes are the procedures and disciplines you should be exposed to during your internship. It is therefore firstly meant as a tool for interns to evaluate the adequacy of your own internship training. We hope that it shall motivate you to 'push' your seniors for exposure and training in those areas which, when looking at the logbook, may seem to be deficient in your internship.

It is therefore imperative that you check the logbook by the end of the first month of each block and sign the procedures you have already completed with one of your seniors or the Head of Department. At this time you will obviously also become aware of the areas in which you are deficient and will then be able to plan and push to do these in the remaining time you will spend in that block. The responsibility of the logbook and the skills/competencies required by the interns at an accredited facility is ultimately that of the Intern Curator. You will therefore be able to appeal to him/her if you do not receive assistance in achieving the procedures that are outstanding, from your seniors in the block.

Secondly, the logbook is aimed at evaluating the hospital you are working at and seeing whether it provides an "ideal exposure". It is possible that at your hospital you will not be able to perform some of the procedures, or will not be exposed to some of the areas mentioned in this logbook, simply by the nature of the health facility and through no fault of your own. This is understood and accepted by the HPCSA and they have always intended the logbook to be able to help, and not to be a burden to interns.

However, the third aim of the logbook is that it will serve, in some cases, to evaluate interns (especially those who have received poor reports from their supervisors) and show the HPCSA which interns are avoiding exposure. Eventually it is expected that the logbook will be used to evaluate all interns, instead of using an exam after internship as some people are proposing. Currently, however, the main emphasis is in assisting you as an intern to get the **best internship possible and evaluating your training facilities**. We therefore urge you to fill out the logbooks as thoroughly and honestly as possible.

In conclusion, we hope that the logbook will assist you in becoming the best doctor you possibly can be and trust that it will help to keep the skills and competencies of South African medical doctors high, or even improve them!

Yours in the hope of better doctors and health for all South Africans,

Karl le Roux

Former Chairperson of the Junior Doctors' Association of South Africa (JUDASA)

Ps. Form 10-A is **extremely important** for your registration next year as a Community Service Medical Officer. Please ensure it is filled out and send to the HPCSA by the last month of your internship!

LOGBOOK FOR INTERNSHIP TRAINING

INTRODUCTION

The purpose of the exercise is to evaluate the intern's actual experience in a specific domain and to match it to the Medical and Dental Professions Board's concept of the ideal exposure.

It would be expected of the Intern Curator of an accredited facility to accept responsibility for the logbook and the various skills/competencies required of interns throughout the year.

The proposed logbook should be applied in conjunction with the Handbook for Internship Training.

The logbook should be discussed with the intern, completed by him/her and verified by trainers before the end of a specific rotation.

It is stressed that the outcome of the exercise should be seen either as a possible revamping of existing programmes at specific institutions or the re-appraisal of the Medical and Dental Professions Board's idea of the ideal experience required.

) Appreciation is expressed towards Dr F Potgieter who assisted the Subcommittee for Internship Training in the drafting of this document.

PLEASE NOTE THAT THIS LOGBOOK WILL APPLY TO BOTH THE ONE YEAR (12 MONTH) AND TWO YEAR (24 MONTH) INTERNSHIP TRAINING PROGRAMMES).

3
ANAESTHESIOLOGY

(To be completed by interns completing a **One year internship training programme)**

This section of the logbook is to be read in consultation with Part II of the Guidelines for Internship Training.

A. Do you feel that you have been exposed to:

		YES	NO
1.	Placement of central and peripheral lines		
2.	Airways control by mask		
3.	Airway control by endotracheal intubation:		
	a. oral and nasal		
	b. rapid sequence induction and cricoid pressure		
	c. intubation and manual axial stabilisation		
4.	Regional anaesthesia		
	a. spinal/epidural		
	b. others		
5.	Ventilation of patients:		
	a. manually		
	b. anaesthetic ventilators		
	c. principles of ICU ventilation and weaning		
6.	Anaesthetic machine checks		

B. COMPETENCIES (Acquired)

		YES	NO
1.	Pre-operative patient assessment		
2.	Post-operative assessment and recovery care		
3.	Cardio-pulmonary resuscitation		
4.	Knowledge of anaesthetic breathing systems and individual requirements		
5.	Pharmacology of drugs:		
	a. regional anaesthetic drugs		
	b. inhalation agents		
	c. induction agents		
	d. muscle relaxants and reversal		
	e. analgesics and narcotics		
	f. vasopressors, inotropes, anti-arrhythmic drugs		
6.	Peri-operative fluid management		

C. Have you had any form of continuing professional education, other than (teaching) ward rounds?

D. Does this department have and make use of protocols and/or guidelines for the management of the common medical conditions?

This logbook should be used in conjunction with the Handbook for Internship Training.

NAME : _____
HEAD OF DEPARTMENT

SIGNATURE: _____
DATE: _____

5
ANAESTHESIOLOGY

(To be completed by interns completing a TWO year internship training programme)

This section of the logbook is to be read in consultation with Part II of the Guidelines for Internship Training.

A. Do you feel that you have been exposed to:

		YES	NO
1.	Placement of central and peripheral lines		
2.	Airways control by face mask and LMA		
3.	Airway control by endotracheal intubation:		
	a. oral and nasal		
	b. rapid sequence induction and cricoid pressure		
4.	Regional anaesthesia		
	a. spinal/epidural		
	b. others		
5.	Ventilation of patients:		
	a. manually		
	b. anaesthetic ventilators		
	c. principles of ventilation and weaning		
6.	Anaesthetic machine checks		
7.	Paediatric anaesthesia		
8.	Obstetric anaesthesia		

B. COMPETENCIES (Acquired)

		YES	NO
1.	Pre-operative patient assessment		
2.	Post-operative assessment and recovery care		
3.	Resuscitation		
4.	Knowledge of anaesthetic breathing systems and individual requirements		
5.	Pharmacology of drugs:		
	a. regional anaesthetic drugs		
	b. inhalation agents		
	c. induction agents		
	d. muscle relaxants and reversal		
	e. analgesics and narcotics		
	g. vasopressors, inotropes, anti-arrhythmic drugs		
6.	Peri-operative fluid management		

C. Does the Department have regular morbidity and mortality meetings, or any other academic meetings?

D. Does this department have and make use of protocols and/or guidelines for the management of the common medical conditions and surgical procedures?

This logbook should be used in conjunction with the Handbook for Internship Training.

NAME : _____
HEAD OF DEPARTMENT

SIGNATURE: _____
DATE: _____

FAMILY MEDICINE/PRIMARY CARE

This section of the logbook is to be read in consultation with Part II of the Guidelines for Internship Training.

- A. Did you receive adequate experience and exposure during your rotation at Family Medicine/Primary Care, in the aspects listed below? If not, please list any important deficiencies (in your opinion)

B. **MEDICAL CONDITIONS EXPOSED TO:**

		YES	NO
1.	Common non-emergency health problems/diseases in primary care (e.g. TB, HIV, chronic backache etc.)		
2.	Common medical and surgical emergencies (e.g. limb fractures, acute dyspnoea, acute chest pain, etc.)		
3.	Diagnostic procedures performed by yourself (e.g. urine dipstix, microscopy of urine/vaginal smears, nebulization, ECG, nebulization, etc.)		
4.	Office therapeutic procedures performed by yourself (e.g. excision/biopsy skin lesions, joint aspiration/injections, thoracic drainage, suturing etc.)		
5.	Consultation and management of difficult situations in primary care practice, such as: breaking bad news, counselling of HIV patients, aggressive or violent patients, use of ED sedation, suicide, parasuicide, anxiety, depression, substance abuse, psychosis, etc.		
6.	Working with other healthcare providers in a team situation? (e.g. specialists clinical nurse practitioners, physiotherapists, social workers, etc.)		
7.	Did you receive adequate and specific training and/or consultation with senior colleagues on:		
	a. Rational prescribing of medicines.		
	b. Rational use of special investigations.		
	c. Appropriate referral of patients to secondary/tertiary levels of care.		
	d. Common ethical dilemmas in primary care practice.		
	e. Clinical medico-legal cases eg. Assault, child abuse, rape, drunken driving, domestic violence.		
	f. Legalities pertaining to completion of death certificates, sick-leave notes, other official documentation.		
	g. Blood transfusion.		
	h. Needlestick injury.		
	i. Medical waste disposal.		
	j. Basic radiological interpretation relevant to district level services.		

	k. Interpretation of laboratory investigations relevant to district level services.		
	l. Appropriate use of IV fluids and oral rehydration in adults and children, eg. Ringers, darrows, etc.		
8.	Initial management of eye injuries and removal of foreign bodies.		
9.	Initial management of nose bleeds.		
10.	Initial management of poisons and overdoses.		
11.	Opportunities to do disease prevention and health promotion.		
12.	Common ENT conditions eg. Epistaxis, removal of foreign objects, aural toilet, etc.		
13.	Common dermatological problems, eg. Psoriasis, acne vulgaris, eczema, etc.		
14.	Common ophthalmological conditions, eg. Conjunctivits, red eye, foreign bodies, etc.		

C. Skills:

Indicate which additional procedures were you exposed to or expected to perform:

Medical _____

Surgery _____

Pediatric _____

Accident and emergency _____

Orthopedic _____

Regional and local anaesthetic eg. Bier block, ring block etc. _____

D. Have you had any form of continuing professional education, other than (teaching) ward rounds?

E. Does this department have and make use of protocols and /or guidelines for the management of the common medical conditions?

F. Which administrative and organizational management skills did you learn during your rotation?

This logbook should be used in conjunction with the Handbook for Internship Training.

NAME: _____
HEAD OF DEPARTMENT

SIGNATURE: _____

GENERAL MEDICINE

This section of the logbook is to be read in consultation with Part II of the Guidelines for Internship Training.

- A. Do you feel that you have been exposed to the common medical conditions? If not, please list below those conditions that you feel you should have been exposed to:

B	MEDICAL EMERGENCIES TREATED	YES	NO
1.	Severe chest pain/unstable angina		
2.	Severe acute dyspnoea/acute asthma		
3.	Syncope		
4.	Cardiovascular anrhythmias, colapse, shock, CPR		
5.	Coma		
6.	Convulsions		
7.	Acute confusional state		
8.	Severe abdominal pain		
9.	Major bleeding and anaemia/bleeding tendencies		
10.	Toxic and metabolic emergencies e.g. diabetic keto-acidosis, hypoglycemia, hepatic eacephalopathy		

C	ESSENTIAL SKILLS	YES	NO
1.	Lumbar puncture		
2.	Bone marrow aspiration		
3.	Pleural paracentesis and biopsy		
4.	Joint aspiration		
5.	Peritoneal paracentesis		
6.	Liver biopsy - preparation and aftercare		
7.	Lymph gland biopsy and asperation		
8.	Skin and muscle biopsy		
9.	Proctoscopy and rectal biopsy		
10.	Catheterisation and urinalysis		
11.	ECG and interpretation		
12.	X rays: interpretation of common conditions		
13.	Technique of sputum collection		
14.	Venepuncture, cannulations, Venesection		
15.	Placement of thoracic drainage tubes		
16.	Nasogastric intubation		

D. Have you had any form of continuing professional education, other than (teaching) ward rounds?

E. Does this department have and make use of protocols and/or guidelines for the management of the common medical/surgical conditions?

This logbook should be used in conjunction with the Handbook for Internship Training.

NAME : _____
HEAD OF DEPARTMENT

SIGNATURE: _____
DATE: _____

GENERAL SURGERY/SURGICAL TRAUMA

This section of the logbook is to be read in consultation with Part II of the Guidelines for Internship Training.

- A. Do you feel that you have been exposed to the common surgical conditions? If not, please list below those common conditions that you feel you should have been exposed to:

B		ADULT SURGICAL EMERGENCIES (ENCOUNTERED AND TREATED)		YES	NO
	1.	Upper and lower GIT bleeding			
	2.	Acute surgical abdomen			
	3.	Traumatised patient including preparation for theatre			
	4.	Peripheral vascular emergencies			
C		ADULT ELECTIVE GENERAL SURGICAL CONDITIONS ENCOUNTERED AND MANAGED		YES	NO
	1.	Salivary tumours			
	2.	Oesophagus:	Reflux oesophagitis Carcinoma		
	3.	Stomach and duodenum:	Peptic ulcer and complications Carcinoma of stomach		
	4.	Hepato-biliary:	Gall stones and cholecystitis Obstructive jaundice Benign tumours of the liver Malignant tumours of the liver		
	5.	Pancreas:	Pancreatitis Carcinoma of the pancreas		
	6.	Small and large bowel:	Inflammatory bowel diseases: Ulcerative colitis Crohn's disease Diverticular disease Colorectal carcinoma Common anal conditions		
	7.	Breast:	Benign breast conditions Carcinoma of the breast		
	8.	Thyroid:	Thyrotoxicosis Tumours of the thyroid		
	9.	Hyperparathyroidism			
	10.	Soft tissue tumours:	Benign Malignant		
D		ESSENTIAL SKILLS			
	1.	Diagnostic:			
		a. Rectal examination, proctoscopy, biopsy			
		b. Upper and lower GI endoscopy observed			
		c. Excision of minor skin and subcutaneous lesions			

	d. Concept of organ protection and prevention of secondary injury		
	e. Fine needle aspiration - cytology and needle care biopsy of soft tissue lesions		
	f. Diagnostic skills for the traumatised abdomen including ultrasound and/or diagnostic peritoneal lavage		
	g. Primary and secondary assessment of trauma patient		
2.	Therapeutic:		
	a. Venepuncture and cannulation for IV infusions		
	b. Endotracheal intubation		
	c. Insertion of C V lines		
	d. Insertion of intercostal drains		
	e. Bladder catheterisation		
	f. Insertion of nasogastric tube		
	g. Performed CPR		
	h. Minor surgical procedures. Name three.		
	i. Major surgical procedures assisted. Name three.		
	j. Wound care and suturing		
	k. Exposure to debridement		
	l. Suture of wounds		

E. Have you had any form of continuing professional education point than (teaching) ward rounds?

F. Does this department have and make use of protocols and/or guidelines for the management of the common surgical conditions?

This logbook should be used in conjunction with the Handbook for Internship Training.

NAME : _____
 HEAD OF DEPARTMENT

SIGNATURE: _____
 DATE: _____

14
MENTAL HEALTH

(To be completed by interns completing a two year internship training programme as part of the Family Medicine/Primary Care rotation)

This section of the logbook is to be read in consultation with Part II of the Guidelines for Internship Training.

A. Clinical cases seen and managed

1. New cases seen and clerked

Number	Primary Diagnosis

2. Cases presented to supervising psychiatrist or medical officer

Number	Primary Diagnosis

3. Follow-up cases seen for review at OPD

Number	Primary Diagnosis

4. Groups co-facilitated or conjoint interviews undertaken

Number	Type

5. Assessments in terms of the Mental Health Care Act

Number	Assisted	Involuntary

B. Psychiatric disorders exposed to:

Schizophrenia and psychotic disorders	
Depression	
Anxiety Disorders	
Suicidal Risk Behaviour	
Alcoholism/substance abuse	
Personality Disorder	
Others	

C. Teaching sessions attended:

D. Psychiatric ethical issues addressed/discussed:

Confidentiality	
Informed consent in psychiatric patients	
Competence	
Others	

This logbook should be used in conjunction with the Handbook for Internship Training.

NAME : _____
 HEAD OF DEPARTMENT

SIGNATURE: _____
 DATE: _____

OBSTETRICS AND GYNAECOLOGY

This section of the logbook is to be read in consultation with Part II of the Guidelines for Internship Training.

- A. Do you feel that you have been exposed to the common obstetric conditions? If not, please list below those conditions that you feel you should have been exposed to;

PROCEDURES PERFORMED:

B	OBSTETRICS	YES	NO
1	Artificial rupture of the membranes		
2	Caesarean section - lower segment only		
3	Episiotomy		
4	External cephalic version		
5	Manual removal of the placenta - in theatre		
6	Normal vertex delivery		
7	Postpartum sterilisation		
8	Twin delivery - vaginally		
9	Vacuum extraction		
10	Forceps delivery (pelvic outlet only)		
11	Emergency management of:		
	a. Eclampsia		
	b. Fetal distress		
	c. Impacted shoulders		
	d. Inversion of the uterus		
	e. Postpartum haemorrhage		
	f. Prolapse of the umbilical cord		
12.	Resuscitation of the newborn by: clearing of the airways, endotracheal intubation and insertion of an umbilical catheter.		
13.	Speculum examination in a case of:		
	a. Antepartum haemorrhage		
	b. Prelabour preterm rupture of the membranes		
C.	GYNAECOLOGY		
1.	Bartholin's cyst or abscess - incision/drainage of marsupialisation		
2.	Biopsy of a lesion of the vulva, vagina, cervix		
3.	Cautery of condylomata acuminata		
4.	Colpopuncture		
5.	Colpotomy		
6.	D and C, Diagnostic		
7.	Evaluation of the uterus - incomplete miscarriage		
8.	Insertion of an intra-uterine contraceptive device		
9.	Laparotomy for ectopic pregnancy		
10.	Manual vacuum aspiration of the uterus		
11.	Staging of Ca cervix - clinically		
12.	Vulval haematoma - drainage		
13.	Wet smear microscopy - urine, vaginal discharge		

	14.	Medical management of:		
		a. Dysfunctional uterine bleeding		
		b. Menopausal symptoms		
		c. Pelvic inflammatory disease - Grade 2 and Grade 3		
		PROCEDURES WITNESSED:		
D		OBSTETRICS		
	1.	Forceps delivery		
	2.	Ultrasonography		
	3.	Mc Donald suture placement		
	4.	Third degree tear - repair operation		
	5.	Breech delivery		
E		GYNAECOLOGY		
	1.	Colposcopy		
	2.	Cone biopsy		
	3.	Cryotherapy		
	4.	Hysterectomy - Abdominal and vaginal		
	5.	Laparoscopy and laparoscopic sterilisation		
	6.	Oestrogen implant		
	7.	Colposuspension		

F. Have you had any form of continuing professional education other than (teaching) ward rounds?

G. Does this department have and make use of protocols and/or guidelines for the management of the common obstetric and gynaecological conditions?

H. Were the guidelines pertaining to saving-mothers and saving-babies reports discussed with you?

This logbook should be used in conjunction with the Handbook for Internship Training.

NAME: _____
HEAD OF DEPARTMENT

SIGNATURE: _____
DATE: _____

ORTHOPAEDICS/ORTHOPAEDIC TRAUMA

This section of the logbook is to be read in consultation with Part II of the Guidelines for Internship Training.

- A. Do you feel that you have been exposed to the common orthopaedic conditions? If not, please list below those common conditions that you feel you should have been exposed to:

B	ACUTE ORTHOPAEDIC CONDITIONS ENCOUNTERED AND TREATED	YES	NO
1.	Primary management and reduction of dislocated major joints		
2.	Joints injuries e.g. intra-articular fracture and ligament injuries		
3.	Closed treatment of common metaphysial fractures		
4.	Nerve and tendon injuries		
5.	Diagnosis and management of acute spinal and pelvic injuries		
6.	Management of open fractures		
7.	Management of finger and hand injuries		
8.	Radiology of common conditions		
C	"COLD" ORTHOPAEDIC CONDITIONS EXPOSED TO:		
1.	Non-traumatic back pain		
2.	Arthritis of joints		
3.	Systemic disease manifesting in muscular skeletal signs and symptoms		
4.	The physiotherapy and rehabilitation of musculo-skeletal injury		
D	SKILLS		
1.	Application of P.O.P to major joints and limbs		
2.	Application of skin traction to lower limb		
3.	Gallows traction		
4.	Skin traction to upper limb		
5.	Insertion "Steinman" or Denham pins in proximal tibia		
6.	Regional and local anaesthetic techniques e.g. Bierblock and Ring blocks		
7.	Infection of bone and joints (including asperation)		
8.	To learn how to protect the cervical spine		
9.	Log-rolling of a patient		
10.	Glasgow-coma scale		

E. Have you had any form of continuing professional education other than (teaching) ward rounds?

F. Does this department have and make use of protocols and/or guidelines for the management of the common surgical conditions?

This logbook should be used in conjunction with the Handbook for Internship Training.

NAME: _____
HEAD OF DEPARTMENT

SIGNATURE: _____
DATE: _____

20
PAEDIATRICS

This section of the logbook is to be read in consultation with Part II of the Guidelines for Internship Training.

- A. Do you feel that you have been exposed to the common medical conditions? If not, please list below those common conditions that you feel you should have been exposed to:

B	1.	Exposed to paediatric emergencies. Name three.		
			YES	NO
	2.	Management of severe malnutrition		
	3.	Exposed to immunisation regime		
	4.	Management of infant feeding problems		
	5.	Insight into infant mortality patterns		
C		PROCEDURES PERFORMED (SKILLS)		
	1.	Blood pressure management		
	2.	Growth monitoring (Road to Health Card)		
	3.	ECG plus interpretation		
	4.	Interpretation of X rays: skull, chest and abdomen		
	5.	Venepuncture. IV line insertion, Intra osseous infusion		
	6.	Lumbar puncture		
	7.	Bone marrow aspiration		
	8..	Biopsies: lymph glands, skin lesions		
	9.	Neonatal resuscitation		
	10.	Paediatric resuscitation		
	11.	Manage and treat dehydration - oral and IV therapy - fluid and electrolyte balance		
	12.	Interpretation standard lab report		
	13.	Side ward urine tests, HB and glucose tests		

- D. Have you had any form of continuing professional education other than (teaching) ward rounds?

- E. Does this department have and make use of protocols and/or guidelines for the management of the common medical conditions?

F. QUESTIONNAIRE

1. Name two (2) conditions, treated, for which no Protocols exist.

2. Total number of Admissions to paediatric ward (per month).

3. Name the five (5) most common conditions admitted.

4. Name five (5) most common conditions treated in out patients area.

5. Notifiable conditions seen and treated. Name two (2).

This logbook should be used in conjunction with the Handbook for Internship Training.

NAME: _____
HEAD OF DEPARTMENT

SIGNATURE: _____
DATE: _____

Ethics and Human Rights

- A. Do you feel that you have been exposed to the most important ethical and human rights aspects of medical practice? If not, please list the issues which you feel were not addressed?

B	ETHICAL/HUMAN RIGHTS DILEMMAS ENCOUNTERED	YES	NO
1.	Patient refusing treatment		
2.	Patient requesting access to their own folder		
3.	Patient requesting a second opinion		
4.	Treating a prisoner-patient		
5.	Responding to a request for a medical report on a patient from a third party (police, employer, insurance, etc.)		
6.	Withholding or withdrawing treatment from a terminally ill patient		
7.	Encountering a case of child or adult sexual abuse		
8.	Being requested to break confidentiality		
9.	Asked to abuse your position as a doctor e.g. provide a false sick certificate		
10.	Witnessed unkind behaviour by a colleague that has not been reported or acted on		
11.	Subject a patient to invasive investigation or treatment without obtaining informed consent		
12.	Had no access to consultation for ethical dilemmas you faced		
C.	SKILLS		
1.	Informing a patient or their family of bad news		
2.	Counselling a family on the management of a patient		
3.	Obtaining informed consent for any invasive procedure		
4.	Obtaining informed consent from the parent or guardian of a child		
5.	Obtaining informed consent from the guardian of mentally ill patient		
6.	Obtaining informed consent for a participant in a research study		
7.	Counselling a patient with an infectious disease (e.g. TB, STD or HIV) to inform their partner or family members		
8.	Informing a patient of channels available to them for redress of a grievance (e.g. Hospital Complaints Mechanism, Human Rights Commission, etc.)		
9.	Ever consulted the Bill of Rights contained in the Constitution for purposes of patient care		
D	KNOWLEDGE		
1.	Understand the application of the HPCSA Guidelines on HIV to the situation of a potential needlestick injury		
2.	Are you aware of the Patients Rights Charter?		
3.	Do you know what are the rights contained in the Patients Rights Charter?		
4.	Do you know what are the responsibilities of patients contained in the Patients Rights Charter?		
5.	Do you have a clear knowledge of a doctor's duties?		
6.	Do you know how to think through and deal with an ethical dilemma?		

E. Questionnaire

Describe two circumstances where you had to adapt your management plans to the cultural-expectations of a patient.

Describe two circumstances not mentioned above where your encountered a human rights conflict. Explain how you dealt with the problem

HEALTH PROFESSIONS COUNCIL OF SOUTH AFRICA

REGULATIONS DEFINING THE SCOPE OF THE PROFESSION OF MEDICINE

The Minister of Health intends, in terms of section 33(1), read together with section 61(2) of the Health Professions Act, 1974 (Act No. 56 of 1974), and on the recommendation of the Health Professions Council of South Africa, to make the regulations in the Schedule.

Interested persons are invited to submit any substantiated comments or representations on the proposed regulations to the Director-General: Health, Private Bag X828, Pretoria, 0001 (for the attention of the Director: Human Resource Development), within one month of the date of publication of this notice.

SCHEDULE

Definitions

1. In these regulations "the Act" shall mean the Health Professions Act, 1974 (Act No. 56 of 1974), and any expression to which a meaning has been assigned in the Act shall bear such meaning, and, unless inconsistent with the context -

"**board**" means the Medical and Dental Professions Board established in terms of section 15(1) of the Act;

"**medicine**" means the profession of a person registered as a medical practitioner or an intern in medicine in terms of the Act; and

"**section**" means a section of the Act.

Scope of the profession

2. The following acts are hereby specified by the board under section 33 as acts which, for the purposes of the Act, shall be deemed to be acts pertaining to the medical profession:

- (1) The physical examination of any person;
- (2) Performance of procedures and/or the prescribing of medicines and managing the health of a patient (prevention, treatment and rehabilitation);
- (3) Advising any person on his or her physical state;
- (4) On the ground of information provided by any person or obtained from him or her in any manner whatsoever –
 - (a) diagnosing such person's physical state;
 - (b) advising such person on his or her physical state;

- (c) administering, selling or prescribing for such person any medicine or treatment; or
 - (5) Prescribing, administering or providing any medicine, substance or thing; or
 - (6) Any other act specially pertaining to the medical profession based on the education and training of medical practitioners as approved by the board from time to time.
3. The provisions of regulation 2 shall not be construed as prohibiting the performance of the acts specified therein by -
- (a) any person registered under the Medicines and Related Substances Act, 1965 (Act 101 of 1965), the Pharmacy Act, 1974 (Act 53 of 1974), the Health Act, 1977 (Act 63 of 1977), the Nursing Act, 1978 (Act 50 of 1978), the Chiropractors, and Homeopaths and Allied Health Services Professions Act, 1982 (Act 63 of 1982) from performing such acts in accordance with the provisions of such Acts;
 - (b) an intern working at an institution recognised by the council from performing any function or issuing any certificate or other document which in terms of any law, other than this Act, may be or is required to be performed or issued by a medical practitioner, whether described in such law as a medical practitioner or by any other name or designation, or describing himself or herself as a medical practitioner in connection with the performance of any such function or the issuing of any such certificate or document;
 - (c) a student intern under the supervision of a medical practitioner in the course of his or her training;
 - (d) a dentist in the course of performing any act falling within the scope of dentistry or from using any name, title, description or symbol normally associated with his or her profession; or
 - (e) any person in the course of bona fide research at any institution approved for that purpose by the Minister.

Registration a prerequisite to practice

4. Any person who wishes to perform any of the acts prescribed in regulation 2 shall apply in the prescribed manner to the board for registration as a medical practitioner and submit proof of having complied with the prescribed requirements for such registration.

Repeal and Commencement

5. These regulations shall come into operation on the date of promulgation of the Health Professions Amendment Act.

M.E.TSHABALALA-MSIMANG

MINISTER OF HEALTH

DATE

LIST OF ETHICAL ISSUES TO WHICH INTERNS SHOULD BE EXPOSED

1. **Obtaining informed consent from patients including taking informed consent from the parent of a child, from the guardian of a mentally ill patient and obtaining consent to participate in a research study.**
2. **Respect for confidentiality. It is necessary to have some insight into the limits of confidentiality and how, for example, confidentiality would be broken if now wished to inform the partner of a patient with an infectious condition of the risk contagion.**
3. **Respect for the dignity of persons (autonomy).**
4. **Informing patients of bad news.**
5. **Counselling families.**
6. **Procedures for withholding or withdrawing treatment and communicating with families regarding this.**
7. **Knowledge of potential human rights abuses and the mechanisms to report these.**

YM

Update: October 2004

UNIVERSITY OF KWAZULU-NATAL

STUDENT INTERN GUIDE

2010

CONTENTS

	Page
Introduction and Welcome	3
General Information	4
Year Blocks & Examination Dates	5
Department of Surgery	9
Department of Medicine	23
Department of Obstetrics & Gynaecology	32
Department of Paediatrics	37
Department of Psychiatry	47
Department of Family Medicine	50

MBCbB : FIFTH YEAR 2010

Welcome to the final hurdle in your steeplechase through the undergraduate medical programme at the Nelson R Mandela School of Medicine and congratulations on your success thus far.

You would find that the final year is where you would see the “big picture”, where you would be able to revisit material covered during the past 4 years, consolidate on this material and discover and apply the new knowledge and skills encountered. In addition, you would mature into the competent practitioner by utilizing the knowledge, skills and attitudes acquired over the years. The application of ethical principles to clinical decisions and to personal circumstances would aid in attaining the degree of maturity required for practice.

During this year you will encounter 6 disciplines which represent the majority of clinical practice during the internship period and in general practice. Your rotations through these disciplines will assist in your achieving the clinical and personal maturity required for a successful internship period.

Remember that hard work and perseverance is what is needed to succeed during this year in each clinical discipline. The earlier years have equipped you with the tools – of discovery, initiative, self-directed learning, a problem-based learning approach and a problem oriented approach – all of which promotes life-long learning. Use the learning skills. Use all available resources. View teachers as a resource (*c.f.* internet, textbook, journal, etc.) and not the ultimate source of information or knowledge. Deep learning leads to better understanding of principles and learning in this way means that you would be learning for life rather than swatting for an examination. Enquire, question, challenge – always! This will ensure that you obtain the best evidence for your clinical decisions and don't fall into the trap of doing things as they had been done by your predecessors without understanding the basic reason behind the decision.

Teach yourself well. There is no better teacher than yourself! The most valuable resource in your arsenal is the patients you encounter in your daily lives as junior interns, interns, community service officers and in independent practice. This resource must be respected, protected and preserved. Every patient encounter will teach you something. The mark of a mature clinician is the one who savours every encounter and sees it as a learning experience and an encounter with another Human Being - rather than a tedious clerking in preparation for a tutorial or as part of the crowd that needs to be cleared off your bench. Remember that Patients are people – talk to them as people and not as a disease or a condition. Respect their rights and requests. Learn from them! Learn with them! Teach them! Let them teach you! Love them! Live their lives (display empathy and not sympathy)!

The Faculty of Medicine (locally, nationally and globally) awaits you. Complete the journey!

This document provides you with information about your rotations, groups, timetables, tutorials, tutors, requirements of each clinical discipline, assessment criteria and assessments examination timetables and rules pertaining to the disciplines and the faculty for the final year.

Please note that while the information contained herein is the most recent and updated information the faculty handbook or any addendum published during the course of the year takes precedence over the information contained in this document. Please refer to the rules in the handbook.

The tables below detail the rotations, sessional dates, block dates and assessments dates for the final year 2010.

CLINICAL GROUPINGS

For the purpose of accommodating departmental assessment requirements the rotations through the 6 disciplines has been group into 2.

Clinical Group 1	Clinical Group 2
Obs & Gynae	Medicine
Surgery	Paeds
Psychiatry	Family Medicine

ROTATIONS (per student groups)

	Clinical Group 1 (Med, Paeds, FamMed)	Clinical Group 2 (Surgery,O&G, Psych)
Semester 1	A, B, C	D, E, F
Semester 2	D, E, F	A, B, C

Student Groups A, B, C will rotate through clinical group 1 during the first semester while Groups D, E, F will rotate through clinical group 2. All disciplines, except Internal Medicine, will have end of block examinations. The Internal Medicine rotation will have an End-of-Block clinical and portfolio examination and the MCQ will be written at the end of the relevant semester.

THE SESSIONAL DATES, BLOCK DATES AND EXAMINATION DATES.

Semester 1 : 21 weeks	VAC 4/52	Semester 2: 21 weeks
11/01/2010- 04/06/2010	05/06-11/07	12/07/2010-03/12/2010
Block 1: 13/01-26/02 Block 2: 01/03-16/04 Block 3: 19/04-04/06	Block Dates	Block 4: 12/07-25/08 Block 5: 26/08-08/10 Block 6: 11/10-26/11
Block 1: 24/02-26/02 Block 2: 14/04-16/04 Block 3: 31/05-02/06	Examination Dates	Block 4: 23/08-25/08 Block 5: 06/10-08/10 Block 6: 22/11-24/11

*

PUBLIC HOLIDAYS		
DATE	DAY	HOLIDAY
1 January	Friday	New Year's Day
21 March	Sunday	Human Rights Day
22 March	Monday	In lieu of Sunday
02 April	Friday	Good Friday
05 April	Monday	Family Day
27 April	Tuesday	Freedom Day
1 May	Saturday	Workers Day
16 June	Wednesday	Youth Day
9 August	Monday	National Women's Day
24 September	Friday	Heritage Day
16 December	Thursday	Day of Reconciliation
25 December	Saturday	Christmas Day
26 December	Sunday	Day of Goodwill
27 December	Monday	In lieu of Sunday

RELIGIOUS HOLIDAYS (DAYS OF CONDONED ABSENCE)		
DATE	DAY	HOLY DAY
09 September	Thursday	Eid-Al-Fitr
10 September	Friday	Rosh Hashanah <i>(commences 6pm previous evening)</i>
18 September	Saturday	Yom Kippur <i>(commences 6pm previous evening)</i>
05 November	Friday	Diwali
16 November	Tuesday	Eid-Al-Adhah

5TH YEAR MB ChB 2010

END OF BLOCK EXAMINATION TIMETABLE (Provisional)

❖ These dates and times are provisional and may change. Any change will be communicated to you via an official document.

Block	Date	Med	Pharm	Path Med	O-G	Psych	Orth
	22 Mon			LAN		Vignette EH (9-12)	
Feb	23 Tues			SEM/QIP	OSCE -EH	long case Dbn+PMB	OSCE LAN 9-11
	24 Wed	clinical	OSCE (LAN) 11h30-13h30	OSCE		long case Dbn	ORTHO Clin
	25 Thur	clinical	clinical	clinical	OSPE - Dept		
	26 Fri		clinical			Viva (Dbn)	Clinical and viva

Block	Date	Med	Pharm	Path Med	O-G	Psych	Orth
	12 Mon			LAN		Vignette EH (9-12)	
April	13 Tue			SEM/QIP	OSCE -EH	long case Dbn+PMB	OSCE LAN 9-11
	14 Wed	clinical	OSCE (LAN) 08h30-10h30	OSCE		long case Dbn	ORTHO Clin
	15 Thur	clinical	clinical	clinical	OSPE - Dept		
	16 Fri		clinical			Viva (Dbn)	Clinical and viva

Block	Date	Med	Pharm	Path Med	O-G	Psych	Orth
May	28 Friday			LAN			
June	31 Mon		OSCE (LAN) 11h30-13h30	SEM/QIP		Vignette EH (9-12)	ORTHO Lan11h30- 13h30
	01 Tue	clinical	Clinical	OSCE	OSCE -EH	long case PMB+DBN	
	02 Wed	clinical	clinical	clinical		long case Dbn	ORTHO Clin
	03 Thur				OSPE - Dept		
	04 Fri	MCQ (LAN) 9-12				Viva (Dbn)	Clinical and viva

Block 4	17/08	Med	Paeds	Gen med	Q+G	OSPE	Surg
	20 Fri			LAN		Vignette EH (9-12)	
Aug	23 Mon		OSCE (LAN) 08h30-10h30	SEM/QIP	OSCE -EH	long case Dbn+PMB	OSCE LAN 9-11
	24 Tue	clinical	clinical	OSCE		long case Dbn	ORTHO Clin
	25 Wed	clinical	clinical	clinical	OSPE - Dept	Viva (Dbn)	Clinical and viva

Block 5	16/10	Med	Paeds	Gen med	Q+G	OSPE	Surg
Oct	11 Mon					Vignette EH (9-12)	
	05 Tue			LAN		long case Dbn+PMB	OSCE LAN 9-11
	06 Wed	Clinical	OSCE (LAN) 08h30-10h30	SEM/QIP	OSCE -EH	long case Dbn	ORTHO Clin
	07 Thur	clinical	Clinical	OSCE			
	08 Fri		clinical	clinical	OSPE - Dept	Viva (Dbn)	Clinical and viva

Block 6	16/11	Med	Paeds	Gen med	Q+G	OSPE	Surg
	19 Fri			LAN			
Nov	22 Mon		OSCE (LAN) 08h30-10h30	SEM/QIP		Vignette EH (9-12)	
	23 Tue	clinical	clinical	OSCE	OSCE -EH	long case Dbn+PMB	OSCE LAN 9-11
	24 Wed	clinical	clinical	clinical		long case Dbn	ORTHO Clin
	25 Thur				OSPE - Dept		
	26 Fri	MCQ (LAN) 9-12				Viva (Dbn)	Clinical and viva

Pre Exam Board Meeting : Monday 29 November 2010 (14h00-16h00)
FINAL YEAR EXAM BOARD MEETING : Tuesday 30 NOVEMBER 2010 (9h00-12h00)

GENERAL SURGERY & ORTHOPAEDICS 2010

DEPARTMENT OF SURGERY

During their six weeks in the surgical block, students will work in one of the hospitals ie. King Edward VIII, Addington, Prince Mshiyeni and RK Khan Hospital general surgical wards for five weeks, and spend one week in Orthopaedics as well as additional sessions as indicated on your general surgical ward roster. Attendance registers will be kept and will go towards the DP certificate.

The DP requirement for General Surgery is 80% attendance at structured tutorials. A register of attendance will be kept. A 100% attendance at (i) wards rounds and (ii) intakes is required. A register of attendance at wards rounds and intakes will be kept. Furthermore 100% participation is expected for (I) Examinations as per logbook requirements, (ii) procedures as per logbook requirements, and (iii) observation of procedures as per logbook requirements. Documentation of these activities in the logbook is mandatory and signatures of supervisors must be sought prospectively. Signatures will not be given retrospectively. Reasons for absence from tutorials ward rounds and intakes must be given in writing with documentation to the final year departmental co-ordinator.

The end-of-block examinations will be exit examinations with an external examiner present to moderate the examinations. The DP requirement for Paediatric Surgery and Orthopaedics is 80% attendance at tutorials and small group teaching. Failure to comply will exclude you from the end of block examinations. .

ORIENTATION

All students commencing the block in King Edward VIII Hospital must gather in L3 at 08h00 on the first Monday morning of the Block. Details of the block will be given, questions will be answered and the Duly Performance (DP) requirements will be discussed and explained. Each group must elect a group leader who will liaise with the Departmental Co-ordinator. Each group of students allocated to a Unit must have a group leader as well. He/ She must draw a list of topics and allocate students per topic.

Students will be attached to units on a full-time basis from 08h00 to 17h30 daily except for the meetings and teaching arrangements indicated in the time-table. Students will work Saturday mornings until 12h00.

Saturday afternoons and Sundays will be free except when the unit to which they are attached is on intake.

Student Interns will be allocated three patients through the Senior Registrar on their wards. They will be responsible, through the Registrar, for the care of these patients and for organizing their investigations for diagnosis and management. The Registrar will check and sign the investigation requests. They should also have knowledge of other patients in the ward, and should "read up" about their patients' diseases and be prepared to discuss the patients' problems at Consultant ward rounds.

Ward Work

Students will perform ward rounds daily with the Registrar and ward rounds with the Consultant. They will clerk patients allocated to them. They will attend Outpatient and Consultant Clinics and accompany their patients to special investigations.

Intake Days

They will participate on intakes during the whole of their six week stay in the general surgical wards and will participate during the intake and in the operating theatre. They will retire with the permission of the Senior Registrar or Consultant on intake. They will attend the post-intake ward round including

weekends.

Students will be allocated to Orthopaedics for one week.(this includes the Saturday and Sunday prior to the commencement of the week in Orthopaedics) During this period they will only do Orthopaedics and they are excused from General Surgery. Students in General Surgery will also be allocated to spend additional hours in Orthopaedics as indicated on the Ward/Unit Roster.

The Departmental Co-ordinator is Professor AA Haffejee. Co-ordinators for the following hospitals are. Prince Mshiyeni – Mr S Maseme; RK Khan – Mr A Gounden; Addington - Mr D Steer.

The three surgical floors are Wards S2, S3 & S4 at King Edward V111 Hospital. Each floor is subdivided into two units designated by a colour. Student interns will be allocated to a unit by the tutor on each floor. Students attached to other hospitals will be distributed by the consultants in charge.

They will also participate in the general instructions for Student Interns in side ward techniques and ECG procedures.

Apart from their general duties on the wards in the care of patients in the wards, each student intern should at all times have the care of patients allocated to them by the tutor on each floor. These will be looked after, in consultation with the registrars, by the student intern. The student intern will clerk the cases, accompany the patient to x-ray, endoscopies, operation, etc. All the investigations required will be ordered by the student intern who must liaise with the Intern for after-hours care of the patient.

The Student Intern should keep a record of the procedures that he/she has witnessed or participated in during his/her stay in the Department of Surgery.

GENERAL

Students must attend all structured teaching and must be punctual as considerable effort and detail is entailed to affect these sessions. Advanced notice must be given if students cannot attend for any reason – this is important.

Students are NOT part of service and the Department will not use students for service. In the unlikely event of this occurring students must advise the unit consultants and the Departmental co-ordinator.

Students must continue to read and revise the subject matter of Surgery as it is essential to have a sound knowledge of the subject to be able to manage patients and do well in the clinical viva examinations.

Use of textbooks and library must continue throughout the year.

Students must ensure an active involvement in the care of their allocated patients. Involvement with the special investigations, side room investigations, specials procedures and operations is important.

Students must volunteer any problems and utilize existing facilities. The Unit Consultants, the final year co-ordinator and the Head of Department are always available. Student Support Services at the Medical school are always available to help students.

Students are not to sign special investigations forms or prescribe treatment as they are not qualified doctors. But students must understand the relevance of their patients' investigations and management.

NB. The teaching program complies with the Health Professions Council of South Africa.(HPCSA) requirements in the final year. Students must attend all aspects of the teaching program to qualify for a DP certificate at the end of the year.

Examinations

The end-of-block examination will be an exit examination and may take place in the presence of an External Examiner.

Assessment:

1. Surgical Clinical case (30%),
2. Orthopaedic assessment (20%)
3. General Surgery OSCE (30%)
4. Surgical Viva (20%),

A candidate will pass the examination if:

- i) he/she obtains an aggregate mark of at least 50%
- ii) he/she obtains at least 50% in any 2 out of the following 3 sections, i.e. (Surgical Clinical Case, OSCE and/or Orthopaedic Clinical Case) and
- iii) he/she obtains a sub-minimum of at least 40% in the Surgical Clinical Case

CORE SYLLABUS IN GENERAL SURGERY FOR FINAL YEAR STUDENTS

GENERAL TOPICS

- Fluid and electrolytes
- Nutritional support including parenteral nutrition
- Wound healing
- Shock and organ dysfunction
- Blood and blood products

GIT

- Causes of dysphagia – investigations and management
- Carcinoma of the oesophagus
- Gastro-oesophageal reflux disease
- Peptic ulcer disease and complications
- Pathophysiology and management of gastric outlet obstruction
- Intestinal obstruction including hernias
- Colorectal malignancies
- Inflammatory bowel disease including diarrhoeal diseases and tuberculosis
- Tropical diseases
- Minor ano-rectal conditions
- Portal hypertension

- Obstructive jaundice
- Pathophysiology and management of cholelithiasis
- Acute and chronic pancreatitis
- Pancreatic carcinoma and periampullary carcinomas
- Appendicitis

ENDOCRINE

- Thyroid diseases benign
- Thyroid malignant disease
- Hyperparathyroidism
- Adrenal cortical disease
- Adrenal medullary disease
- Insulinoma
- Gastrinoma

TRAUMA

- Blunt and penetrating chest trauma
- Blunt and penetrating abdominal trauma
- Management of head injury including post-traumatic seizures
- Vascular trauma
- Principles of burn management

VASCULAR

- Peripheral vascular disease
 - Aorto-iliac disease
 - Fem-pop disease
 - Tibio-peroneal disease
- Carotid artery disease
- Abdominal aortic aneurysms
- Infective vascular aneurysms
- Diabetic foot sepsis
- Acute arterial occlusion
- Venous diseases

SKIN AND SOFT TISSUES

- Melanoma
- Benign skin tumours
- Soft tissue sarcomas
- Skin infections
- Breast

5TH YEAR VASCULAR BLOCK

TOPICS

- | | | |
|----|---|----------------------------|
| 1. | History/examination vascular pt.
Basic vascular terminology. | Prof. JV Robbs/MrB Pillay |
| 2. | Vascular Trauma | Prof. JV Robbs/Mr B Pillay |
| 3. | Aneurysms | Prof JV Robbs/Mr B Pillay |
| 4. | Carotid trauma | Prof JV Robbs/Mr B Pillay |
| 5. | Peripheral Vascular Disease | Prof JV Robbs/Mr B Pillay |
| 6. | Venous Diseases | Prof JV Robbs/Mr B Pillay |

Thursday	08h00 – 11h00	-	Vascular OPD Clinic
	11h00 – 12h00	-	Vascular Lab.
	12h00 – 14h00	-	Vascular Grand Round
	14h00 – 15h00	-	Vascular Tutorial

Learning Program for Ward S2

Monday	08h00-16h00 08h00-09h30 09h30-10h30 10h30 14h00-16h00	Operating session Business round with registrars Consultant round Surgical outpatients Case presentations (L5) (Prof. Madiba)
Tuesday	07h30-09h30 10h00-11h30 12h00-13h00 14h00-15h00 16h00-17h00	Tutorial (Orthopaedics) Consultant round Tutorial – L5 (Prof. Haffejee) Surgical pathology tutorial Surgical Forum
Wednesday	08h00-09h00 09h00-13h00 14h00-16h00	TPN Ward Round (S2) Elective Admissions Orthopaedics
Thursday	08h00-16h00 08h00-09h30 14h00-15h00 15h00-16h00	Operating sessions Business round with registrars Vascular Round (Prof. Robbs) IALCH Seminar Room Ward D1 West Tutorial Paediatric Surgery IALCH - 4 th Floor Lecture Theatre
Friday	08h00-09h00 09h00-10h30 10h30-11h30 11h00-12h00 14h00-16h00	Business round with registrars Ward round Surgical outpatients Tutorial – L5 (Prof Muckart) Orthopaedics (Room 50) - weeks 1 & 4
Saturday	07h45-09h00 09h30	Surgery Seminar Consultant round

* See roster

Learning Program for Ward S3

Monday	08h30-09h30 09h30-10h30 10h30-13h00 14h00-16h00	Business round with registrars Consultant round Surgical Outpatients Case presentations – L5 (Prof. Madiba)
Tuesday	07h30-09h30 08h00-16h00 10h00-11h30 12h00-13h00 14h00-15h00 16h00-17h00	Tutorial (Orthopaedics) Operating Sessions Consultant round Tutorial – L5 (Prof. Haffejee) Surgical pathology tutorial Surgical Forum
Wednesday	08h00-09h00 09h00-16h00 09h00-16h00 14h00-16h00	Business Round with Registrars Operating Sessions Surgical Outpatients Orthopaedics
Thursday	08h00-09h00 09h00-12h00 14h00-15h00 15h00-16h00	Business Round with Registrars Consultant Round (Grand Round) Vascular Round (Prof. Robbs) IALCH Seminar Room Ward D1 West Tutorial Paediatric Surgery IALCH – 4 th Floor Lecture Theatre
Friday	08h00-16h00 08h00-09h30 09h30-11h00 11h00-12h00 14h00-16h00	Operating Sessions Business round with registrars Consultant Round Tutorial – L5 (Prof Muckart) Orthopaedics (Room 50) - week 2 & 5
Saturday	07h45-09h00 09h30	Surgery Seminar Consultant round

* See roster

Learning Program for Ward S4

Monday	08h30-12h00 08h00-09h30 14h00-16h00	Operating session Business round with registrars Case presentations (L5) (Prof. Madiba)
Tuesday	07h30-09h30 09h30-16h00 09h30-10h30 10h30-12h00 12h00-13h00 14h00-15h00 16h00-17h00	Tutorial (Orthopaedics) Operating Sessions Consultant round Surgical Outpatients Tutorial – L5 (Prof. Haffejee) Surgical pathology tutorial Surgical Forum
Wednesday	08h00-16h00 09h00-09h30 14h00-16h00	Operating session Business round with registrars Orthopaedics
Thursday	08h00-09h00 09h30-10h30 10h30-12h00 14h00-15h00 15h00-16h00	Business round with registrars Consultant round Surgical outpatients Vascular round (Prof. Robbs) IALCH – Seminar Room Ward D1 West Paediatric Surgery Tutorial IALCH, 4 th Floor Lecture Theatre
Friday	08h00-09h30 09h30-10h30 10h30-11h30 11h00-12h00 14h00-16h00	Business round with registrars Consultant round Grand Round Tutorial – L5 (Prof Muckart) Orthopaedics (weeks 3 & 6)
Saturday	07h45-09h00 09h30	Surgery Seminar Consultant round

* See roster

R. K. KHAN HOSPITAL : WEEKLY ROSTER

<u>MONDAY</u>	08h00 – 10h00	Ward Round / SOPD
	10h00 – 10h30	Tea Break
	10h30 – 11h30	Ward Work
	11h30 – 13h00	SOPD
	13h00 – 13h30	Lunch
	14h00 – 15h00	Mr.A.Gounden / Mr. M.Naidoo
<u>TUESDAY</u>	08h00 – 09h30	Ward Round / SOPD
	09H30 – 10h00	Tea Break
	10h30 – 11h30	Mr. PD. Rambaran / Mr. WF.Rahaman
	12h00 – 13h00	<i>Tutorial [Mr. B. Govender]</i>
	13h05 – 14h15	<i>Surgical Pathology – Mr. ADR. Reddy</i>
	16h00 – 17h00	<i>Surgical Forum</i>
<u>WEDNESDAY</u>	08h00 – 10h00	Ward Round / SOPD
	10h00 – 10h30	Tea Break
	10h30 – 11h30	<i>Tutorial [Mr. A.D. Goga]</i>
	11h30 – 13h00	SOPD
	13h00 – 14h00	Lunch
	14h00 – 15h00	SOPD
<u>THURSDAY</u>	08h00 – 10h00	Ward Round / Thyroid Clinic
	10h30 – 12h00	SOPD / GIT Unit
	12h00 – 16h00	IALCH
<u>FRIDAY</u>	08h15 – 09h15	Tutorial [Mr. D. Govender]
	09h15 – 11h30	Ward Round / SOPD
	11h30 – 13h30	Library / Lunch
	13h30 – 16h00	SOPD / Foot Clinic
<u>SATURDAY</u>	07h45 – 09h00	<i>Surgery Seminar</i>
	09h00 – 13h00	Ward Round

Prince Mshiyeni Memorial Hospital

Department Of Surgery

Final Year Programme

Monday	08h00-09h00	Handover Round in Acute Ward
	09h00-13h00	Theatre Operating Slate
	13h00-14h00	Meeting (Statistics, X-rays, etc)
	14h00-15h00	Case presentations (Mr S Maseme)
Tuesday	08h00-09h00	Handover Round in Acute Ward
	08h00-12h00	SOPD (Ms Zulu)
	13h00-14h00	Meeting (Statistics, X-rays, etc)
	14h00-15h00	Surgical pathology tutorial
	16h00-17h00	Surgical Forum (Medical School)
Wednesday	08h00-09h00	Handover Round in Acute Ward
	08h00-13h00	SOPD (Mr Manzini)
	13h00-14h00	Meeting (Statistics, X-rays, etc)
	14h00-15h00	Tutorial (Ms Zulu)
Thursday	08h00-09h00	Handover Round in Acute Ward
	09h00-14h00	Theatre operating slate
	14h00-15h00	Vascular round (Prof. Robbs- IALCH)
Friday	08h00-09h00	Handover Round in Acute Ward
	10h00-12h00	Academic meeting (Seminar Room) (Topics on notice board)
	12h00-13h00	Tutorial (Mr Nalewaj)
Saturday	07h45-09h00	Surgery Seminar (Medical School)
	09h30	Handover Round in Acute Ward

ADDINGTON

	Group A		Group B		Intake
Monday 08:00– 09:00	Ward round 3A floor	Ward round 3B	Ward round 2A	Ward round 2B	
09:00-10:00	Tutorial with Mr Phillips				
09:00– 13:00	SOPD/ ward work	Prepare patient for grand round	Prepare patient for grand round	Ward work	
13:00 – 15:00	Grand round Professor Thomson	Grand round Professor Thomson	Grand round Prof pre op round	Grand round Prof pre op round	
Tuesday 07:00 – 09:00	ward round 3A Registrar	Ward round 3B Registrar	Ward round 2A Registrar	Ward round 2B Registrar	
09:30 – 11:00	Theatre	STC	Theatre	Endoscopy	
13:00 – 14:00	Pre-op ward round 3A	Pre-op ward round 3B			
Wednesday 0700	ward round 3A	Ward round 3B	Ward round 2A	Ward round 2B	
08:00– 12:00	Theatre 1	Theatre 4	SOPD/ward work	SOPD/ ward work	
13:00 – 14:00	Surgical Pathology I				
Thursday	IALCH/Endoscopy		IALCH/ Theatre		
Friday 08:00-09:00	Reg ward round 3A	Ward round 3B	Ward round 2A	Ward round2B	
09:00 – 11:00	Consultant round	Consultant round	Endoscopy/ SOPD/Ward Work	SOPD/Ward Work/ Endoscopy	
13:30-17:00	Academic Day M and M Registrar presentation X-ray Meeting				

ADDINGTON

Surgical Pathology -

The entire group must attend these formal sessions in the fifth floor conference room.

- Week 1 Obstructive Jaundice and Diseases of the Biliary Tract - Prof Thomson
- Week 2 Benign and malignant pancreatic disease Mr Anderson
- Week 3 Acute Abdomen Mr Steer
- Week 4 Large Bowel, Inflammatory Bowel Disease, Prof Thomson
- Week 5 Benign moles, melanoma and skin tumours Mr Naidoo
- Week 6 Benign and Malignant Breast Disease Mr Loots

General

All students to be appropriately dressed whilst in the hospital, identification must be visible at all times whilst on the hospital premises. Patients are to be treated with respect and you are to introduce yourself when working with them.

Orthopaedic Rotation

During your period in Addington you will each do a week of orthopaedics under Mr Tlale. Every morning at 08:00 there is an X-ray meeting in the trauma unit where all the previous nights orthopaedic trauma is reviewed, you should make every attempt to attend these if you have some spare time, even when not rotating through orthopaedics.

Intakes

As final year students you are expected to be available for intakes on weekends and during the week, a roster will be drawn up once you have commenced your rotation. If a patient is assigned to you for clerking please present the patient to the registrar working with you, all relevant investigations must be done in casualty/trauma and a differential diagnosis and management plan must be made and documented in the notes prior to being transferred up to the wards. Under no circumstances are you as students to admit patients or perform any procedures unless authorized and supervised by the registrar. Intakes begin at 16:00 and last all night. There are arrangements for students to sleep over at the hospital.

During the night you must attach yourself to the first call surgical intern in casualty to clerk and see acute patients. You should arrange to accompany the registrar to theatre when emergency operations are being performed. There are no compulsory intakes during the last week of the block.

Problems

Please discuss any problems with Mr Steer.

Paediatric Surgery

"There will be six lectures for each block in Paediatric Surgery to be held at Inkosi Albert Luthuli Central Hospital on a Thursday at 15h00-16h00. Venue to be announced".

80% attendance is required. The table on Page 21 lists the topics

5TH YEAR TUTORIALS – 2010**DEPARTMENT OF PAEDIATRIC SURGERY****THURSDAY 15H00-16H00****IALCH – STAFF STUDENT AND DEVELOPMENT (BLOCK A, LEVEL 3)**

GROUP	DATE	TOPIC	TUTOR
D		Minor, frequent paediatric surgical problems	Professor G.P. Hadley
		Paediatric intestinal problems (congenital, reflux, infection, constipation)	Mr. R. Wiersma
		Abdominal pain	Mr. A. Maharaj
		Paediatric trauma management (abuse, bites, MVA, etc)	Mr. V. Jeena
		Paediatric urogenital pathology (intersex, testicular disease, infection, urological obstruction)	Mr. R. Wiersma
		Hepatobiliary pathology in children (jaundice, biliary atresia, choledochal cyst, worms, abscess)	Mr. A. Maharaj
E		Minor, frequent paediatric surgical problems	Professor G.P. Hadley
		Paediatric intestinal problems (congenital, reflux, infection, constipation)	Mr. R. Wiersma
		Abdominal pain	Mr. A. Maharaj
		Paediatric trauma management (abuse, bites, MVA, etc)	Mr. V. Jeena
		Paediatric urogenital pathology (intersex, testicular disease, infection, urological obstruction)	Mr. R. Wiersma
		Hepatobiliary pathology in children (jaundice, biliary atresia, choledochal cyst, worms, abscess)	Mr. A. Maharaj
F		Minor, frequent paediatric surgical problems	Professor G.P. Hadley
		Paediatric intestinal problems (congenital, reflux, infection, constipation)	Mr. R. Wiersma
		Abdominal pain	Mr. A. Maharaj
		PUBLIC HOLIDAY	
		Paediatric urogenital pathology (intersex, testicular disease, infection, urological obstruction)	Mr. R. Wiersma
		Hepatobiliary pathology in children (jaundice, biliary atresia, choledochal cyst, worms, abscess)	Mr. A. Maharaj
A		Minor, frequent paediatric surgical problems	Professor G.P. Hadley
		Paediatric intestinal problems (congenital, reflux, infection, constipation)	Mr. R. Wiersma
		Abdominal pain	Mr. A. Maharaj
		Paediatric trauma management (abuse, bites, MVA, etc)	Mr. V. Jeena
		Paediatric urogenital pathology (intersex, testicular disease, infection, urological obstruction)	Mr. R. Wiersma
		Hepatobiliary pathology in children (jaundice, biliary atresia, choledochal cyst, worms, abscess)	Mr. A. Maharaj
B		Minor, frequent paediatric surgical problems	Professor G.P. Hadley
		Paediatric intestinal problems (congenital, reflux, infection, constipation)	Mr. R. Wiersma
		Abdominal pain	Mr. A. Maharaj
		Paediatric trauma management (abuse, bites, MVA, etc)	Mr. V. Jeena
		Paediatric urogenital pathology (intersex, testicular disease, infection, urological obstruction)	Mr. R. Wiersma
		Hepatobiliary pathology in children (jaundice, biliary atresia, choledochal cyst, worms, abscess)	Mr. A. Maharaj
C		Minor, frequent paediatric surgical problems	Professor G.P. Hadley
		Paediatric intestinal problems (congenital, reflux, infection, constipation)	Mr. R. Wiersma
		Abdominal pain	Mr. A. Maharaj
		Paediatric trauma management (abuse, bites, MVA, etc)	Mr. V. Jeena
		Paediatric urogenital pathology (intersex, testicular disease, infection, urological obstruction)	Mr. R. Wiersma
		Hepatobiliary pathology in children (jaundice, biliary atresia, choledochal cyst, worms, abscess)	Mr. A. Maharaj
Examination Week			

ORTHOPAEDICS 2010

Department Of Orthopaedic Surgery

REFERENCES:

Seven Paths to Orthopaedics

-TL Sarkin

Outline of Orthopaedics

-Apley and Solomon

Orthopaedics rotation for final year students will be at any of the following depending on surgical allocation- King Edward, RK Khan, Prince Mshiyeni, Addington. Students are encouraged to start the weekend before their rotation week to get maximum benefit.

Examination-Bone, Joint, Tendon, Spine

Fractures and Dislocations- upper limbs, lower limbs, spine, pelvis. Treatment + complications of fractures

Soft Tissue Injuries:

- (a) Nerves- (median, ulnar, radial, peroneal, axillary, sciatic, brachial and lumbosacral plexus)
- (b) Flexor, extensor tendons of the hand- assessment
- (c) Knee ligaments- diagnosis and assessment

Infections of bone and Joint –acute, chronic, pyogenic, tuberculosis, fungal, retroviral disease.

Inflammatory disease –rheumatoid arthritis

Metabolic diseases –rickets, osteomalacia, Pagets disease

Dysplasias of bone –osteogenesis imperfecta, fibrous dysplasia

Congenital abnormalities

Congenital hip dislocation, club foot

Hip disorders in children –slipped capital femoral epiphysis, Perthes disease

Malalignment problems: Genu varus, genu valgus, cubitus varus, valgus, coxa vara, valga and causes of these

Degenerative Disorders: Osteoarthritis, avascular necrosis of the hip

Spinal Disorders: scoliosis kyphosis, gibbus, lordosis, causes

Foot Deformities: clubfoot, Cavus, planus, equinus, calcaneus, hallux valgus

Neurological Disorders: cerebral palsy, spina bifida, poliomyelitis

Tumours of bone:

- (a) Benign- bone cysts, enchondroma, osteochondroma multiple exostosis
- (b) Malignant tumours- osteosarcoma, Ewing's, chondrosarcoma, multiple myeloma

Traction- methods, types, uses, complications- classification

Methods of immobilization- plaster casts splints (upper lower limb cervical spine), Thomas Splint, aluminium splint.

Outline of Tasks

- Required to attend all tutorials, ward rounds, X-ray meetings daily and on weekends
- Required to do one weekend and one week day intake and obtain consultant/registrars signatures
- Required to present 3Xrays at the morning meeting following an intake
- Know the uses and application of Plaster of Paris, Biers Block, Thomas splint and traction, skeletal traction-types and methods, indication, aluminium splint collar and cuff cones calipers
- Clerk a polytrauma case and report fully under headings:
History, Examination, investigations X-ray features, management complications that can occur
- Clerk a case of osteomyelitis or bone infection and outline the history, examination, investigations management and the further complications that may occur
- Clerk a case of nerve injury- physical signs in detail
- All tasks should be outlined and written fully in A4 (exam pad) sheets and handed with signatures of each task together with daily register to the secretary at the end of week block for DP purposes. These will not be returned to you. A duplicate should be kept for your references.

MEDICINE 2010

Department Of Medicine

FOREWORD

During this rotation students will be given a log-book. The DP requirements related to the log-book will be detailed later. Note: the log-book is NOT the portfolio.

The purpose of the Log Book is to:

- Advise students of the requirements of the Department
- Assist students to record their training so that their experience can be accurately recorded and any deficiencies identified and addressed.
- Assist consultants and the Department to assess the overall training of the student interns and provide any extra experience needed for the students benefit.

THE LOG BOOK must be:

- Completed daily
- Carried by students at all times to avoid retrospective and inaccurate recording.
- Must be signed by the consultant/registrar at each tutorial, ward round and intake and when procedures are performed or observed.
- Must be discussed by the students with their unit consultant once a week.
- This will ensure an accurate assessment, correct any errors and/or deficiencies.
- Will be reviewed by the unit head at the end of the block.
- **MUST** be returned to the Department by the last Tuesday of the block. If not returned the DP certificate will be withheld and the student will not be eligible to sit for the examination in internal medicine.

In addition:

- Tutors must be informed if a scheduled tutorial will not take place.
- Presentations must be problem-orientated.
- Registrars are to sign the books for attendance on ward rounds, intakes and procedures.

CO-ORDINATORS:

1. *Dr K Nyamande*
2. *Dr N Madala*
3. *Dr I Paruk*
4. *Dr S Haripersadh*
5. *Dr S Maharaj*

DEPARTMENT OF MEDICINE

1. Course outline:

In this six-week block, students will be attached to a general medical firm and will have weekly tutorials in Haematology and Dermatology. The 6 week block is divided into two 3 week blocks. Each student will spend 3 weeks at IALCH and the other 3 weeks at one of the base hospitals (RKK, Addington and KEH).

The key objective of the Junior Intern teaching programme is to produce an independent medical practitioner who is able to diagnose as well as treat common medical diseases and refer those which s/he is unable to manage to appropriate level of health care. The course is designed to be an application of the theoretical and practical knowledge acquired in earlier years. Thus, at the end of the course the student should be able to:

- **Take a detailed history, correctly elicit and interpret all clinical signs;**
- **Formulate a morphological diagnosis and an appropriate differential diagnosis;**
- **Present in a problem-orientated manner;**
- **Use and interpret laboratory investigations rationally in order to accurately diagnose and assess the severity of disease;**
- **Be able to institute management of common conditions and medical emergencies;**
- **Plan and institute ambulatory (outpatient) management of common chronic disorders.**
- **Show compassion towards patients and practice medicine in an ethical manner.**
- **Demonstrate appropriate and professional behaviour at the bedside as well as in all interactions with medical personnel, nursing staff and patients.**

2. Professional etiquette:

In addition to appropriate ethical considerations:

- Students are expected to behave in a professional manner at the bedside.
- Patients should be addressed formally and be shown due courtesy.
- Screens must be drawn during examination.
- Unnecessary exposure of patients will not be tolerated. .
- Patients should not be handled roughly or hurt.
- Students should always be dressed neatly and should wear a clean white coat at all times in the hospital. T-shirts, jeans and takkies are not allowed except on intakes.

3. Hospital attachment:

Students will be allocated to a medical unit in any one of the metropolitan hospitals in the Durban Functional Region and will also do a rotation to Inkosi Albert Luthuli Hospital (IALCH).

Students must report to their Unit or Departmental Head at the start of each block period.

4. Ward Attendance:

Weekdays from 08h00 to 16h00

Saturdays from 08h00 to 12h00

Sundays: for post intake rounds

Intake days: Includes weekends, from 08h00 for 24 hours.

The above times serve as broad guidelines and student interns may be required to remain in attendance outside these hours at the discretion of a Consultant or Senior Registrar.

5. Ward Duties and responsibilities

Each student intern will be allocated to a medical team and will work with an intern, registrar and consultant. The following are the responsibilities of each student intern:

a) Attendance:

- Attendance at all intakes, daily registrar/ consultant ward rounds and follow-up clinics.
- Attendance at Grand Rounds at the respective hospitals.

b) Clinical responsibilities:

- Each student is expected to care for a minimum of **3 patients** at any one time in their respective units and a minimum of 18 patients during the entire 6-week block. The student is required to fully clerk, present to the registrar/consultant, perform relevant procedures, obtain results and discuss management with the registrar/ medical officer for all their patients; the student is responsible for the daily follow-up care of their patients from admission until discharge and all patients must be discussed with the registrar/ M.O daily. **Student interns are not allowed to write any prescriptions.**
- Procedures – student interns must observe the various special procedures performed in the management of medical patients. They should perform certain procedures such as venepuncture, lumbar punctures, pleural fluid aspirations, etc. under the supervision of the Registrar or Medical Officer.
- ECG: Student interns are expected to perform and interpret ECGs.

6. Intake days:

- Routine ward duties, formal teaching rounds and tutorials will not be altered.
- On completion of ward duties student interns will attend the intake and the clinical duties outlined in 5 (b) will apply. The student may only leave the intake ward after consultation with the registrar/consultant.
- For students on rotation at IALCH, they will still be required to attend the intakes at their base hospital.

7. Tutorials:

a. General Medicine and Inkosi Albert Luthuli Central Hospital:

- i) There will be a minimum of **4 tutorials per week**.
- ii) Each student should ensure that s/he is always ready to present in any tutorial, as the choice of the presenter will be made by the tutor and not the students.
- iii) **Case presentations must be problem-orientated.** Each case presentation will be assessed using an appropriate scale. The students are expected to present a broad spectrum of diseases during the tutorials, intakes and ward rounds. A guideline on the recommended topics is attached.
- iv) Tutors are to be informed if a scheduled tutorial is not to take place.

b. Haematology: Tutorials are as outlined in the weekly schedule. Students must collect their Haematology notes and case studies a week prior to commencing their block.

c. Dermatology: Tutorials are as outlined in the weekly schedule.

8. Grand Rounds:

All student interns must attend Grand Rounds at their respective hospitals:

King Edward VIII Hospital: 12h00 every Wednesday in L4

Addington Hospital: As per Roster

RK Khan Hospital: Neurology Meeting in Conference Room: 14h45 alternate Tuesdays
Grand Round at College of Nursing: 14h45 on Thursdays

9. DP requirements:

During the course of the clinical block students must fulfill all the requirements for medicine, haematology and dermatology to obtain a DP.

a. General Medicine:

- i. Attendance at **all** tutorials, ward rounds, intakes and follow-up clinics. Failure to attend any single tutorial/ ward round/ intake/ clinic requires an acceptable written apology or medical certificate to be handed to the unit head. Since optimum clinical exposure is necessary to achieve clinical competence, any student who fails to attend at least 80% of the academic programme will not obtain a DP even in the presence of a valid reason.
- ii. Satisfactory recording of the minimum clinical responsibilities outlined in 5b.
- iii. The student must submit a clinical case portfolio by the end of the 6th week of the block.
- iv. The portfolio must contain a minimum of 16 clinical cases (which students would have encountered during their clinical responsibilities detailed in 5b – above).
- v. In addition, the portfolio must contain a summary report of at least 2 patients seen during the intake -per intake attended

Logbooks should be handed to the department at the end of each week for recording the progress of each student.

b. Haematology:

- i. Students are expected to attend all tutorial sessions with a minimum 80% attendance.
- ii. Students will be assessed on the presentation of the assigned cases and participation in group discussion.
- iii. Failure to meet the above requirements will result in the DP certificate being withheld.
- iv. The weekly student attendance register must be signed by the tutor and handed/sent/faxed to the Haematology Secretary on a weekly basis.

c. Dermatology:

Junior Interns have to attend all tutorials in dermatology. Failure to attend any tutorial will require submission of either a medical certificate or a satisfactory explanation, in writing, acceptable to the Head of Department of Dermatology

N.B. Failure to obtain a DP certificate

If the DP requirements have not been met, the student will be notified via a notice on the Department's notice board, during the last week of the block. In the absence of a DP certificate students will not be permitted to participate in any Medicine examination. Student who have not obtained a DP certificate have 3 working days within which to appeal for a change in their DP status. This appeal must be made through the Dean's office. Contact Student Affairs Offices for more detail. Students denied a DP certificate will only be allowed to take the exams after written approval has been received from the Dean's office.

SPECIAL CIRCUMSTANCES:

Condoned leave of absence and/or aegrotat examinations can only be granted by the Dean's office, after appropriate application. **No exceptions will be made.** If approval for an aegrotat examination has been granted by the Dean's Office, a copy of this approval must be provided to the Department of Medicine. No arrangements for any aegrotat examination will be made without appropriate approval.

10. Assessments and examinations:

The final exam will be held at the end of each semester and consists of an objective test, 2 short clinical cases and one long clinical case.

Assessment:

Module Mark = Clinical 60% + Written 40%

CLINICAL(60%):

- i) Three directly observed short cases (12.5% each)
- ii) Oral Portfolio examination (2 cases – 6.25% each = 12.5% total)
- iii) Dermatology clinical examination (10%)

WRITTEN(40%)

- i) Paper I: Multiple Choice Questions – (all subtypes of MCQs)

To pass:

The student must obtain at least 50% overall (clinical + written),

In addition s/he must pass the clinical examination with the following criteria:

- i) must pass (at least 50% in each) 3 out of the 4 clinical cases and
- ii) must obtain an average of at least 50% for the 4 clinical cases combined (portfolio 4th case)
- iii) must pass the **clinical component** with at least 50% aggregate

Furthermore s/he must pass the written component according to the following criteria:

- i) must obtain an overall mark of at least 50% in the written exam

The aim of the examination is to assess clinical competency in internal medicine, therefore emphasis is placed on the clinical cases. The final decision is based on the overall performance of the student, which is reviewed at the meeting of the examination board of the Department of Medicine. The examination board consists of the academic staff of the Department of Medicine and external examiners. The external examiners are the final arbiters in the examination board's deliberation.

RECOMMENDED TOPICS IN CLINICAL MEDICINE - 4TH-5TH YEARS

The following is only a guide to the clinical topics, which should be covered during the clinical blocks and is **NOT** intended to be exhaustive. The student is encouraged to develop a systematic approach to these clinical problems.

CARDIOVASCULAR SYSTEM

1. Hypertension and the evaluation of end organ damage
2. Approach to cardiac failure
3. Cardiomyopathy
4. Valvular Heart Disease including rheumatic fever and infective endocarditis
5. Pericardial diseases
6. Interpretation of the electrocardiogram
7. Arrhythmias and heart block
8. Ischaemic Heart Disease
9. Congenital Heart Disease

CENTRAL NERVOUS SYSTEM

1. Approach to weakness
2. Approach to hemiplegia
3. Approach to paraplegia
4. Peripheral neuropathy
5. Cranial neuropathies
6. Meningitis
7. Cerebellar disease
8. Extrapyrarnidal tract disease
9. Approach to Epilepsy and blackouts
10. Approach to myopathies
11. Approach to common stroke syndromes
12. Approach to coma and confusion

DERMATOLOGY

1. Herpes Simplex / Zoster
2. Molluscum Contagiosum
3. Warts
4. Impetigo/ Pyoderma
5. Syphilis
6. Erythrasma
7. Ecthyma
8. Scabies
9. Tinea capitis, corporis, cruris pedis at unguium
10. Candidiasis
11. Tinea versicolor
12. Pityriasis Rosea
13. Lichen Planus
14. DLE/SLE, Dermatomyositis, Scleroderma
15. Psoriasis
16. Atopic Eczema
17. Seborrhoeic Eczema
18. Varicose Eczema
19. Asteototic
20. Stasis
21. Acne
22. Drug Eruptions.

ENDOCRINE

1. Diabetes
2. Thyroid diseases
3. Cushing's disease/Addison's disease
4. Acromegaly
5. Pheochromocytoma
6. Prolactinoma & non-functional pituitary adenoma
7. Diabetes insipidus
8. Hyperparathyroidism
9. Hypocalcaemia
10. Osteoporosis
11. Conn's syndrome
12. Dyslipidaemias

GASTROINTESTINAL SYSTEM

1. Diarrhoea and constipation
2. Approach to hepatomegaly
3. Approach to hepatosplenomegaly
4. Approach to splenomegaly
5. Approach to ascites
6. Approach to portal hypertension
7. Acute and Chronic liver diseases
8. Liver failure
9. Malabsorption
10. Peptic ulcer disease
11. Irritable bowel syndrome

GERIATRICS

1. Approach to delirium / dementia in the elderly
2. Drug therapy in the elderly
3. Management of hypertension in the elderly
4. Principles of rehabilitation

HAEMATOLOGICAL

1. Normal values in haematology
2. Approach to anaemia
3. Approach to bleeding and Thrombosis
4. Approach to pancytopenia
5. Haematological malignancies
6. Thrombosis – diagnosis and management
7. Haematological changes in HIV infection

INFECTIOUS DISEASES

1. Human Immunodeficiency Virus Infection and complications thereof
2. Typhoid
3. Malaria
4. Approach to Pyrexia of Unknown origin
5. Approach to infectious diarrhoea
6. Amoebiasis
7. Tuberculosis

MEDICAL EMERGENCIES

1. Cardiorespiratory arrest
2. Acute myocardial infarction and unstable angina
3. Pulmonary oedema
4. Tachyarrhythmias
5. Acute asthma
6. Hypertensive encephalopathy
7. Indications for emergency dialysis
8. Electrolyte abnormalities (K⁺, Na²⁺, Ca²⁺)
9. Diabetic ketoacidosis and hyperosmolar dehydration
10. Hypoglycaemia
11. Metabolic acidosis
12. Hypoadrenalism
13. Thyrotoxic crisis
14. Status epilepticus
15. Drug overdose

MUSCULOSKELETAL SYSTEM

1. Approach to monoarthritis
2. Approach to polyarthritis
3. Rheumatoid arthritis
4. Seronegative spondyloarthropathies
5. Gout
6. Osteoarthritis
7. Connective tissue disease- including systemic lupus erythematosus
8. scleroderma polymyositis/dermatomyositis and Raynaud's phenomenon
9. Soft tissue rheumatism including regional pain syndromes, backache, fibromyalgia.

RENAL

1. Acute renal failure
2. Chronic renal failure
3. Nephrotic syndrome
4. Approach to haematuria
5. Approach to proteinuria
6. Sodium and potassium disorders
7. Approach to metabolic acidosis and other acid-base disorders

RESPIRATORY SYSTEM

1. Respiratory Failure-type I and II
2. Pneumonia:
 - a. community acquired
 - b. nosocomial
 - c. tuberculosisin immunocompromised patients
3. Pleural effusion/empyema
4. Collapse/consolidation
5. Bronchiectasis
6. Lung Abscess
7. Asthma
8. Chronic Obstructive Pulmonary Disease
9. Diffuse interstitial lung disease
10. Cor pulmonale
11. Simple Pulmonary Function Tests-simple spirometry
12. Interpretation of the chest radiograph
13. Pulmonary malignancies
14. HIV and the Lung

OBSTETRICS & GYNAECOLOGY 2010

Department Of Obstetrics And Gynaecology

The purpose of the Log Book is to:

- Advise the students of the requirements of the Department.
- Assist the student to record his training in concise detail so that the experience can be accurately recorded and any deficiencies identified and remedied.
- Assist the Department to assess the overall training of the student interns and provide any extra experience for the students benefit.

THE LOG BOOK

- Log Book is mandatory. It contributes towards a block assessment mark.
- Log Book is a prerequisite at mid-block as well as at end of the block assessment.
- It must be handed in for a final mark at the end of block assessment.
- Fill the appropriate section as soon as you have completed/observed a procedure.
- Should be carried by students at all times. This will avoid retrospective and inaccurate recordings.
- Must be discussed by the students with their unit consultant once a week. This will ensure an accurate assessment, correct any errors and/or deficiencies.
- Should be reviewed by the consultant in charge of the unit, at either the unit meeting or the audit (Caesar) meeting.

CONFIDENTIALITY

Students must **NOT** identify patients by name. The patient's hospital number and initials must be noted with the clinical details.

DULY PERFORMED CERTIFICATE

Satisfactory attendance and performance in the block is essential for a Duly Performed (D.P.) certificate. The requirements are:

- Daily attendance. Valid reasons must be given for absences. The department must be notified. Absences for three days or more require a doctor's certificate.
- A satisfactory progress report at the end of the block is required. Students will be informed of unsatisfactory performance at the interim assessments at three and/or six weeks.
- Satisfactory attendance of all organised teaching, ward work, clinics and intakes is necessary.
- Failure to obtain a duly performed certificate means the student cannot undertake the examination.

ORIENTATION:

All students commencing the block must gather in the Seminar Room, Department of Obstetrics and Gynaecology at 0830 hours on the first morning of the Block. Details of the block, will be given and questions answered and the Duly Performed (D.P.) requirements will be discussed and explained. Each group must elect a co-ordinator who will liaise with the Department and/or 5th Year Supervisor.

ASSESSMENT:

- **Block Assessment** (By unit consultants)
 - Progressive assessment
 - OSPE and a clinical case in Obstetrics and Gynaecology at 4th and 6th weeks of the block
 - Presentation of cases to consultants at antenatal and gynaecology clinics and on Academic ward rounds.
 - Log Book
- End of the block assessment in the **presence of external examiner-FINAL Examination**
OSCE and OSPE
- **Assessment:**
 - Log book, Continuous assessment and unit assessment (30%)
 - Final OSPE (35%) (obstetrics and Gynaecology)
 - Final OSCE (35%)

To pass:

A student must obtain:

- i) an overall mark of at least 50%, and
- ii) at least 50% in the final Obstetrics OSPE and,
- ii) at least 50% in the final Gynaecology OSPE and,
- iv) at least 45% in the final OSCE.

- **Fail**

A student will be deemed to have failed final Obstetrics and Gynaecology examination, if the overall mark, as well as the mark in both the final Obstetric OSPE and Gynaecology OSPE component is less than 50%. Viz:

1. The overall mark is less than 50% or
2. The final obstetric OSPE mark is less than 50% or
3. The final gynaecology OSPE mark is less than 50% or
4. The mark in the final OSCE is less than 45%

THE TEACHING PROGRAMME

All the teaching will be done during the 6 week block attachment in the Department of Obstetrics and Gynaecology.

The block is divided into two 3½ week periods in Gynaecology and Family Planning and in Obstetrics. The number of students attached to the Department will be divided equally among the five units in the Department.

STRUCTURED TEACHING:

This is divided into:

- Departmental teaching - this teaching is directed to all students in the department.
- Unit teaching - this teaching is directed to students in the individual units.
- **Departmental Teaching:**
 - A group leader must be chosen on the first day of the block. He/She must draw a list of topics and allocate students per topic.
 - Topic or case presentation for the whole block : These sessions are conducted by Part-time Specialists on 3 days of the week from 1400 hours in the Seminar Room, Department of Obstetrics and Gynaecology. Unit allocated students by rotation, present the case/topic and discussion follows the presentation. Transparencies must be used. These are available from Room 196, during student times and must be returned at the end of the session.
 - Departmental Meetings : Mondays at 1300 - 1400 hours in Steve Biko Lecture Theatre. The first two Mondays are Perinatal Mortality Meetings, the third covers Maternal Mortality and the last Monday Perinatal and Maternal Morbidity. If there are 5 Mondays in the month then the first three are Perinatal Mortality Meetings.
 - Case presentation (bedside teaching), Unit allocates students, by rotation, prepare and present a case. The case presented alternates between Obstetrics and Gynaecology. The sessions are held in the Seminar Room (Dept of O & G).
 - No tutorials to be cancelled at any time by students without the consent of the Head of Department.

See Notice Board for Roster for Part-Time Consultants and all outside activities.

- **Unit Teaching**

This teaching is comprised of the following:

- Ward work inclusive of patient clerking, management, follow up of the patients and discussion with the ward staff. Patients are allocated to the student interns (**3 patients are mandatory**) and these are managed as indicated above.
Students must involve themselves with all aspects, including special investigations and procedures, of their patient's care and of their patient's management. They must discuss the management of their patients with the ward staff. A guide indicating what you are expected to cover in your block is available from your unit's Consultants.
- **Clinic Teaching.**
Students are to attend the unit antenatal and gynaecological clinics. Students participate with the care of selected patients in Obstetrics and Gynaecology depending on the block allocation.

Obstetrics allocated students must join the Consultants and Obstetric Registrar at the antenatal clinic. The Gynaecology allocated students must join the Gynaecology registrar or the consultant at the Gynaecology clinic.

▪ **Academic Day**

Each unit has an academic day and students must participate in these academic activities viz. Obstetric and Gynaecology ward rounds and topic discussion.

▪ **Post Intake Meeting (Caesar Meeting)**

Each unit holds a meeting on the morning following the intake to review the activities of the previous 24 hour Obstetrics and Gynaecology intake including all the caesarean sections performed in that period. All unit students must attend this session.

- On-going informal teaching / discussion in the units on a daily basis. Students must involve themselves actively with discussion in the units with the interns, registrars, consultants and/or nursing staff.

▪ **Intake Days**

Each unit has a fixed weekday intake and rotating weekend intakes. Students are to attend these sessions in the unit in either Gynaecology or Obstetrics as allocated in the unit. Obstetric students rotate between day and night labour ward duty and gynaecology students are available for the entire intake.

- Weekend / Public Holiday duty : Students are required to attend their unit intakes. The allocation is as per the weekday intakes.

GENERAL

- Students must attend all structured teaching and must be punctual as considerable effort and detail is entailed to effect these sessions. Advanced indication must be given if students cannot attend for any reason - this is important.
- Students are **NOT** part of service and the Department will not use students for service. In the unlikely event of this occurring students must advise the unit consultants and Head of the department.
- Students must continue to read and revise the subject matter of Obstetrics and Gynaecology as it is essential to have a sound knowledge of the subject to be able to manage patients and do well in the clinical and viva examinations. Use of the textbooks and library must continue throughout the year. Revision of the fourth and fifth year syllabus is essential.
- Students must ensure an active involvement in the care of their allocated patients. Involvement with the special investigations, side room investigations, special procedures and operations of their patients is important.
- Interim case and OSPE at the 4th and 6th week of the block will count toward the end of block progressive assessment. This is built in to give a more objective progressive assessment.
- Students must volunteer any problems and utilise the existing facilities. The sixth year supervisor, the Unit Consultants and Head of department are always available. The Assistant

Dean for students and the Student Support Department at the Medical School are always available to help students.

- Students are **not** to sign special investigation forms or prescribe treatment as they are not qualified doctors. **But** students must understand the relevance of their patients' investigations and management.
- Students should dress neatly, consisting of a shirt with collar; formal trousers and shoes. No jeans, tee-shirts; no sandals or takkies. White coats are required in wards. Green protective outfit for labour ward.
- Unit intakes are fixed and are provided to the students at the introductory lecture.
- Details of student allocations and/or announcements are placed on the Departmental Notice Board, Department of Obstetrics and Gynaecology, under the sixth year teaching allocated area.

ALL STUDENTS MUST READ THE NOTICE BOARDS AT ALL TIMES TO BE KEPT INFORMED

- Times to see Secretary: 09h30 - 10h30. & 14h30 - 15h30

• **TRANSPARENCIES AND PENS**

- Due to high inflation and budget cuts the Department is endeavouring to save on running costs. Pens and transparencies will **ONLY** be issued against a signature. If they are not returned, a further set of transparencies and pens will **NOT** be issued. The Board Room and Reading Room can be utilised to write out the transparencies in order that the pens can be returned immediately. Advance notice should be given to you by your consultant if you are presenting. You will not be issued with transparency material outside official student times.

NEEDLESTICK INJURIES

Please take universal precautions (Gown/Visors/Plastic Gowns) for all deliveries. Take care with all needles, any needle stick injuries should be reported immediately to your unit consultants for senior registrar STAT. Packs of AZT and 3TC are available for immediate use at all times. Detailed guidelines are available from Room 196. It is recommended that students should borrow and read it.


VIDEOS

A list of gynaecology and obstetric videos are obtainable in the Department. You are encouraged to borrow these videos and utilize the Seminar Room in the Department of Obstetrics and Gynaecology to view them. Contact the secretary to book the video. These videos should not be taken out of the Department.

PAEDIATRICS 2010

Department of Paediatrics

Students will be allocated to one of six blocks during the year. During this block the student will spend 7 weeks in Paediatrics and will be allocated to perform duties in the paediatric wards of different hospitals, P.O.P.D (intakes), the neonatal unit and acute and chronic diarrhoeal unit. All components required for the block except intakes will be covered at each of the teaching sites. Within each block students will be divided into 4 groups of 10 students each to King Edward VIII Hospital, to Prince Mshiyeni Memorial Hospital, RK Khan Hospital and, to Mahatma Gandhi Hospital. All students will spend one week at Inkosi Albert Luthuli Central hospital.

 = working rules

Overall Objectives: At the end of your block you are expected to

- be a **responsible** and **caring** "doctor"
- be able to differentiate between a normal or well and sick child
- have acquired further knowledge, skill and some experience with common Paediatric problems and be able to handle them appropriately and humanely at primary and to some extent at secondary care levels.

Working hours:

Wards : 0800 - 1600 Monday – Friday. Ward and intake duties will be allocated by the consultants in charge. Students will be expected to attend intakes on Saturday, Sunday + Public holidays.

Attendance

Wards : Students are expected to attend the ward daily from 08h00 to 16h00 - Tuesday to Friday.

Intakes: Students are required to undertake intakes at the respective hospitals. Specific rules for intakes are given. 6 intakes are required. Failure to attend requires a Medical Certificate and students must make up this lost time by attending during weekends or public holidays.

Meetings : All students must attend the **Monday Academic Day meetings at Medical School**

- I. Breast Feeding - 08h30 – 10h30 alternating weekly with
- II. Side Room Techniques – 08h30 -10h30
- III. A Clinico-pathological conference – 11h00 – 12h00
- IV. Skills training (First Monday) 12h30 -13h30 and student CPC (Week 2 - 6)
– 12h30 – 13h45
- V. Emergency Paediatric – 15h00 – 16h00
- VI. Mid block discussion with co-ordinators – 4th Monday of Block
(16h00 – 16h30)

Tutorials: There will be a **minimum of 2 formal tutorials per week**. Most of your teaching will be during the intake, post-intake and general ward rounds with the registrar and consultant. Students will be given paper instructions on essential content to be covered.

TIME TABLE FOR 2010 FOR BLOCKS AND END OF BLOCK EXAMS

<u>GROUP</u>	<u>BLOCK DATES</u>	<u>EOB EXAMS</u>	<u>OSCE</u>
C	13/01/10 – 26/02/10	25-26 Feb. 10	24 FEB
B	01/03/10 – 16/04/10	15–16 April 10	14 APRIL
A	19/04/10 – 04/06/10	01-02 June 10	31 MAY
F	12/07/10 - 27/08/10	26-27 Aug 10	25 AUG
E	30/08/10 – 15/10/10	14-15 Oct 10	13 OCT
D	18/10/10 – 03/12/10	30 Nov –1Dec 10	29 NOV

NB. There will not be any end of year examinations.

YEAR CO-ORDINATORS AND CONTACT PERSONS :

Prof P Jeena , Dr R Thejpal and

Prof R Bhimma

Week 1

Introduction talk from 0800 to 0900 hours on the first Monday of each block – Prof Jeena

INKOSI ALBERT LUTHULI CENTRAL HOSPITAL

All students will be allocated for a week at the central hospital for sub speciality teaching. During this period, students would be expected to examine cases in paediatric sub speciality. All students to have exposure in subspeciality training in cardiology, NICU, PICU, pulmonology, endocrinology, nephrology, haematology over one week. A roster that arranges allocation to the different sub-specialty will be discussed with the allocated students.

GENERAL PAEDIATRICS

Students will spend the entire block allocated to either King Edward, Mahatma Gandhi, RK Khan's and Prince Mshiyeni Memorial hospitals and will have all case presentations and tutorials done at these hospitals. Students must introduce themselves to the consultants, registrars, medical staff and sisters in the ward on arrival.

Duties:

The students will function as **Junior Interns.**

- i. They will be directly accountable to the paediatric ward registrar and join registrar ward rounds.
- ii. As such he/she will be expected to become fully involved in the everyday running of the ward to which he/she is attached (clerk patients, develop and demonstrate a caring attitude, perform common procedures such as venepuncture, putting up I.V. lines, ABG, lumbar puncture and suprapubic puncture, and obtain results). Students are expected to learn appropriate side room techniques and interpretation of common investigations. Supervision of the side room techniques will require that arrangements be made with the appropriate laboratory staff.
- iii.

Each student must clerk one case on an intake day. The case must then be fully discussed with the registrar on call, and presented briefly to the consultant on the intake ward round or during the intake tutorial. Students are expected to follow the progress of patients allocated to them. (NCHS growth chart must accompany all clerking.)

- iv. Students must have detailed knowledge of at least 2 patients at any given time during their rotation.
- v. During the intake, the student is expected to learn basic resuscitation and handling of paediatric emergencies.
- vi. During general ward attachment students will attend teaching (intake and post intake) rounds with consultants. Students not allocated to any particular intake may only attend with the permission of the consultant conducting that intake
- vii. Log books will only be signed by the ward team between 15h00 & 16h00 daily and after the intake ward round.

PROGRAMME AT PMMH

The students spend two consecutive weeks in ward P1 or P3. The remaining 2 weeks are spent in Nursery and P4 (GE ward). They get clinical teaching with their respective consultants in the morning and get afternoon teaching with the consultant on call.

The afternoon teaching maybe around a new patient that they have clerked in POPD, a patient that they have in the ward or topic teaching (as requested by them) .

The long case presentations are shared by the consultants. The 2 consecutive weeks in the ward occur when they are not scheduled for IALCH.

PROGRAMME AT MAHATMA GANDHI MEMORIAL HOSPITAL

The final year program at Mahatma Gandhi Memorial Hospital offers students exposure to a regional paediatric hospital providing ambulatory care, neonatal care and inpatient paediatric care.

1) Students rotate through the following areas:

- 1) Ambulatory paediatric -POPD
- 2) General paediatrics- ward 8
- 3) Neonatal unit-ward 4

2) Each student will spend a minimum of 2 weeks in each block.

3) Students are provided with 3 formal tutorials a week. The in block assessment for the DP is done at one of these sessions.

4) During the rotation through each block, students are required to actively participate in the holistic management of patients under the supervision of a registrar/medical officer and consultant. Students are required to clerk patients and present cases to the registrar or consultants on ward rounds. In ward 4 and ward 8 , every student is allocated 2 beds where they admit and manage their patients ,with the supervision of the registrar or medical officer. They are required to join daily consultant ward rounds. All procedures listed in the log books must be performed in the various units.

5) Academic meetings at Mahatma Gandhi Hospital:

Tuesday- 14h00- 15:00, Doctors Tea Lounge

Thursday-13h00- 14:00, Board room/Labour ward seminar room.

We wish you a pleasant stay at our Hospital.

KING EDWARD HOSPITAL

Programme including including Neonatal, gastroenterology and General Paediatrics will be handed to the students at the beginning of the block

STUDENTS ARE EXPECTED TO BE ABLE TO EXAMINE AND MANAGE THE FOLLOWING:-

Newborn

LBWI

Term infant

Dysmorphic baby

Ambulatory

Common Skin lesions

URTI – including LTB, OM

Bronchiolitis

Nutrition

Wards

Acute or chronic diarrhoeal disease

Pneumonia

Hepatosplenomegaly & generalised lymphadenopathy

Anaemia

Meningitis

Urinary tract infections

Rheumatic heart disease

INTAKES:

All students must undertake at least 6 intakes and signatures must be obtained from the consultant on call for that day. All intakes must be done during the specifically allocated time to avoid overcrowding. All intakes will be undertaken at the respective hospitals Intakes will occur between 16h00 hours and 22h00 hours. You will also have the opportunity to assess babies who present to the out-patient departments, nursery and to the general wards

PROCEDURES:

All students must complete all procedures requested of them as per DP requirements. Student must actively search for ways to meet these requirements even if there is a lack of patients under their care to carry out these procedures. Student with difficulty in fulfilling these requirements should contact the co-ordinators. Signatures for these procedures can only be obtained from registrars and medical officers/interns.

LEARNING AIMS

Gastroenterology Ward

Learning objectives

Overall Objectives = management of acute and persistent/chronic diarrhoea

Specific objectives

- Recognize dehydration and severity of dehydration (MUST be familiar with IMCI guidelines on recognizing dehydration)
- Management of dehydration due to diarrhoeal losses: oral and intravenous fluids, indications for IV lines and I-O access, types of fluids used i.e. Na⁺ K⁺ HCO₃ and glucose content of fluids; categorize fluids into those used for resuscitation, rehydration and maintenance, electrolyte disturbances esp. K⁺ deficiency. How to administer fluids: IV and oral, indication for admission
- Advise caregivers on preparation and administration of oral rehydration fluids
- Advise caregivers on 'Danger signs' to observe at home in a child with diarrhoea
- Recognition and management of hyper- and hyponatraemia, hypokalaemia
- Management of dysentery
- Approach to a child with persistent or chronic diarrhoea: common causes in our environment, investigation and management plan related to these causes, indications for admission, understand the Clinitest, know the composition of feeds commonly used in managing persistent diarrhoea, managing common electrolyte abnormalities, role of vitamins and micronutrients in management of persistent diarrhoea, a basic knowledge of less commonly seen causes and when to suspect and refer
- How HIV presents as above and special management considerations
- Recognition and management of the child with severe malnutrition (to be continued in the general wards) – WHO ten steps to management

P.O.P.D.

Students will be allocated out-patient duties by the consultant as part of your intakes.

Objectives

Students should familiarize themselves with primary contact Paediatrics.

At the end of this block the student should:

- i) Develop a comprehensive approach to the prevention and management of paediatric:
 - * common minor ailments
 - * common infections
 - * communicable diseases
 - * chronic illnesses
 - * psycho-social problems (including abuse and neglect)
 - * emergencies + diagnostic problems
- ii) Be able to describe the criteria and conditions for appropriate referral and admission patients;
- iii) Communicate with parents / guardians and be able to counsel appropriately.

Tutorials:

There will be specific tutorials arranged and students will be informed accordingly.

Presentation of Case

- i. Examine fully (complete history and physical examination).
- ii.
 - a) State main problems (obtained from history and physical examination)
 - b) Complete Nutritional Assessment (as suggested in "Update on Clinical Methods"; obtainable from departmental secretary).
 - c) Complete Developmental Assessment (cf Coovadia and Wittenberg or any similar book; also from "Update on Clinical Methods").
 - d) Describe only main features in general examination which are relevant to the system which is abnormal.
 - e) Describe only the abnormal system/s (Inspection, Palpation, Percussion, Auscultation).
 - f) State other systems normal.
 - g) Give **Complete Clinical Diagnosis**
(eg. § Mitral Incompetence probably due to Acute Rheumatic Heart Disease (RHD)
§ without any major signs of RHD
§ in cardiac failure
§ without evidence of Infective Endocarditis).
- iii. A complete differential diagnosis and management plan including investigations, treatment and prognosis should be presented

In-Block Assessment

All students are expected to present one case as a DP requirement and this assessment will contribute 5% towards the final mark. Students should choose a variety of cases as these assessments would also provide a foundation for teaching.

This will make up 5 % of the overall assessment. This case must be evaluated thoroughly. The cases will be marked according to the following guidelines:-

- history 15%
- examination 15%
- differential diagnosis 15%
- investigations 10%
- confirmation of diagnosis – evidence based 10%
- pathogenesis /aetiology 10%
- treatment 10%
- complications 10%
- prognosis 5%

NB. In-block assessment is a DP requirement. Student in block assessment could be undertaken as an entire group teaching but the discussion of the mark allocation should be undertaken with candidate in private. This teaching forum should not be regarded as one of the 2 formal tutorials for the week unless a significant amount of teaching occurs. Students will be allocated to present to a specific consultant at a designated time slot.

B. PROCEDURES TO PERFORM

The final year students are expected to perform certain common Paediatric Procedures under Laboratory assistant/ Registrar / M.O. supervision for a Duly Performed Certification.

ESSENTIAL PROCEDURES (For DP Requirements) :

1. Venepuncture: Obtain blood samples
2 neonates
8 infants and older children
2. I.V. line insertion and infusion
2 neonates
5 infants and older children
3. Lumbar puncture X 2
4. Dextrostix and glucometer for blood sugar X 4
5. Urine testing with Urine dipstix X 4
6. Tuberculin skin test X 4
7. Rectal Examinations and swabs X 2
8. Side Room Techniques
 - a. Making slides of stool and Microscopic examination and test for reducing substances X 2.
 - b. Making slides of urine and Microscopic examination X 2

RECOMMENDED PROCEDURES

1. Blood transfusion X 1
2. Arterial puncture (radial) X 2 for ABG
3. Suprapubic bladder puncture X 2
4. Naso-gastric/Ryles' tube X 4
5. ECG X 1 (PRU and Wards).

C. OPTIONAL: OBSERVE AND ASSIST (when the opportunity arises)

1. Umbilical venous catheterization and ETF
2. Intubation technique and familiarize with resuscitation equipments:
Neonate
Infants and older child
3. Bone marrow aspiration 1
4. Liver biopsy
5. Kidney biopsy
6. Muscle biopsy
7. Fine needle lymph node aspiration
8. Intercostal drainage
9. Subdural and ventricular taps

D. OPTIONAL: OBSERVE / LEARN USE OF:

1. Cranial U/S (Nursery)
2. Cardiac and Respiratory monitors
3. Incubators
4. Infusion pumps

E. Student Cases on Academic day

- A consultant is allocated per student presentation.
- A group of students as given by the allocated letter will present a case on the designated subject matter. The case should be carefully selected to avoid repetition with the consultant CPC

F. CONSULTANT CPC

- A consultant is allocated to provide a clinico-pathological conference in a specific subject matter
- Students must read around the subject matter as the format is one of case discussion. **All CPCs will be around a case**

Topics to be covered in each block either student or consultant CPC

1. Malnutrition and childhood obesity- Dr Ganie
2. HIV disease, therapy & palliative care- Prof R. Bobat and Dr M Archary
3. Asthma and allergic rhinitis tuberculosis- respiratory- Dr S Thula and Prof Jeena
4. Myocarditis, cardiomyopathy, pericarditis -cardiology- Dr Hoosen and Dr Nzimela
5. Infants of a diabetic mother- neonatology- Dr Mackanjee, Prof Adhikari, Dr R Singh, Dr S Singh, Dr N Naidoo and Dr C Kelly
6. Shock & electrolyte disturbances gastroenteritis- Dr Ramji and Dr K. Naidoo
7. Downs syndrome- genetics
8. Meningitis -neurology- Dr Mubaiwa and Dr Rapiti
9. Short stature and rickets - renal disease and endocrine– Prof Bhimma and Dr Y. Ganie
10. Lymphadenopathy and approach to anaemia - Haematology – Dr Thejpal, Dr Goga and Dr Neethling
11. Attention deficit disorders child psychology and abuse- Dr. V. Govender and Dr R Govender
12. Skills training: consultants as per roster

- G.** Attendance at Breast Feeding workshops, Side Room Techniques and Skills Training on a Monday is compulsory.

A card with the DP requirements will be handed to each student at the beginning of the Block.

Each student requires the following in order to obtain a DP certificate:

1. Case assessment mark > 50%
2. Attendance of and completion of a register for at least 6 intakes
3. Attendance of and completion of a register for 100% of the scheduled ward attendances as per roster*
4. Completion of all procedures as indicated on the blue card
5. Handing in of an Ethics Report

*** 100% of attendance on weekdays.** As the students miss many of the weekend and Holiday duties due to unavailability of University transport students missing any weekday has the opportunity to make this up by working on weekends, holidays and doing extra intakes.

MAKING UP FOR MISSED SCHEDULE LEARNING OPPORTUNITIES.

As a rule all students who fail to attend scheduled teaching for what-so-ever reason must make up this lost time by attending additional sessions. This also applies to students who produce medical certificates. Where serious medical or social problems for non attendance exist, the student must inform either of the co-ordinators so that alternative plans can be made.

DP Cards

Students will not be allowed to undertake the examination without the DP. All assessment cards should preferably have photograph attached. Contact details of students (cell phone numbers) should also appear on these cards. Students without photographs must have their student cards available at the time of obtaining signatures.

- DP cards must be completed with **signatures** and **tutor marks**.
- The section on procedures must be completed and signed by the MO/Registrar/ laboratory technologist
- Attendance will be signed only by the registrar/consultant.
- All DP cards need to be countersigned by the Consultant at the respective hospitals.
- All students must hand in their DP cards by 12h00 * hours on the last Monday of the block. The list of student numbers of candidates that do not satisfy the DP requirement will be placed on the notice board by 09h00 on the same day. These individuals will be required to submit a DP appeal form immediately if they would like to query the denial of DP.
- Students may consult the co-ordinators to discuss reasons for failure to obtain a DP and plans to make up.

* Arrangements for the first and last blocks will be confirmed at the Orientation meeting.

ASSESSMENTS:

End of Block Assessment / Final examinations

- 1.1 EOB assessment is the **final** assessment, comprising of:

Clinical cases 3 short cases each 15 min	3 x 20%	
Combined clinical mark		60%
Theory: MCQ & a computer based OSCE (each 17.5%)		35%
In block assessment		5%
FINAL OVERALL MARK:		<u>100%</u>

To pass you must obtain

1. 50% or more in the overall assessment; and
2. Candidates must pass two(2) out of the three (3) clinical cases;
3. 50% or more in the combined clinical mark; and
4. Theory subminimum of 45%

Recommended Reading:

1. Paediatrics and Child Health: A Handbook for Health Professionals in the Third World, edited by HM Coovadia and Wittenberg, Oxford University Press, 4th edition.
2. Department of Paediatrics - ward hand book latest edition
3. Update on Clinical Methods: Obtain from Department Secretary
4. Hospital level paediatrics standard treatment guidelines and essential drug list 2006 Department of health
5. Other reading recommended by your consultant.

MARKING GUIDELINES FOR 5TH YEAR EOB

SHORT CASE CLINICALS

		F < 45	F 46-49	P 50-59	P 60-69	P 70-74	P >75
P H Y S I C I A L S	<i>Accurately elicited¹</i>	-	±	+	+	+	+
	<i>Technique²</i>	-	±	+	+	+	+
	<i>Unaided³</i>	-	-	-	+	+	+
	<i>Patient Handling⁴</i>	-	±	+	+	+	++
	<i>Anthropometry if relevant</i>	-	±	+	+	+	++
D I S C U S S	<i>Pathophysiology⁵</i>	-	-	±	±	+	++
	<i>Integrated Approach⁶</i>	-	-	-	±	+	+

1. The majority of the positive clinical signs selected by examiners must be accurately elicited by candidate eg.
 - oedema/ clubbing/ pallor → present
 - hepar – 5cm, tender, smooth.
 - Anthropometry plotted accurately + interpreted correctly
2. Correct technique eg. measuring hepar in cms below subcostal margin in MCL.
3. Degree to which candidate needs prompting in eliciting one or more physical signs.
4. An assessment of the confidence and consideration with which patient is handled.
5. An indication of the candidate's understanding of the pathophysiological basis for the one or more physical signs elicited earlier eg.
 - oedema in nephrotic syndrome as a manifestation of eg. ↓ albumin
 – ↓ oncotic pressure
6. Ability to integrate signs, understand the pathophysiology and consider the principles of management.

PSYCHIATRY 2010

Department Of Psychiatry

1. **BLOCK**

The Psychiatry block is six weeks. Three weeks will be spent at King George V Hospital and three weeks at Town Hill Hospital.

2. **PROGRAMME CO-ORDINATING OFFICERS**

Professor D L Mkize, School of Medicine, Dr S Saloojee, King Edward VIII Hospital, or contact the Administrative Officer, Mrs V Spicer, Department of Psychiatry, Room 414, Medical School, extension 4321.

3. **BLOCK PROGRAMME**

The programme will be handed out on the first day of the block.

4. **REPORTING STATION**

All students are to report to Dr Naidoo, Townhill Hospital, and Dr Paruk at King George V Hospital at 08h30 on the first day of their block.

5. **OBJECTIVES**

To prevent, diagnose and manage psychiatric illness at primary care and District Hospital level.

To work as part of a team to ensure that patients with psychiatric illnesses are managed efficiently in emergency and elective situations.

6. **LEARNING OUTCOMES**

At the end of their final year, students should be able to:

- i) Take, record, formulate and present a case history
- ii) Elicit, record and present the clinical signs
- iii) Request and interpret necessary special investigations
- iv) Make a working diagnosis
- v) Understand and manage biopsychosocial factors as they relate to psychiatric disorders
- vi) Understand and implement the methods of preventive psychiatry
- vii) Know and utilize the resources of the community
- viii) Have a working knowledge of the ethics relevant to psychiatric practice
- ix) Admit patients in accordance with the Mental Health Care Act (17 of 2002)

7. **CLINICAL ASSIGNMENTS**

Supervision: Exposure to the multidisciplinary team including the therapeutic strategies employed by each of the members namely, social worker, occupational therapist, nurse, psychiatrist and psychologist. Multidisciplinary ward rounds commence at 08h30 sharp.

Ward duties: Students will be assigned to a Registrar and will be responsible for 4-5 in-patients each. These patients must be clerked, regularly interviewed and appropriate notes kept and all therapies followed for each patient allocated. **This will constitute the Psychiatric Portfolio.** There will be case presentations and daily review meetings.

Out-patient service: Students will attend out-patient clinics as per rotation during their block.

Admissions: These will be done between 08h00 and 16h00 together with the Registrar on intake.

8. **LOG BOOKS** - Log books will be handed to the students on the first day. Completion of these Log Books will serve as the DP requirement for the block.

ATTENDANCE:

Attendance will be registered at:

- a) Long case presentations
- b) Consultant ward rounds
- c) Registrar ward rounds
- d) Grand rounds
- e) Intakes
- f) Tutorials

A minimum of **80%** attendance is necessary at **all** of the above in order to qualify you to attend the end of block and end of semester exams.

9. **ASSESSMENT**

9.1 Methods of assessment to be used in the module (indicate the weighting for each method):

i) Short case	10%
ii) Long case	40%
iii) Written case vignettes	20%
iv) Viva	30%
	<hr/>
	100%

In order to pass this module the student should have achieved an aggregate mark of at least 50% and have completed each component of the assessment.

9.2 **Statement of assessment criteria**

Learners will be assessed on their ability in:

- 1) **The clinical examination**
 - a) to appreciate the clinical significance of the historical data obtained
 - b) to draw conclusions from the mental state examination
 - c) to make a differential diagnosis
 - d) to know what special investigations are required
 - e) to make a final diagnosis according to the DSM IV multi-axial system
 - f) and to draw up a holistic biopsychosocial problem-based management plan

- 2) **The written case vignettes**

to use the clinical data presented to answer the questions asked

- 3) **The viva**

to integrate the knowledge and skills acquired over the first three years of study and the practical application thereof in the 4th year in an effort to manage psychiatric illness presenting in the community and/or institution.

FAMILY MEDICINE 2010

Department of Family Medicine

1. INTRODUCTION

The purpose of this module is to expose students to holistic health care (any patient, any problem, anytime, any where) and to ensure that they are competent to deal with differentiated and undifferentiated health care problems in a variety of settings. This module gives the student intern the opportunity for supervised, experiential learning and site visits to public, private and NGO health care institutions.

2. AIM

- i) The aim of the Family Medicine Course is to introduce students to the principles and philosophy of Family Medicine relevant to the needs of present day South Africa.
- ii) To acquaint students with the health service needs of the various populations of KwaZulu-Natal, the health services available and the identification of areas of improvement.

3. OBJECTIVE

To train students to be able to function as generalists at a district level upon graduating. Students are placed in various sites in the District Health System.

4. LEARNING OUTCOMES

In the context of this module, the student must:

- 1) Demonstrate an ability to evaluate and manage patients with both undifferentiated and more specific problems cost-effectively according to the bio-psychosocial approach.
- 2) Understand how to facilitate the health and quality of life of a Community.
- 3) Conduct all aspects of health care in an ethical, compassionate and responsible manner.
- 4) Learn to recognize, evaluate and reflect on personal and professional strengths and weaknesses and learn to appropriately change professional practice and behaviour according to available evidence.
- 5) Learn and understand the importance of being part of a network of service providers as this relates to teamwork, referrals, continuing medical education etc.

BLOCK PROGRAMME

This will be a six week working block. First 2 days – orientation and introduction to Family Medicine and the rural district hospital placement. During the next 5 ½ weeks you will spend 2 ½ weeks at a rural district hospital, 1 week at an urban district hospital, 1 week with a GP and 3 days visiting Cheshire homes and the Hospice. Family Medicine will co-ordinate and facilitate the Rural attachment programme for the Faculty. Students are also expected to with identify General Practitioners for mentorship and rotation. During the 6th week of the block there will be lectures on a variety of topics related to Family Medicine and consolidation at medical school.

A. ATTACHMENT TO DEPARTMENT

1. Objectives of Departmental Attachment

- a. Orientation and introduction to principles of Family Medicine
- b. Lectures covering topics such as:
 - Life Style Issues
 - Counselling Skills
 - Communication
 - Dr-patient relationship
 - Financial Management
 - Data Interpretation
 - Human Sexuality
 - Practice Management
 - Common ethical issues
- (iii) Debriefing following site/clinical attachments
- (iv) Consolidation
- (v) QIP feedback

B. GENERAL PRACTICE ATTACHMENT

1. Organisation of Attachment

Student Interns will be allocated by the Department to a qualified Family Physician working in a General Practice for five days. Student interns are required to attend the practice daily. The name, address, telephone number of the allocated Family Practitioner can be found in Annexure B.

Student Interns should telephone the family practitioner to whom they have been attached to during the week before the commencement of their attachment. This will allow the Family Practitioner to advise the student concerning the time at which he should present himself at the practice and will also provide an opportunity for both parties to establish an early rapport.

Student Interns must make their own transport arrangements to and from the practice.

Conduct and dress should be appropriate to the professional circumstances in which students find themselves.

At the conclusion of this attachment the Family Practitioner will provide an evaluation of the Student Intern with particular reference to professional conduct, co-operation, participation, insight and attendance.

2. Objectives of General Practice Attachment

- a) To experience General practice and to observe its role in relation to both the referral hospital and the community.
- b) To note the differences in emphasis in respect of promotive, preventive, diagnostic, therapeutic and rehabilitative care in family practice and the referral hospital.

- c) To gain awareness of the importance to health and health care of the domestic, social and occupational environments.
- d) To study the disease spectrum, and personal characteristics of patients attending the family practice.
- e) To appreciate the key principles of family medicine and the process involved in making comprehensive assessment of patient problems.
- f) To acquire the skills necessary for the clinical care of patients.
- g) To gain experience in the management of medical, surgical and other emergencies, the conduct of domiciliary visits to patients and to observe the carrying out of minor procedures.
- h) To note the pattern of referral of patients to consultants, hospitals and supportive agencies (eg welfare organisations) and their referral back to the Family Practitioner.
- i) To note the various components in record keeping as well as the different types of record systems, utilised by various practitioners in primary care.
- j) In respect of establishing and operating a family practice to gain awareness of:
 - i) factors which influence the choice of location
 - ii) staffing levels and staff functions
 - iii) equipment requirements and levels of provision
 - iv) capital and recurrent expenditure
- k) To gain awareness of the statutory requirements of Family Practitioners.
- l) To observe and practice the ethical requirements in respect of confidentiality and other aspects of professional conduct.
- m) To identify relevant family and community issues and to engage in discussion or activity with the GP to act on these issues.

C. RURAL ATTACHMENT PROGRAM

2 ½ weeks of the six weeks is allocated to the Rural attachment program. The Department of Family medicine takes responsibility for the organisation and co-ordination of student attachment to rural district hospitals during these 2 ½ weeks. Our aim is to provide exposure to broad multidisciplinary issues in rural health for all final year students. It is necessary that Student interns be exposed to and obtain experience in the delivery of primary care in rural and developing areas so that they are equipped to meet the service delivery needs of all communities.

Objectives of rural attachment:

1. To gain a general knowledge of the activities of rural district hospitals, their peripheral clinics and visiting points in respect of comprehensive health care.
2. To learn and appreciate decision making processes using the basic technology available at a level 1 hospital
3. To become skilled in the comprehensive management of undifferentiated problems with the resources available at a level 1 hospital and without the support of specialists on site.
4. To know the costs involved in providing health care and develop an appreciation of cost effective management
5. To learn to appreciate that primary health care is an academic discipline of equal status to that of other medical disciplines yet deserving greater attention because it impacts the lives of far more health care seekers than all other disciplines combined except for community health.
6. To gain a better understanding of the DHS and the role played by the District hospital and other structures in the district, in meeting the objectives of the DHS
7. To foster an ongoing relationship between the Provincial Department of Health, the Nelson Mandela School of Medicine, and the many rural hospitals involved in the program.
8. To identify role models

Activities through which these objectives will be accomplished

1. Participate in health education and preventative programmes
2. Integration of students into health care and other relevant activities and participation in hospital services at the discretion of the medical managers.
3. Participate in in-service training programmes, lectures and discussions
4. Visit one peripheral clinic and at least one mobile clinic source point in the vicinity and participate in the services rendered by these thereby gaining awareness of the services provided and the health priorities of the community
5. Undertake a study on one patient with a priority problem using a patient centred approach. (*"Priority" to be determined in terms of common, serious, preventable or remediable and of concern to the community*)
6. Undertake a Quality Improvement (QI) project selected in consultation with the Medical Manager.
7. Daily seminar presentation on common conditions. At the end of the rural block you will have a clinical assessment. This will be part of on site assessment.
8. Completion of tasks as outlined in the log book

Rural hospital rules:

1. Students interns may be residentially attached to a rural hospital up to a period of 14 days
2. Transport is provided to and from hospitals to which they are attached
3. Students will be guests of the hospitals to which they are attached and should behave accordingly.
4. Students will be under the disciplinary control of the Medical Manager / co-ordinator to whom they will be responsible.
5. Telephones may not be used for private reasons without the permission of the hospital authorities. Before leaving the hospital all telephone accounts must be settled.
6. No student may leave the hospital until the end of the attachment period. In the event of any special circumstances requiring departure prior to the set date, such departure will be on the authority of, and by arrangement with, the Medical Manager who will communicate such information by telephone to the Department of Family Medicine. This rule will be strictly adhered to.

7. Visits by relatives and / or friends are not permitted
8. Students are required to collect their anti-malarial prophylaxis one week prior to the rural attachment
9. In matters of urgency or difficulty, students may contact the Head of Department at any time at the following number : Department of Family Medicine, 2604485 or cell no of co-ordinator (Professor SS Naidoo 083 229 8876)

Hospitals Committed to the Rural Programme

A list of all participating hospitals is available in the Department of Family Medicine. Please consult the laminated map in the department for further clarification.

D. Urban district hospitals

You will be attached to the Family Medicine department at either Addington hospital, Northdale hospital, Wentworth hospital or McCords Hospital. You will be expected to clerk patient in Outpatients, Casualty, the ARV clinic or in the generalist wards and to present these patients for discussion.

Assessment:

In-block assessment:

- Portfolio (5%)
- Presentation (5%)
- Quality Improvement Project (10%)
- MCQ - Lan True/False (10%)
- Short Answer Management Plan (SAMP) (10%)
- Clinical Consultation (15%)
- OSCE (45%)

To pass:

A student must

- obtain an overall mark of at least 50%
- obtain at least 50% in the OSCE

**** STUDENTS WHO FAIL TO MEET PROMOTIONAL CRITERIA WILL HAVE TO REPEAT THE BLOCK**

NOTE : In order to gain a distinction for the year mark, it is necessary to obtain a subminimum of 75% for the End of Block assessment.

Students who have obtained 50% and over in the block assessment **have satisfied the promotional criteria.**

Students with less than 50% in the block, will repeat the block and will be subject to an assessment.

DP Requirement

Attendance at ALL attachments and completion of all assignments is required. Failure to comply, in the absence of a reason which is satisfactory to the Head of Department, will result in the non-issue of a DP certificate.

All students must hand in log book and portfolio by **16h00 on the 6th Friday of the Block**. DP's will be issued before the final exam. Please consult the notice Board before the start of exams.

Admin Office:

The Department of Family Medicine is sited on the 2nd floor East Wing, George Campbell building (adjacent to Public Health). All students wishing to interact with consultants on an individual or small group basis are requested to make an appointment via the departmental secretary on 031 260 4485/4770. A sub-office of the Department will be based at Wentworth.

Annexure A

REFERENCE BOOKS	
AUTHOR	TITLE
*Michael Balint	The doctor, His Patient and the Illness
*RT Mossop & GS Fehrsen	Family Medicine for students and Teachers
*Paul Tournier	The Healing of Persons
*South African Family Practice Manual – 2 nd Edition	B. Mash, J. Blitz
*Morrell David	The Art of General Practice
*Ian McWhinney	A Textbook of Family Medicine
*McDaniel, Susan H	Family-orientated Primary : a manual for medical providers
*Ian McWhinney	An introduction to Family Medicine
*Randol Barker, John R Burton, Philip D. Zieve	Principles of ambulatory medicine
#Viktor E Frankl	Man's Search for Meaning
#John Berger	A Fortunate Man
#Viktor E Frankl	The Doctor and the Soul
#Chris Ellis	The soft edges of Family Practice
#Ivan Illich	Medical Nemesis "The Expropriation of Health
\$ GJ Pistorius	Family Practice Management
\$ Perter G Norton	Primary Care Research : traditional & innovative approaches
\$ Robert E Rakel	Textbook of Family Practice
Bob Mash	Handbook of Family Medicine

KEY: * Recommended reading
 # Pleasure reading
 \$ Resource reading

Annexure B

FAMILY MEDICINE

GENERAL PRACTICE DIRECTORY

<u>AREA</u>	<u>DOCTORS NAME</u>	<u>PRACTICE ADDRESS</u>	<u>TELEPHONE</u>
Merebank	Dr PN Govender(FP)	P O Box 31032,MEREBANK,4059	4613898
	Dr B Seetharam(FP)	34 Dharwar Road,MEREBANK,4059	4613898
Overport	Dr P Jugnandan(FP)	283 Quarry Road East Springfield, Durban, 4091	2093141
	Dr U Govind (FP)	P O Box 19077,DORMERTON,4015	2075252
Chatsworth	Dr KM Nair	188 Chatsworth Main Road, Umhlatuzana, Durban	4015627
Mobeni Heights	Dr S Ananth (FP)	121 Meranti Street, Mobeni Heights	4002457
Newlands East	Dr A Suleman (FP)	P O Box 48334,QUALBERT,4078	5777897
	Dr P Ramlachan	Bassa trading Centre, Inanda Road	5778932
Phoenix	Dr MN Chetty (FP)	95 Greenbury Drive,Greenbury,4000	5393225
	Dr T Rugnath(FP)	237 GroveEnd Drive	5393059
Kwa-Mashu	Dr N E Duma		5031211
	Dr A.C.N Ngobese		5032171
Umlazi	Dr NA Modiga	AAS Centre, Umlazi, Durban	9091848
	Dr MNA Mokoape	G1418, Umlazi, Durban	9062727
	Dr N.R Ngema		9069422

PRESCRIBED BOOKLIST : MB ChB 2010

Prescribed booklist for MBCB I-V. All textbooks will be used in themes and in clinical blocks across all years.
These texts should be acquired in year one and retained until year 5.

Discipline/Dept	BOOKS to ACQUIRE	Additional /Reference	Addition
General	Stedman's Medical Dictionary Zulu-English Dictionary Hatton, C. Blackwood. R, Lecture Notes on clinical skills. (4 th Edition) Blackwell Publishing		
Anatomy	1.) Grays - Anatomy for Students 2.) Barr. & Kiernan - The Human Nervous System - an Anatomical View Point 3.) Langman's Medical Embryology 4.) Grant's Dissector 5) Netter FH. 2003. Atlas of Human Anatomy (3 rd ed). Icon Learning Systems, Teterboro, New Jersey		
Biochemistry		Champe PC, Harvey RA. 1987. Lippincott's Illustrated Reviews: Biochemistry (2 nd ed). Lippincott-Raven, Philadelphia (3 rd ed soon?)	
Behavioural Sciences		Schlebusch L (Ed). Clinical Health Psychology: A Behavioural Medicine Perspective. Southern Book Publishers Nicholas L. Introduction to Psychology. UCT Press, Cape Town Hook D, Watt J, Cockcroft K (Eds). Development Psychology. UCT Press, Cape Town Schlebusch L. Mind Shift. UND Press, Pietermaritzburg	
Chemical Pathology	Marshall WJ. Chemical Pathology; Clinical Chemistry. Mosby	Henry. Clinical Diagnosis and Management by Laboratory Methods (2 nd ed). WB Saunders, Philadelphia. McPhee, Stephen J. et al. 2003. Pathophysiology of Disease: An Introduction to Clinical Medicine (4 th ed). ISBN:0071387641	
Clinical Skills Training	Hatton, C. Blackwood. R, Lecture Notes on clinical skills. (4 th Edition) Blackwell Publishing	Bickley: Bates Guide to Physical Examination and History-Taking. (8th Edition.)	
Community Health	Katzenellenbogen JM, Joubert E, Abdool Karim SS. 1997. Epidemiology: A Manual for South Africa. Oxford University Press, Cape Town		
Dermatology		Hunter J, Savin J, Dahl M. 2002. Clinical Dermatology. Blackwell Gawkrodger. 2002. Dermatology: An Illustrated Text (3 rd ed). Harcourt Saze N, Jessop S, Todd G. 1999. Handbook of Dermatology for Primary Care. Oxford University Press, Cape Town. Rycroft RJ, Robertson SJ. 2002. A Color Handbook of Dermatology. Manson Publishers Brown RG, Burns S. 1996. Lecture Notes on Dermatology (8 th ed).	

		Blackwell, Title : A Clinical Atlas of Skin Conditions in HIV/AIDS: An illustrated management guide for healthcare professionals. Authors: Dlova CN, Mosam A Published by the Health and Medical Publishing Group of the South African Medical Association ISBN 1-875098-40-2	
Family Medicine	McWhinney. A Textbook of Family Medicine. Mash B. Handbook of Family Medicine. Departmental Handbook and Manual		
Forensic Medicine and Ethics	1. Hope T, Savulescu J, Hendrick J-Medical Ethics and Law-The Core Curriculum Churchill Livingstone 2008 2. Lecture Notes in Medical law, Ethics and Human Rights 2009...Professor S.C Chima-ISBN-978-0-620-43281-8 Programme of Bio & Research Ethics and Medical Law-College of Health Sciences (available directly from the Departmental Office) 3. Beachamp TL and Childress JF-Principles of Biomedical Ethics, Oxford University Press 2008 HPCSA Guidelines (on WebCT Year 1 and on the LAN: f:/stufs2/vol1/usr/medstu/ethicsand professionalism/HPCSAguidelines) DiMaio V, Dana S. 1998. Handbook of Forensic Pathology. Landes Bioscience.	Additional recommended reading: Pieter Carstens & Debbie Pearmain Foundational Principles of South African Medical Law. Lexis-Nexis, Durban 2008. (Reference Only) Knight B. Forensic Pathology, 2nd ed (1996) London: Arnold. Schwar TG, Loubser JD, Olivier JA. The Forensic ABC in Medical Practice. A practical guide. (1988) Pretoria: Haum. #. Principles McQuoid-Mason DJ, Dada MA Guide to Forensic Medicine and Medical Law Revised edition (2000) Durban: Independent Medico legal Unit.	
General Surgery	Prescribed Das S. A Concise Textbook of Surgery. Das S. A Manual of Clinical Surgery. Bailey H. Bailey and Love's Short Practice of Surgery. Swartz SI. Principles of Surgery. Prescribed Either Clain, A. (Ed.) Hamilton Bailey's Demonstrations of Physical Signs in Clinical Surgery, John Wright. Or Browse, N Symptoms and Signs of Surgical Disease, Edward Arnold.	Recommended DAS Concise Textbook of Surgery Dunphy, J and Way L. Current Surgical Diagnosis and Treatment, Lange Medical Publishers. Morris P J (Eds.) Oxford Textbook Of Surgery, Oxford, (Vol 1) Morris P J (Eds.) Oxford Textbook Of Surgery, Oxford, (Vol 2) Sabiston D (Ed.) Textbook of Surgery, Igagu Saunders. Condon, R E (Ed.) Manual of Surgical Therapeutics, Little, Brown. Hai Ahmad A (Ed.) Textbook of Surgery, Tata McGraw-Hill, 2003, New Delhi Way LW, Doherty GM. Current Surgical Diagnosis and Treatment (11 th ed)	
Haematology		Hoffbrand AV. Essential Haematology. Mehta AB. Haematology at a Glance. Roitt IM. Immunology.	
Histology	Young B, Heath JW. 2006. Wheater's Functional	Junquiera LC, Carneiro J. 2005. Basic	

	Histology. 5 th edition. Churchill Livingstone, Edinburgh. ISSN-13: 9780808923312 and ISBN-10: 0808923315	Histology (11 th ed) ISSN: 0891-2106 and ISBN: 0-07-144116-6	
Medical Microbiology		Mims CA. Medical Microbiology. Sherris MEDICAL MICROBIOLOGY - An Introduction to Infectious Diseases.	
Medicine	<p>"Students must buy ONE of the following:</p> <ol style="list-style-type: none"> 1. Talley NJ, O'Connor S. Clinical Examinations: A Systematic Guide to Physical Diagnosis. Elsevier 2. McLeod J. Methods in Clinical Examination (7th ed). Churchill Livingstone. 3. Munro JF, McLeod JF. Introduction to Clinical Examination (5th ed). Churchill Livingstone 4. Epstein, Perkin and Cookson. Pocket guide to clinical examination. Elsevier <p>PLUS ONE of the following:</p> <ol style="list-style-type: none"> 1. Boon et al. Davidson's Principles and Practice of Medicine. Elsevier. 2. Axford and O'Callaghan. Medicine. Blackwell Science. <p>PLUS the following:</p> <ol style="list-style-type: none"> 1. Longmore et al. Oxford handbook of clinical medicine. Oxford University Press" 	<p>Harrison's Principles of Internal Medicine</p> <p>Klippel JH. Primer on the Rheumatic Diseases</p> <p>Practice of Geriatrics 4th Edition. Duthie, Katz, Malone</p>	
Obstetrics and Gynaecology	<p>Grobler, Cronje. Obstetrics in Southern Africa.</p> <p>Odendall HJ. Clinical Gynaecology.</p> <p>Oxorn-Foote. Human labour and birth</p> <p>Moodley J (Ed). Labour Ward Manual.</p> <p>*Illustrated Textbook of Gynaecology – Mackory</p>	<p>Clayton. Obstetrics by Ten Teachers.</p> <p>Beischer. Obstetrics and the Newborn</p> <p>van der Spuy A Z, Anthony J. 2002. Handbook of Obstetrics and Gynaecology. Oxford University press, CT</p>	
Ophthalmology		<ul style="list-style-type: none"> o Croakes RL, Holmes SP. An Outline of Ophthalmology. Butterworth, Durban. o Kanski JJ. Clinical Ophthalmology: a systematic approach (5th ed). Butterworths, Durban. o Vaughan D, Ashbury T, Riordan-Eva P. General Ophthalmology: (13th ed). o Basic Ophthalmology. Cynthia A Bradford. 8th Edition. American Academy of Ophthalmology. 2004 o Ophthalmology: an illustrated colour text. Mark Baterbury, Brad Bowling. 2nd ed. Elsevier Churchill Livingstone. 2005 	
Orthopaedic Surgery	Sarkin TL. Seven Paths to Orthopaedics.		

	Apley GA. Apley's System of Orthopaedics and Fractures.		
Otorhinolaryngology		Hall, Coleman, Diseases of the Ear Nose and Throat (15 th ed).	
Paediatrics	Coovadia HM, Wittenberg D. Paediatrics & Child Health (4 th ed) Oxford Publication Ireland et al. Paediatric Primary Health Care, Oxford. Handbook of Paediatrics. Oxford. Mash. Handbook of Family Medicine. Oxford. Handbook of Generic and Congenital Syndromes. Kibel M, Saloojee H, Westwood T Child Health for All 4 th edition Oxford publication ISBN 9780195764956 Paediatric EDL IMCI booklets RB Goldbloom Pediatric Clinical Skills 3 rd Edition Pub Saunders ISBN 0-7216-9475-6	Current paediatric diagnosis and treatment Eds William H Hay, Anthony R Haywood Myron J Levin, Judith M Sondheimer Publishers Lange 6 th Ed	
Pathology	Cotran RS, Kumar V, Collins T. 1999. Robbins Pathologic Basis of Disease (6 th ed). WB Saunders, Philadelphia. Rubin E. 2001. Essential Pathology (3 rd ed). Lippincott Williams & Wilkins, Philadelphia		
Pharmacology	Department of Pharmacology (UCT). 2008. South African Medicines Formulary. Faculty of Health Sciences, University of Cape Town (8 th edition) PLUS any one of the following: Mycek MJ, Harvery RA & Champe PC. Lippincott's Illustrated Reviews: Pharmacology: (4 th ed). Winstanley P, Walley T. Medical Pharmacology (4 th ed). Reid JL, Rubin PC, Whiting RB. Clinical Pharmacology (8 th ed). Neal MJ. Medical Pharmacology at a Glance (4 th ed). Ketzung MG. Basic & Clinical Pharmacology (10 th ed) Beneett PN, Brown MJ. Clinical Pharmacology (12 th ed)		
Physiology	Guyton AC, Hall. 2000. Textbook of Medical Physiology (10 th ed). Saunders, Philadelphia. Ganong WF. 2001. Review of Medical Physiology (20 th ed). Prentice Hall International, London.		
Psychiatry	PRIMARY HEALTH CARE PSYCHIATRY A PRACTICAL GUIDE FOR SOUTHERN AFRICA Edited by Sean Exner Baumann Juta and Company	. PROFESSOR MKIZE'S LECTURE NOTES ON PSYCHIATRY (Obtainable from the Department)	
Radiology	.	Sutton D. Radiology and Imaging for Medical Students	
Urology	Chris Heyns and Dick Barnes: Introduction to Urology. Available from the Dept of Urology		
Virology		ESSENTIALS of diagnostic virology. edited by Gregory A. Storch New York : Churchill Livingstone, 2000. ISBN 0443076324	

		Human Virology (Second Edition) Leslie Collier & John Oxford Oxford University Press ISBN 0-19-262820-8	

University of KwaZulu-Natal
Nelson R Mandela School of Medicine

DIVISION OF MEDICINE

Final Year Junior Intern Logbook

2010

Students Name	
Students Number	
Group	
Hospital	

FOREWORD

The purpose of the Log Book is to:

- Advise students of the requirements of the Department
- Assist students to record their training so that their experience can be accurately recorded and any deficiencies identified and addressed.
- Assist consultants and the Department to assess the overall training of the student interns and provide any extra experience needed for the students benefit.

The log book:

- Must be carried by students at all times and must be completed daily.
- Must be signed by the consultant/registrar at each tutorial, ward round and intake and when procedures are performed or observed.
- Must be discussed by the students with their unit consultant once a week. This will ensure an accurate assessment, correct any errors and/or deficiencies.
- Will be reviewed by the unit head at the end of the block.
- Must be returned to the Department by the last Tuesday of the block. If not returned the DP certificate will be withheld and the student will not be eligible to sit for the examination in internal medicine.

CO-ORDINATORS

- Dr S Hariparshad
- Dr B Naidoo
- Dr A Naidoo
- Dr I Paruk

HEAD OF DEPARTMENT

- Prof R Hift

COURSE OUTCOME

To produce a competent, professional, caring, thinking clinician

COURSE OUTLINE

In this six-week block, students will be attached to a general medical firm and will have weekly tutorials in Haematology and Dermatology. The block consists of a 4 day introductory course in Albert Luthuli Hospital with an emphasis on major topics

in every subdiscipline. The remainder of the block is to be spent at one of the regional hospitals. Students will be allocated to a medical unit in any one of the metropolitan hospitals in the Durban Functional Region. Students must report to their Unit or Departmental Head at the start of each block period.

The student is expected to become part of the medical team to which they are assigned. The key objective of the Junior Intern teaching programme is to produce an independent medical practitioner who is able to diagnose as well as treat common medical diseases and refer those which s/he is unable to manage to appropriate level of health care. The course is designed to be an application of the theoretical and practical knowledge acquired in earlier years. Thus, at the end of the course the student should be able to:

- Take a detailed history, correctly elicit and interpret all clinical signs.
- Formulate an appropriate problem list.
- Present in a problem-oriented manner.
- Use and interpret laboratory investigations rationally.
- Manage common conditions and medical emergencies;
- Plan ambulatory management of common chronic disorders.
- Practise professionally, ethically and compassionately.

LOGISTICAL DETAILS

Transport

The University Undergraduate Administration will provide transport to and from the various teaching centres.

HIV needle stick injuries

Should a needle stick injury occur, the consultant in the ward must be notified immediately. The HIV Hotline is: 082 822 2290 or 082 822 2291. The National Hotline number is: 0800 110 605.

Patient communication

Please note that students need to learn basic Zulu in order that they may be able to communicate effectively with Zulu-speaking patients; Translators will NOT be supplied for the purpose of tutorials or examinations.

ETHICAL CONSIDERATIONS

Professional behaviour

Obviously the right to examine patients carries important responsibilities. The following guidelines constitute policy in the Department and adherence is mandatory.

- Students are expected to conduct themselves professionally.
- Students should be neatly and professionally dressed.
- Students should wear a clean white coat at all times with a name badge.
- Please ensure that you introduce yourself to the ward staff.
- Not more than 2 students should examine a patient at any given time.
- A patient should be examined gently and should not be exposed unnecessarily.

Selecting patients for interviews and for group teaching.

- Patients who are very ill or in pain or have been heavily exposed to students should not be used for teaching unless they freely consent.
- The student or tutor who selects the patient must identify himself or herself to the patient and inform the patient that he or she will be responsible for them and their comfort until they return to their ward.
- He or she must also explain to the patient the reason for the tutorial, tell them what will happen during the tutorial, how long they will be occupied and must ask for their permission.
- He or she retains responsibility for the patient's well-being from the moment the patient is approached until all students have left.
- Upon completion of the use of instruments, all such instruments must be returned to the duty room. Patients charts and x rays must be neatly replaced.

Respect

- Students are expected to behave in a professional manner at the bedside. Students are expected to dress neatly and professionally. Jeans, T-shirts, tank tops and takkies are prohibited.
- Every patient is to be treated with respect. They must be introduced to the tutor and the group at the start of the tutorial, and must at all times be addressed by name.
- Though aspects of behaviour which impact negatively on health, such as alcohol abuse, smoking, poor hygiene and obesity, may be frankly mentioned and discussed, this must never be done in a moralistic, judgmental, jocular or disparaging tone. In the case of particularly sensitive information, the patient's permission should be sought before

disclosing it publicly.

- Students must take cognisance of visiting hours and should not examine patients at these times.

Privacy and Confidentiality

- Curtains must be drawn around beds whenever a patient is exposed or undressed in such a way that they are completely hidden from the view of other patients, visitors and passers-by.
- Patient confidentiality will be respected by every student participating in a tutorial, and no patient is to be discussed (beyond the bounds of strict medical interest) outside the tutorial.

Comfort

- Throughout the interview or tutorial, the patient is to be kept comfortable. Where it is necessary to disturb the patient in order to examine them, or to demonstrate findings to a group, the need for this is to be explained to the patient and the discomfort kept to a minimum. The student or tutor who selected the patient for the tutorial is primarily responsible for the patient's comfort throughout the tutorial.

Modesty

- It is often necessary to expose the patient in order to allow careful examination and demonstration of findings. Every such patient has a right to an explanation as to why they will be undressed, for how long this will be necessary, and an assurance that this will be done sensitively.
- The patient must only be exposed for the time necessary to examine any particular area (such as the chest), and must be covered as soon as the examination is complete or at any time when the examination is suspended to allow questioning of students, teaching or discussion—under these circumstances, they should be covered temporarily with a sheet or blanket. Patients must not be left exposed while discussion takes place around the bed. This is the responsibility of whichever person last touched the patient or, failing that, any student who realises that the examination has been suspended.
- Intimate examinations of the genitalia and rectum must not take place in groups except under special circumstances, and then only with the patient's permission.

Thanks and explanation

- At the conclusion of the tutorial, the patient must be thanked and must be offered an opportunity to ask for answers for any question they may have arising from what they have heard during the tutorial.

DUTIES AND RESPONSIBILITIES

WARD ATTENDANCE

- Weekdays from 08h00 to 16h00
- Saturdays from 08h00 to 12h00
- Sundays: for post intake rounds
- Intake days: Includes weekends, from 08h00 till 22h00

The above times serve as broad guidelines and student interns may be required to remain in attendance outside these hours at the discretion of a Consultant or Senior Registrar.

WARD DUTIES

Each student intern will be allocated to a medical team and will work with an intern, registrar and consultant. The following are the responsibilities of each student intern:

Attendance

- Attendance at all intakes, daily registrar/consultant ward rounds and follow-up clinics.
- Attendance at Grand Rounds at the respective hospitals.

Clinical responsibilities

- Each student is expected to care for a minimum of 3 patients at any one time in their respective units and a minimum of 15 patients during the entire 6-week block.
- The student is required to fully clerk, present to the registrar/consultant, perform relevant procedures, obtain results and discuss management with the registrar/MO for all their patients.
- The student is responsible for the daily follow-up care of their patients from admission until discharge and all patients must be discussed with the registrar/MO daily.
- Student interns are not allowed to write any prescriptions.
- Procedures—student interns must observe the various special procedures performed in the management of medical patients. They should perform certain procedures such as venepuncture, lumbar punctures, pleural fluid aspirations, etc. under the supervision of the Registrar or Medical Officer.
- ECG: Student interns are expected to perform and interpret ECGs.

Intake days

- Routine ward duties, formal teaching rounds and tutorials will not be altered.
- On completion of ward duties student interns will attend the intake and the clinical duties outlined above will apply. The student may only leave the intake ward after consultation with the registrar/consultant.

TUTORIALS

General Medicine

There will be a minimum of 4 tutorials per week. Each student should ensure that he or she is always ready to present in any tutorial, as the choice of the presenter will be made by the tutor and not the students.

Case presentations must be problem-orientated. Students are expected to present a broad spectrum of diseases during the tutorials, intakes and ward rounds.

Tutors must be informed if a scheduled tutorial is not to take place.

Haematology

Tutorials are as outlined in the weekly schedule. Students must collect their Haematology notes and case studies a week prior to commencing their block.

Dermatology

Tutorials are as outlined in the weekly schedule.

Grand Rounds

All student interns must attend Grand Rounds at their respective hospitals:

- King Edward VIII Hospital: 12h00 every Wednesday in L4
- Addington Hospital: As per Roster
- RK Khan Hospital: Neurology Meeting in Conference Room: 14h45 alternate Tuesdays
Grand Round at College of Nursing: 14h45 on Thursdays

SYLLABUS

The breadth and depth of knowledge expected is fully set out in the core syllabus. This is available on the Department's website (<http://www.ukzn.ac.za/medicine>). It is essential that you consult this regularly throughout your stay in Medicine.

Note in particular that your learning should be built around typical clinical presentations, rather than diseases. That is: approach to and differential diagnosis of patients presenting with: **dyspnoea, haemoptysis, chest pain, weakness**, etc, rather than learning facts about this disease or that disease. **This is how your exams will be constructed.**

PORTFOLIO OF PATIENTS

Your portfolio contains details of patients whom you clerk and **upon whom you base your self-directed learning**. This portfolio will be assessed in the latter weeks of your block via a dialogue between yourself and an examiner.

Requirements

You will need to have a minimum of 10 cases by the end of the block. 2 cases will be examined in an oral examination by the Department of Medicine. You should be able to explain your case confidently and discuss aspect around it with regard to clinical assessment, diagnosis, investigation, management, complications and pathophysiology.

Presentation of the portfolio

The folder

1. All sheets must be neatly inserted into a file. Cases must be separated with cardboard inserts. Loose sheets are not acceptable.
2. Portfolios may be legibly hand-written or typed.
3. The front cover or first page must contain the student's name, student number and dates of the block.
4. This next page must contain a plagiarism declaration.
5. The next page must contain a numbered list of the patients and their diagnoses.
6. The actual case reports follow.

The case reports

1. Each case in the portfolio should consist of a focused

history, examination findings, clinical assessment and problem list (which includes the differential diagnosis) and relevant laboratory plus radiology results. It will also contain follow-up notes detailing the patient's clinical course and management to the point of discharge. Clerking of patients seen by you on a single occasion without ongoing follow-up will not suffice and indeed will risk you failing the Portfolio

2. Each case must represent a patient who was properly interviewed and examined by you. The emphasis of the assessment is upon your engagement with the patient over the course of his/her illness. Incorporation of material merely copied out of hospital notes will result in failure, and if done dishonestly, or if, copied from another student or fabricated, will constitute a serious offence.
3. Case reports should not be lengthy dissertations and preferably not more than 2-3 pages per case. It is important to note that your understanding of the clinical cases in the portfolio will be assessed and not the aesthetic appearance of the content.
4. You are welcome and encouraged to follow each report up with additional resource material, such as relevant articles or your own notes, but note that everything in your portfolio is examinable in the context of your patient even the extra information. If you include it you must be prepared to discuss it, not as freestanding information, but in terms of how it relates to your patient.
5. Your portfolio itself will not be marked. All your marks will come from your ability to discuss the patients it records verbally in an oral interview. Do not waste time making the actual folder look beautiful. Your job is to have clerked the patient properly, thought carefully about how the history and physical findings relate to the problem list you drew up, to use your experience of clerking the patient to decide what you do and do not know and to take steps to improve your knowledge and skills, and to have used the opportunity to follow the patient's course until the time of discharge and see how this relates to the investigations, management and prognosis.

Portfolio: Learning objectives

The 5 principal learning objectives are:

1. To integrate bedside learning with book learning by focusing your learning around specific questions relating to real clinical problems.
 - To improve the quality of your clinical interviewing and examination skills.
 - To develop your clinical reasoning skills: that ability to use clinical information obtained during the interview and examination of patient to ultimately synthesize a concise, coherent **clinical assessment**.
 - To develop your skills as clinician in terms of appropriate investigation and treatment.

- To encourage reflection on the dimensions of the illness of your patient in terms of pathology, physiology, complications, prognosis and follow-up, referral, and including psycho-social factors.

We expect you to be able to:

- Discuss a relevant differential for each presenting complaint, ordered by probability given the context of the patient and the environment in which we practise.
- Describe clinical features (history and/or examination findings) that would help you differentiate between the different causes of each complaint.
- Formulate a short list of relevant, cost-effective investigations that would assist you in determining the specific cause (diagnosis) of each one of these complaints.
- Anticipate and interpret the results of the investigations you have selected.
- Recommend appropriate management and comment on the course of the patient as observed by you.

We expect you to use your portfolio to improve and to demonstrate your powers of critical thinking, including your ability to:

- Draw on your knowledge of the basic sciences
- Interpret data
- Differentiate between evidence and opinion
- Draw conclusions on the basis of relevant information
- Identify (the source of) the problem and strategize solutions.

With acknowledgements to Prof J Seggie, UCT

DP REQUIREMENTS

During the course of the clinical block students must fulfil all the requirements for Medicine, Haematology and Dermatology to obtain a DP.

General Medicine

- Attendance at all tutorials, ward rounds, intakes and follow-up clinics. Failure to attend any single tutorial/ ward round/ intake/ clinic requires an acceptable written apology or medical certificate to be handed to the unit head. Since optimum clinical exposure is necessary to achieve clinical competence, any student who fails to attend at least 80% of the academic programme may not obtain a DP even in the presence of a valid reason.
- Satisfactory recording of the minimum clinical responsibilities outlined in 5b.
- Logbooks should be reviewed by the Head of Unit at the end of each week for assessment of the progress of each student.

Haematology

- Students are expected to attend all tutorial sessions with a minimum 80% attendance.
- Students will be assessed on the presentation of the assigned cases and participation in group discussion.
- Failure to meet the above requirements will result in the DP certificate being withheld.
- The weekly student attendance register must be signed by the tutor and handed/sent/faxed to the Haematology Secretary on a weekly basis.

Dermatology

Junior Interns have to attend all tutorials in dermatology. Failure to attend any tutorial will require submission of either a medical certificate or a satisfactory explanation, in writing, acceptable to the Head of Department

Submission of logbook and portfolio

See Rule SUME4.

- The student is required to return a completed logbook by the end of the 6th week.
- Submission of clinical case portfolio with a minimum of 10 cases and in addition a further list with a minimum of another two patients clerked per intake by the end of the 6th week of the block. A detailed clerking of the 16 portfolio cases is required while a summary of the additional two intake patients per intake suffice.

FAILURE TO OBTAIN A DP CERTIFICATE

If the DP requirements have not been met, the student will be notified via a notice on the Department's notice board, during the last week of the block. In the absence of a DP certificate students will not be permitted to participate in any Medicine examination. Student who have not obtained a DP certificate have 3 working days within which to appeal for a change in their DP status. This appeal must be made through the Dean's office. Contact Student Affairs Offices for more detail. Students denied a DP certificate will only be allowed to take the exams after written approval has been received from the Dean's office.

Special circumstances

Condoned leave of absence or aegrotat examinations can only be granted by the Dean's office, after appropriate application. No exceptions will be made. If approval for an aegrotat examination has been granted by the Dean's Office, a

copy of this approval must be provided to the Department of Medicine. No arrangements for any aegrotat examination will be made without appropriate approval.

ASSESSMENT AND EXAMINATIONS

The examination will consist of 2 components, each of 2 examinations. Each component will need to be passed individually.

CLINICAL COMPONENT

Clinical examination will consist of:

Clinical examination (60%)

This will comprise:

- 3 directly observed short case patient assessments (12.5% each)
- Oral portfolio examination (12.5%), serving as a fourth clinical assessment.
- Dermatology clinical examination (10%)

To pass the clinical component (60%), students:

1. Must pass 3 of the 4 clinical assessments (3 cases plus portfolio assessment).
2. Must obtain an average of more than 50% in the four clinical cases.
3. Must obtain more than 50% average in the clinical examination overall.

Written examination (40%)

This will comprise:

- Multiple choice questions. The format is a combination of one-best-answer and extended-matching-items. Questions will test both clinical interpretation and knowledge, as well as interpretation of common investigations such as ECGs, radiographs and laboratory data.
- To pass the written component, students are required to achieve an overall mark of 50%.

ACHIEVING A PASS

The aim of the examination is to assess clinical competency in internal medicine, therefore emphasis is placed on clinical competence. This is assessed on the basis of the clinical examination and the written examinations, all of which are heavily weighted in favour of practical, applied knowledge and isolated theory. The

final decision is based on the overall performance of the student, which is reviewed at the meeting of the examination board of the Department of Medicine. The examination board consists of the academic staff of the Department of Medicine and external examiners. The external examiners are the final arbiters in the examination board's deliberation.

ADVICE ON EXAMINATIONS

You are strongly advised to visit our Departmental website (<http://www.ukzn.ac.za/medicine>). There, under the section *Students*, you will find a number of helpful resources setting out in more detail what is expected of you in the assessments, what the examiners' instructions are, and how you might best prepare for the assessments.

MARKING GUIDES

The marking guidelines against you which will be measured in your bedside and portfolio examinations are included in the following pages.

MARKING GUIDE: CLINICAL EXAMINATION

YEARS 4-5

ZONE OF FAILURE

30	Unacceptable	<p><u>Core competencies</u> (see below) are missing or unreliable. As an intern, such a student could not manage the patient adequately without continuous direction/redirection from a colleague.</p> <ul style="list-style-type: none"> • Little evidence of confidence and experience in working with patients • Poor history • Poor examination technique • Failure to detect physical signs, guessing and invention • Poor understanding of pathophysiology underlying history and examination • Inability to compile an adequate problem list
35		
40	Fail	
45		
48		

No mark between 48 and 55 to be given. In order to pass, students must clearly be within reach of the core competencies listed below. In all other cases, a mark of 48% or less must be given.

ZONE OF COMPETENCE WITH ASSISTANCE

The student possesses the core competencies listed below but cannot demonstrate them fully without some assistance and prompting.

55	Weak pass	Would be safe managing the patient but only with assistance. Needs some help with <u>core competencies</u> (see below) in order to arrive at the point where they can draw up a problem list and plan of management
58	Acceptable pass	Is almost at the point of possessing all the <u>core competencies</u> (see below) needed to manage the patient completely independently.

ZONE OF COMPETENCE

The safe student possesses the following core competencies (see below) and demonstrates them with little or no assistance. Such a student could function independently as an intern.

62	<p>More help needed and less confidence</p> <p align="center">↑</p> <p align="center">Competent Pass</p> <p align="center">↓</p> <p>Less help needed and more confidence</p>	<u>CORE COMPETENCIES</u>
65		<ul style="list-style-type: none"> • Handles patient confidently • Takes an appropriate history • Good, confident examination technique • Elicits the relevant physical signs with minimal assistance • Interprets the history and signs accurately • Understands the pathophysiology underlying the history and physical examination • Draws up a problem list which includes all the relevant problems, demonstrating sound clinical reasoning <i>(if time permits)</i> • Suggests a rational plan of management (investigation, treatment and follow-up)
68		

ZONE OF SUPERIOR PERFORMANCE

*The superior student needs minimal or no help with **core competencies** (see above) and is able to draw spontaneously and quickly on an appropriate network of associations between symptoms, signs, pathophysiology, epidemiology, diagnosis, investigation and treatment.*

72	Very good	A mature student who is able to make appropriate associations based on cues in history and examination. Responds to assessor's verbal cues by moving effortlessly between symptoms, signs, diagnoses, treatments, pathophysiology etc to illustrate their interrelatedness, rather than just giving direct answers to direct questions.
74		
76	Superb	An exceptional student who is able to participate in a wide-ranging discussion of the patient and their clinical problems which clearly shows that their understanding of the patient is embedded in a broad and confident familiarity with internal medicine.
80		
85		
90		

MARKING GUIDE: ORAL PORTFOLIO EXAMINATION

YEARS 4-5

ZONE OF FAILURE: LACK OF APPLICATION

0-20	Culpable	<ul style="list-style-type: none"> • Fraud, plagiarism or invention (in which case, report for disciplinary action) • Complete lack of application to the tasks of meeting and examining patients, recording the interviews and learning from them.
30	Unacceptable	Very poor application to the tasks of meeting and examining patients, recording the interviews and learning from them.
35		

ZONE OF FAILURE: LACK OF COMPETENCE

40	Fail	<p><u>Core competencies</u> (see below) are not met. Essentially the student does not understand his/her own case. The student cannot discuss the interplay between history, physical findings and the problem list. Patient interviews have not been used to define and stimulate further learning.</p>
45		
48		

No mark between 48 and 55 to be given. In order to pass, students must clearly within reach of the core competencies listed below.

ZONE OF COMPETENCE WITH ASSISTANCE

The student possesses the core competencies listed below but cannot demonstrate them fully without some assistance and prompting.

55	Borderline pass	Would be safe managing the patient but only with direct supervision. Needs some help with <u>core competencies</u> (see below) in order to see the patient, their problems and their management in the correct perspective.
58	Acceptable pass	Is almost at the point of possessing all the <u>core competencies</u> (see below) needed to manage the patient completely independently.

ZONE OF INDEPENDENT COMPETENCE

The safe student possesses the following core competencies (see below) and demonstrates them with little or no assistance:

62	More help needed and less confidence	<p align="center"><u>CORE COMPETENCIES</u></p> <ul style="list-style-type: none"> • Recalls the patient easily. • Clearly understands the patient's problems and has an appropriate perspective on them. • Discusses the significance of the history, examination and investigations in the light of the patient's problems. • Can apply pathophysiological principles to the patient's problems.
65	Competent Pass	

68		
ZONE OF SUPERIOR PERFORMANCE		
<i>The superior student needs minimal or no help with <u>core competencies</u> (see above) and is able to draw spontaneously and quickly on an appropriate network of associations between symptoms, signs, pathophysiology, epidemiology, diagnosis, investigation and treatment.</i>		
72	Very good	A mature student who is able to make appropriate associations based on cues in history and examination. Responds to assessor's verbal cues by moving effortlessly between symptoms, signs, diagnoses, treatments, pathophysiology etc to illustrate their interrelatedness, rather than just giving direct answers to direct questions.
74		
76	Superb	A superior student who needs minimal or no help with <u>core competencies</u> (see above) and is able to participate in wide-ranging discussion of the patient and their clinical problems which clearly shows that their understanding of the patient is embedded in a broad and confident familiarity with internal medicine.
80		
85		
90		

PROCEDURES

PROCEDURE	DATE	CONSULTANT/REG SIGNATURE	DATE
ECG Recording			
ECG Interpretation (Diagnosis)			
Lumbar Puncture			
Pleural fluid aspiration			
Ascitic fluid aspiration			
CVP line insertion – observed			

Liver biopsy – observed			
Bone marrow biopsy - observed			
Others or additional procedures: Please Specify			

**MEDICINE INTAKES: PATIENTS CLERKED, MANAGED AND FOLLOWED UP
(MINIMUM OF 15)**

Case No	Week	Name & Date Admitted	Problem Outline	Case Presentation <i>Name & Signature of Reg, MO or Consultant</i>	Follow-Up in Ward <i>Summarise your involvement (No of days cared for, procedures performed or witnessed etc)</i>	Adequacy of Follow-Up <i>Name & Signature of Reg, MO or Consultant at time of discharge</i>
1						
2						
3						

Case No	Week	Name & Date Admitted	Problem Outline	Case Presentation Name & Signature	Follow-Up in Ward	Adequacy of Care Name & Signature
4						
5						
6						
7						
8						

Case No	Week	Name & Date Admitted	Problem Outline	Case Presentation <i>Name & Signature</i>	Follow-Up in Ward	Adequacy of Care <i>Name & Signature</i>
9						
10						
11						
12						
13						

Case No	Week	Name & Date Admitted	Problem Outline	Case Presentation <i>Name & Signature</i>	Follow-Up in Ward	Adequacy of Care <i>Name & Signature</i>
14						
15						
16						
17						
18						

Case No	Week	Name & Date Admitted	Problem Outline	Case Presentation Name & Signature	Follow-Up in Ward	Adequacy of Care Name & Signature
19						
20						
21						
22						
23						

MEDICINE TUTORIALS: CASE PRESENTATIONS

NO	DATE	PATIENT NAME	DIAGNOSIS	TUTOR NAME	SIGNATURE	COMMENT
1						
2						
3						
4						
5						
6						
7						
8						

	DATE	PATIENT NAME	DIAGNOSIS	TUTOR NAME	SIGNATURE	COMMENT
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						

MEDICINE TUTORIALS: ATTENDANCE

NO	DATE	TUTOR NAME	SIGNATURE
1			
3			
5			
7			
9			
11			
13			
15			
17			

NO	DATE	TUTOR NAME	SIGNATURE
2			
4			
6			
8			
10			
12			
14			
16			
18			

NO	DATE	TUTOR NAME	SIGNATURE
19			
21			
23			
25			
27			
29			
31			
33			
35			
37			

NO	DATE	TUTOR NAME	SIGNATURE
20			
22			
24			
26			
28			
30			
32			
34			
36			
38			

MEDICINE INTAKES: ATTENDANCE

NO	DATE	CONSULTANT NAME	SIGNATURE
1			
3			
5			
7			
9			
11			
13			
15			

NO	DATE	CONSULTANT NAME	SIGNATURE
2			
4			
6			
8			
10			
12			
14			
16			

MEDICINE WARD ROUNDS/CLINICS: ATTENDANCE

Tick *WR* for each consultant ward round attended. For clinics, enter name or description of clinic.

NO	DATE	WR	CLINIC (SPECIFY)	NAME	SIGNATURE
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					

NO	DATE	WR	CLINIC (SPECIFY)	NAME	SIGNATURE
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					

HAEMATOLOGY TUTORIALS

Condoned Absence Dates:

SESSIONS	DATE	TUTORS COMMENTS & SIGNATURE
Session 1		
Session 2		
Session 3		
Session 4		
Session 5		
Session 6		

DERMATOLOGY TUTORIALS

WEEK	DATE	CASES	TUTOR & SIGNATURE
1			
3			
5			

WEEK	DATE	CASES	TUTOR & SIGNATURE
2			
4			
6			

ESSENTIAL DRUGS PROGRAMME

SOUTH AFRICA

1998

PRIMARY
HEALTH
CARE

Standard Treatment Guidelines and Essential Drugs List

1998

SOUTH AFRICA

ESSENTIAL DRUGS PROGRAMME

PRIMARY
HEALTH
CARE



Table of Contents

Foreword	i
Introduction	ii
The Essential Drugs Concept	iii
How to use this book	v
Motivation to amend the national essential drugs list/treatment guidelines	vii
Disease notification procedures	ix
A guide to patient education in chronic conditions	xiii
How to use a flow diagram	xvii
Flow diagrams:	
Acute abdominal pain without fever	1
Adult with generalised oedema	2
Chest pain	3
Earache	4
Headache	5
Sexually transmitted diseases - male	6
Sexually transmitted diseases - female	7
Sore throat	8
Vaginal bleeding	9
Chapter 1 - Cardiovascular conditions	10
1.01 Acute pulmonary oedema (See Chapter 19 - Trauma and Emergencies)	10
1.02 Cardiac arrest - cardio-pulmonary resuscitation (See Chapter 19 - Trauma and Emergencies)	10
1.03 Hypertension	10
1.04 Ischaemic heart disease, angina pectoris (See Acute myocardial infarction (AMI), Chapter 19 - Trauma and Emergencies)	14
1.05 Acute myocardial Infarction (AMI) (See Chapter 19 - Trauma and Emergencies)	14
1.06 Acute rheumatic fever	15
1.07 Valvular heart disease	15

Chapter 2 - Central nervous system conditions	17
2.01 Epilepsy	17
2.02 Febrile convulsions (See Chapter 18 - Signs and symptoms)	20
2.03 Meningitis	20
2.03.1 Meningitis, acute	20
2.03.2 Meningitis meningococcal, prophylaxis	21
2.04 Status epilepticus (see Chapter 19 - Trauma and emergencies)	21
Chapter 3 - Dental and oral conditions	22
3.01 Candidiasis, oral (thrush)	22
3.02 Dental abscess and caries	23
3.02.1 Dental abscess	23
3.02.2 Dental caries/toothache	24
3.03 Gingivitis	25
3.03.1 Gingivitis, uncomplicated	25
3.03.2 Acute necrotising ulcerative gingivitis	26
3.04 Herpes stomatitis/cold sore/fever blister	27
3.05 Mouth ulcers	28
3.06 Periodontitis	28
Chapter 4 - Ear, nose and throat	30
4.01 Allergic rhinitis (hay fever)	30
4.02 Tonsillitis	31
4.02.1 Pharyngitis, viral	31
4.02.2 Tonsillitis, bacterial	31
4.03 Otitis externa	32
4.04 Otitis media, acute	34
4.05 Otitis media, chronic suppurative	35
4.06 Sinusitis, acute	36
4.07 Epistaxis (See Chapter 19 - Trauma and Emergencies)	37
Chapter 5 - Endocrine system	38
5.01 Diabetes mellitus	38
5.01.1 Diabetes mellitus type 1	38
5.02 Diabetes mellitus type 2	38
Chapter 6 - Eye conditions	46
6.01 Conjunctivitis	46
6.01.1 Conjunctivitis, allergic	46
6.01.2 Conjunctivitis, bacterial	47
6.01.3 Conjunctivitis, viral and epidemic viral	47
6.02 Conjunctivitis of the newborn (ophthalmia neonatorum)	48
6.03 Eye, chemical burn (See Chapter 19 - Trauma and Emergencies)	49
6.04 Eye injury, foreign body (See Chapter 19 - Trauma and Emergencies) ..	49
6.05 Glaucoma, acute	49
6.06 Trachoma	50

Chapter 7 - Family planning	52
7.01 Contraception, barrier methods	52
7.02 Contraception, vaginal	52
7.03 Contraception, intrauterine contraceptive device (IUCD)	52
7.04 Contraception, hormonal	53
7.04.1 Injectable contraceptives	53
7.04.2 Oral contraceptives	53
7.05 Post-coital contraception	53
Chapter 8 - Gastro-intestinal conditions	54
8.01 Abdominal pain/dyspepsia/heartburn/indigestion	54
8.02 Amoebic dysentery	56
8.03 Anal conditions	56
8.03.1 Anal fissures	56
8.03.2 Haemorrhoids	57
8.04 Appendicitis	57
8.05 Bacillary dysentery (shigellosis)	58
8.05 Cholera	58
8.06 Constipation	59
8.07 Diarrhoea, acute	61
8.07.1 Acute diarrhoea in children	61
8.07.2 Acute diarrhoea without blood in adults	62
8.07.3 Chronic diarrhoea in adults	63
8.08 Giardiasis	63
8.09 Helminthic infestation - excluding tapeworm	64
8.10 Helminthic infestation (tapeworm)	65
8.11 Nausea and vomiting, non-specific	66
8.12 Typhoid fever	68
Chapter 9 - Gynaecology and obstetrics	69
9.01 Abortion	69
9.01.1 Abortion, incomplete/spontaneous	69
9.02 Anaemia in pregnancy	70
9.03 Antepartum haemorrhage	71
9.04 Cracked nipples during breastfeeding	71
9.05 Delivery, normal	72
9.06 Dysmenorrhoea	74
9.07 Ectopic pregnancy	74
9.08 Vaginal bleeding	75
9.08.1 Abnormal vaginal bleeding during fertile years	75
9.08.2 Post-menopausal bleeding	75
9.09 Pregnancy-induced hypertension (PIH)	75
9.10 Vaginal discharge/lower abdominal pain in women (STD Protocols 2 and 4)	77
9.11 Vaginal ulcers (See Chapter 11 - Infections)	79
Chapter 10 - Immunisation	80
10.1 Dosage and administration	80
10.3 Immunisation schedule	84
10.4 Additional vaccines and target groups	85

10.5 Immunisation by injection	85
10.6 The cold chain	86
Chapter 11 - Infections (selected) and related conditions	89
11.01 Amoebic dysentery (See Chapter 8 - Gastrointestinal conditions)	89
11.02 Bacillary dysentery (See Chapter 8 - Gastrointestinal conditions)	89
11.03 Bilharzia	90
11.04 Chickenpox	91
11.05 Cholera (See Chapter 8 - Gastrointestinal conditions)	92
11.06 Giardiasis (See Chapter 8 - Gastrointestinal conditions)	92
11.07 HIV	92
11.08 Infection control: the use of antiseptics and disinfectants	94
11.09 Malaria	95
11.10 Measles	98
11.11 Meningitis (See Chapter 2 - Central Nervous System)	99
11.12 Mumps	100
11.13 Rubella (German measles)	100
11.14 Sexually transmitted diseases (STD)	101
Protocol 1: Urethral discharge/burning micturition in men	102
Protocol 2 and 4: Vaginal discharge in women/lower abdominal pain in women (see Chapter 9 - Gynaecology and Obstetrics)	102
Protocol 3: Genital ulceration in men and women	102
Protocol 5: Inguinal swelling/bubo - no ulcer present in men and women	103
Protocol 6: Balanitis/balanoposthitis in men	103
Protocol 7: Painful scrotal swelling in men	104
Protocol 8: Interpretation of syphilis serology - RPR/VDRL	104
11.14.1 Genital warts	106
11.14.2 Pubic lice	106
11.14.3 Genital scabies	106
11.14.4 Molluscum contagiosum	106
11.14.5 Gonorrhoea neonatorum	107
11.15 Tick-bite fever	107
11.16 Typhoid fever (See Chapter 8 - Gastrointestinal conditions)	107
11.17 Tuberculosis (See Chapter 16 - Respiratory conditions)	107
Chapter 12 - Musculoskeletal conditions	108
12.01 Arthralgia (See Chapter 18 - Signs and Symptoms)	108
12.02 Gout	108
12.02.1 Gout, acute	108
12.02.2 Gout, chronic	109
12.03 Osteoarthritis	110
12.04 Rheumatoid arthritis	110
12.05 Septic arthritis	110
Chapter 13 - Nutritional and blood conditions	111
13.01 Anaemia	111
13.01.1 Anaemia, iron deficiency	112
13.01.2 Megaloblastic/Macrocytic anaemia	113
13.01.3 Folate deficiency (See chapter on pregnancy (section 9.02))	113

13.02	Vitamin deficiencies	113
13.02.1	Vitamin A deficiency	113
13.02.2	Pyridoxine (Vitamin B ₆) deficiency	114
13.02.3	Pellagra (nicotinamide deficiency)	115
13.02.4	Thiamine deficiency (Wernicke's encephalopathy and beriberi)	116
13.03	Failure to thrive (FTT)	116
13.03.1	Protein energy malnutrition (PEM)	117
13.04	Vitamin B deficiencies	118
Chapter 14 - Psychiatric illness		120
14.01	Delirium - acutely confused, aggressive patient (See Chapter 19 - Trauma and emergencies)	120
14.02	Depression	120
14.03	Psychosis, acute	122
Chapter 15 - Renal and urinary tract conditions		126
15.01	Urinary tract infection, uncomplicated (acute uncomplicated cystitis)	126
15.02	Acute pyelonephritis	127
Chapter 16 - Respiratory conditions		128
16.01	Asthma	128
16.01.1	Asthma, chronic	128
16.01.2	Chronic bronchitis and emphysema	132
16.01.3	Acute bronchospasm associated with asthma and chronic obstructive bronchitis	133
16.02	Bronchitis, acute	136
16.03	Common cold and influenza	137
16.04	Cough (See Chapter 18 - Symptoms and signs)	138
16.05	Croup (laryngotracheobronchitis)	138
16.06	Pneumonia	140
16.07	Tuberculosis	142
Chapter 17 - Skin conditions		150
17.01	Acne vulgaris	150
17.02	Bacterial infections of the skin	151
17.02.1	Boil, abscess	151
17.02.2	Impetigo	152
17.03	Cellulitis	153
17.04	Eczema	154
17.04.1	Eczema, atopic	154
17.04.2	Seborrhoeic eczema	155
17.04.3	Acute, moist or weeping eczema	155
17.05	Fungal infections of the skin	156
17.05.1	Athlete's foot - tinea pedis	156
17.05.2	Candidiasis, skin	157
17.05.3	Napkin rash (candida)	158
17.05.4	Ringworm	158
17.06	Parasitic infections of the skin	159
17.06.1	Lice (pediculosis)	159
17.06.2	Scabies	160

Foreword

It is gratifying progress that the revised edition of the standard treatment guidelines and essential drugs list is completed two years after the first publication. This edition is the product of selfless contributions by numerous experts and is a highly commendable job done in updating the treatment guidelines and essential drugs list to ensure acceptability at primary health care level. The product has also enjoyed wider participation by health workers than before, which has been a very important step for them to understand and embrace the processes involved.

A truly national, enabling and facilitating document now exists that is suitable for continuous improvement of practice and promotion of effective prescribing and rational dispensing at primary health care level.

This revised edition has been completed at the time that the first of the treatment guidelines on common conditions at hospital level have also been completed. An important milestone has thus been reached in the implementation of the objectives of the National Drug Policy and Essential Drugs Programme. This second phase in the further development and refinement of the EDL/STGs has seen tremendous progress from a mere series of reactions to current problems, to a positive concept which is embraced worldwide.

The experiences learnt thus far and the outcome of the surveys conducted are indicative of a comprehensive approach needed to tackle the medicine-related problems that still exist which result in non-availability of medicines when needed. This initiative should then translate into an achievement of optimal availability and use of medicines which can only be achieved if a common framework is established, that of the National Drug Policy.

All the stakeholders and contributors are to be congratulated and thanked on this magnificent achievement. It now remains for the health authorities and all health care providers at all levels, to commit themselves in ensuring that the medicines are available, their rational use is promoted by prescribers and consumers, and the culture of cost-effective and efficient management of drug supplies is developed.

Dr Nkosazana C Dlamini-Zuma
Minister of Health

- consider stopping resuscitation attempts and pronouncing death if:
 - further resuscitation is clearly inappropriate clinically, e.g. incurable underlying disease
 - no success after all the above procedures have been carried out after 30 minutes or longer
- consider carrying on for longer especially when:
 - the patient is young
 - hypothermia and drowning
 - assumed electrolyte imbalance

19.06.2 Cardiac arrest - children

Description

The most common underlying cause of cardiac arrest in children is respiratory failure and hypoxia resulting from lung or airway disease or injury:

- croup
- bronchiolitis
- asthma
- pneumonia
- birth asphyxia
- inhalation of foreign body
- pneumothorax

Hypoxia is the most common cause of bradycardia or cardiac arrest in children. Asystole is the most common cardiac arrest rhythm in infancy and childhood, usually preceded by bradycardia. Ventricular fibrillation is unusual in children and it is therefore inappropriate to include a blind precordial thump or DC shocks in the management of cardiac arrest in children. Cardiac arrhythmias are unusual in children, unless due to severe electrolyte abnormalities or drug overdose.

Management objectives

- urgent restoring of effective cardiac output and peripheral perfusion
- adequate oxygenation

Emergency treatment

- diagnose rapidly and mentally note the time of starting
- commence resuscitation immediately
- summon skilled help
- cardiac massage is recommended for immediate treatment
- place the patient on a firm flat surface
- initiate ABCD sequence of CPR
- if possible, get someone to document medication and progress

or

- collect all ampoules used and total them at the end

A airway

- try to wake the patient
- clear vomit or foreign body from the mouth manually
- tilt the head backwards with one hand on the forehead (**do not do this where a neck fracture is suspected**)
- lift the chin forward with the fingers of the other hand
- raise the shoulders to tilt the neck backwards unless a neck fracture is suspected
- insert artificial airway if available
- when the patient is breathing well, lay him/her on the side to protect the airway and support the patient by bending the uppermost arm and leg

! CAUTION !

- no ventilation is possible until the airway is open

- consider the possibility of a foreign body; if suspected, apply Heimlich manoeuvre or modification for size
- Heimlich manoeuvre:
 - **child over 5 years**
 - ▶ make a fist with one hand
 - ▶ place immediately below the child's xiphisternum
 - ▶ grasp the child with the other hand
 - ▶ apply force (1–6 times) in the direction of the upper thoracic spine
 - **child under 5 years**
 - ▶ place the child face-down on one arm of the health worker
 - ▶ deliver 1–4 sharp blows to the lower thoracic back with the hand

! CAUTION !

- do not use blind finger sweeps of the mouth or posterior pharynx: this can impact any obstruction further down the airway

! CAUTION !

- no ventilation is possible until the airway is open

B breathing

- check for breathing
- **no breathing** then apply artificial respiration
 - ▶ mouth-to-mouth
 - or
 - ▶ mouth-to-nose
 - or

- ▶ ambubag and face mask are preferable if available
- ▶ breathe (inflate the chest) at least 15 times/minute (faster in babies)
- ▶ **do not stop unless breathing starts or help arrives**
- continue until spontaneous breathing occurs
- oxygenation with 100% oxygen
- endotracheal intubation is essential - use a tube of approximately the same diameter as the child's little finger or of a size that will just fit into the nostril
- if prolonged ventilation is required, intubation is the best method of securing the airway
- pre-oxygenate well before intubation

! CAUTION !

- cardiac massage is useless unless there is an airway and the lungs are being filled with air

C circulation

- check the heartbeat
 - ▶ carotid in the older child
 - or
 - ▶ femoral
 - or
 - ▶ brachial pulse
- **no pulse**, start cardiac compressions or massage
 - rate of compressions 80–100 beats/minute
- continue with ventilation in between chest compressions
- initiate CPR if there is no pulse or no breathing
- keep patient covered and warm while resuscitating
- ventilate if there is a pulse, but no breathing
- continue until return of the pulse and/or respiration

D drip, doctor, drugs

- put up IV fluid with either 0.9% sodium chloride
- or
- Ringer-Lactate solution
- summon the doctor without stopping CPR

Initial emergency drug treatment

- adrenaline 1:1 000, initially 10 micrograms/kg IV or via endotracheal tube
 - ▶ adrenaline 1:1 000, 1 mL diluted to 10 mL from the drip
 - ▶ **children:** 0.1 mL/kg
 - ▶ following and subsequent doses, a 5–10 fold increase is recommended
 - ▶ repeat every 3 minutes when needed for 3–4 doses
- bradycardia or slow heart rate
 - ▶ hypoxia is the most common cause of bradycardia, so adequate ventilation or oxygenation is usually all that is needed
- atropine IV 0.02 mg/kg to a maximum of 1 mg

- alkalisating agents, e.g. sodium bicarbonate have not been shown to be useful during acute resuscitation
 - ▶ **only** use after clinical consideration of profound acidosis in patients with respiratory or circulatory arrest
- and
 - ▶ after the first dose of adrenaline
- **difficult or impossible IV access** within 2–3 minutes
 - ▶ administer medication down the endotracheal tube
 - ▶ adrenaline dose via this route is 10 times the standard dose
 - ▶ atropine can also be given via this route
- **fluid therapy**
 - ▶ administer a bolus of 0.9% sodium chloride to follow the IV or intraosseous injection of any drug used in resuscitation
 - ▶ especially if the injection is peripheral
 - ▶ 5–20 mL, depending on the size of the child
- **dextrose**
 - ▶ sick children, especially infants, may be hypoglycaemic
 - ▶ look for evidence during resuscitation
 - ▶ treat proven hypoglycaemia with 10% dextrose solution IV, 5 mL/kg
 - ▶ avoid unnecessary or excessive treatment
- **drug administration route**
 - ▶ **IV** via a free-running drip
 - ▶ ensure that excessive volumes of fluid do not run into the patient during the resuscitation
 - ▶ use 60 drop per mL administrations sets for all drips unless hypovolaemia is thought to be responsible for the arrest
 - ▶ **intraosseous route**
 - ▶ resuscitation drugs, fluids and blood can be safely given
 - ▶ drugs rapidly reach the heart
 - ▶ access is safe, simple, rapid
 - ▶ children of all ages and adults
 - ▶ tibial technique, 2–3 cm below the knee

19.07 Delirium with acute confusion and aggression

F03

Description

Delirium is an sudden onset state of confusion in which there is impaired consciousness.

- many possible causes, many outside the central nervous system
- the differential diagnosis includes psychiatric conditions, like schizophrenia and the manic phase of a bipolar disorder
- consider organic or physical illness as a possible cause, which may include:
 - ▶ central nervous system disorders
 - ▶ drug-related problems
 - ▶ typhoid
 - ▶ rabies
 - ▶ metabolic disorders

- clinical features:
 - ▶ restlessness
 - ▶ agitation
 - ▶ aggressiveness
 - ▶ violent behaviour alone occurs in exceptional cases only
- risk factors for delirium include:
 - ▶ extremes of age
 - ▶ pre-existing dementia
 - ▶ cerebrovascular disease
 - ▶ space-occupying brain lesions
 - ▶ substance intoxication and withdrawal
 - ▶ prescription drugs such as anticholinergics and hypnotics
 - ▶ admission to intensive care units
 - ▶ epilepsy
- main clinical features are:
 - ▶ impaired consciousness
 - ▶ confusion
 - ▶ disorientation
- other symptoms may also be present:
 - ▶ restlessness
 - ▶ agitation
 - ▶ hallucinations
 - ▶ autonomic symptoms such as sweating, tachycardia and flushing
- other patients may be hypo-active, with reduced responsiveness to the environment
- a fluctuating course and disturbances of the sleep-wake cycle are characteristic

Management objectives

- stabilise the patient
- treat the underlying cause

Emergency treatment

- non-organic, non-psychotic causes
 - ▶ verbal intervention is the first step
 - ▶ if communication is difficult, restrain and give psychotropic medication
- diazepam IV, 10–20 mg for immediate sedative or hypnotic action
 - ▶ **do not** administer at a rate over 5 mg/minute
 - ▶ monitor for respiratory depression

or

- lorazepam IM 2–4 mg
- if no response

then

- haloperidol IV, 5–10 mg slowly

or

- haloperidol IM 2–5 mg hourly

Referral

- refer to hospital as soon as possible

19.08 Nose bleed (epistaxis)

R04.0

Description

Most bleeding occurs from an area anterior and inferior on the nasal septum (Kiesselbach area). This may be caused by local or systemic diseases or local trauma. Always look for other conditions associated with nose bleeds, especially if recurrent, e.g. hypertension, bleeding tendency.

Management

Acute episode

- most bleeding can be controlled by pinching the nasal wings (alae) together for 5–10 minutes
- if this fails, the bleeding site must be found and the patient must be referred

Referral

- recurrent nose bleeds
 - attempt to stop the present bleed
- refer for determination of cause

19.09 Eye, chemical burn

T26.5 (871 & 930)

Description

Damage to the eye caused by contact with irritating chemical substance, e.g. acids, alkalis.

Management objectives

- remove chemical
- prevent damage
- avoid infection

Emergency treatment

- irrigate liberally with water or 0.9% sodium chloride and repeat several times if severe
- test visual acuity before fluorescein test for corneal injury or breach
- 1% fluorescein instilled in the eyes for diagnosis of local or diffuse damage
- local damage
 - administer antibiotic, cover with eye pad and review after 24 hours
- diffuse damage
 - 1% atropine ophthalmic drops instilled immediately, once only
 - 1% chloramphenicol ophthalmic ointment instilled 3–4 times daily
 - oral analgesic

Referral

- all patients

19.10 Eye injury, foreign body

S05.9 / S05.5 (871 & 930)

Description

A foreign body may be embedded in conjunctiva or cornea or deeper:

- conjunctival or eyelid foreign body may cause corneal abrasion
- disturbance of vision is serious

Management objectives

- relieve pain
- prevent infection
- prevent permanent loss of function

Non-drug treatment

- take proper history
- check visual acuity first, before testing with fluorescein
- stain with fluorescein for corneal foreign body or complication (abrasion)
- check after removal of foreign body

Note

- eye ointment may act as foreign body to abraded eye tissue
- **do not** use an eye pad with
 - ecchymosis
 - lid oedema
 - bleeding
- allow drainage
- fluorescein confirms:
 - an embedded foreign body or rust ring
 - multiple foreign bodies

Emergency treatment

- remove foreign body by washing
- or
- irrigation
- or
- with cotton-tipped stick (cotton bud)
- or
- back of needle (cornea)
 - visual acuity will be abnormal with a corneal foreign body or abrasion
- the nature of the trauma determines the type of injury
- 1% fluorescein drops for diagnosis
- 0.5% tetracaine drops to **remove foreign body only**
- 0.9% sodium chloride or clean water to irrigate the eyes
- 1% chloramphenicol ophthalmic ointment instilled 3–4 times daily
- 1% atropine ophthalmic drops immediately, once only for deep injuries
- review the problem daily

Referral

- hyphaema (blood in the anterior chamber of the eye)
- diffuse corneal damage after applying 1% atropine ophthalmic drops
- scleral and corneal laceration
- lid oedema
- subconjunctival bleeding persisting for more than 24 hours
 - post-traumatic dilatation of the pupil
 - persistent corneal defect or corneal opacity

19.11 Exposure to poisonous substances

T65.8 (963.9)

Note: Poisoning from agricultural stock remedies is notifiable.**Description**

- the rapid and positive identification of the poison is essential:
 - keep a sample or the poison container
 - simple inspection or by assessing its smell or odour **except** in suspected cyanide exposure
- poisoning may also occur by inhalation and skin absorption

Management objectives

- prevent further absorption of the toxic substance
- maintain vital functions
- reverse the effects of the poison

Non-drug treatment

Most cases of poisoning are accidental.

- where there is no definite history, suspect poisoning from the signs and symptoms
- treatment depends on:
 - type of poison
 - method of poisoning
 - time lapsed since poisoning
 - condition of the patient
- prevention depends on parent education and proper child care
- emphasize that drugs and poisons should be stored out of reach of children
- phone the nearest hospital or poison centre for advice

MAJOR POISON INFORMATION CENTRES

Gauteng : 0800 111 990 or
(011) 495-5112

Free State : (051) 447-5353 or
(051) 405-3033

KwaZulu-Natal: 0800 333 444

Western Cape:
 Red Cross: (021) 689-5227
 Tygerberg: (021) 931-6129

Emergency management

- perform resuscitation ABCD (section 19.06.1) if the patient is unconscious
- take a history and identify the nature and route of poisoning
- thoroughly wash any poison off the skin and remove splashed clothes

Note

- health care workers should avoid inhaling, swallowing poison or having skin contact

Ingested poisons

- induce vomiting **except in:**
 - ▶ coma
 - ▶ convulsions
 - ▶ strong acids or alkalis
 - ▶ petroleum products
- syrup of ipecacuanha oral with large volumes of water to drink
 - ▶ children 6–12 months: 15 mL
 - ▶ children 12 months to 12 years: 20 mL
 - ▶ children over 12 years and adults: 25 mL
 - ▶ repeat after 20 minutes if no vomiting has occurred

Gastric lavage is of value within the first hour except where peristalsis is reduced.

- activated charcoal
 - ▶ 50 g activated charcoal provided in a 500 mL bottle
 - ▶ add 400 mL water and shake very well
 - ▶ make sure that all the charcoal has been wetted
 - ▶ dose 5 mL of this mixture per kg of body weight
 - ▶ remove by suction or with purgatives
 - ▶ repeat until a total of 100 g charcoal has been ingested and recovered

Specific antidotes

- oxygen for the management of hypoxia, especially in carbon monoxide poisoning
- atropine for the treatment of organophosphate and carbamate poisoning
 - ▶ **adults:** initial trial dose of atropine IV 1–2 mg
 - ▶ further dose if no adverse effects, 2–4 mg every 10–15 minutes
- naloxone
 - ▶ in the treatment of opioid drug overdose
 - ▶ dose 0.4–2 mg IV at appropriate intervals up to a maximum of 10 mg

! CAUTION !

- if addiction is suspected or evident use the lowest appropriate dose to prevent withdrawal syndrome

- acetylcysteine is the antidote of choice in paracetamol overdose (over 125–250 mg/kg). If transfer to hospital is delayed, the administration of acetylcysteine should be initiated. Most effective if treatment is initiated within 8 hours of ingestion of paracetamol

- diazepam for convulsions
 - ▶ children: rectally 10 mg of the IV solution, repeated after 5–10 minutes if needed
 - ▶ children: IV 0.2 mg/kg slowly over 3 minutes
 - ▶ adults: IV 10–20 mg administered at a rate of 2 mg/minute until seizures stop
- sodium sulphate oral, in a glass of water, single dose as a general purgative
 - ▶ children: 250 mg/kg
 - ▶ adults: 10–20 g

Referral

- all cases of severe poisoning
 - ▶ petroleum and paraffin products
 - ▶ corrosives acids and alkalis
- send the following to hospital with the patient
 - ▶ written information
 - ▶ the container
 - ▶ any vomitus

19.12 Injuries

T14 (840)

Description

- soft tissue injury may take many forms:
 - ▶ pain only
 - ▶ traumatic swelling
 - ▶ bruises (intact skin)
 - ▶ cuts
 - ▶ abrasions
 - ▶ puncture wounds
 - ▶ other open wounds of varying size and severity
- contamination with dirt and soil complicates the outcome of treatment
- human and animal bites can cause extensive injuries and infection (see section 19.04.1)
- fractures must be excluded, even when treatment with rest and ice is instituted
- stop obvious bleeding
- injury to internal organs must be recognised and referred:
 - ▶ including subtle signs for organ rupture
 - ▶ blood in the urine - kidney damage
 - ▶ shock - internal bleeding
- referral must not be delayed by waiting for a diagnosis
- an injury causing a sprain or strain may be overlooked, e.g. sport, exercise, sleep, and the symptoms appear late
- closed injuries and fractures of long bone may be serious and damage blood vessels

Index of diseases and conditions

Abdominal pain/dyspepsia/heartburn/indigestion	54
Abnormal vaginal bleeding during fertile years	75
Abortion	69
Abortion, incomplete/spontaneous	69
Acne vulgaris	150
Acute bronchospasm associated with asthma and chronic obstructive bronchitis	133
Acute diarrhoea in children	61
Acute diarrhoea without blood in adults	62
Acute, moist or weeping eczema	155
Acute myocardial infarction (AMI)	177
Acute necrotising ulcerative gingivitis	26
Acute pulmonary oedema	178
Acute pyelonephritis	127
Acute rheumatic fever	15
Allergic rhinitis (hay fever)	30
Amoebic dysentery	56
Anaemia	111
Anaemia in pregnancy	70
Anaemia, iron deficiency	112
Anal conditions	56
Anal fissures	56
Anaphylactic shock	179
Animal and human bites	180
Antepartum haemorrhage	71
Appendicitis	57
Arthralgia	164
Asthma	128
Asthma, chronic	128
Athlete's foot - tinea pedis	156
Bacillary dysentery (shigellosis)	58
Bacterial infections of the skin	151
Bilharzia	90
Bites and stings	180
Boil, abscess	151
Bronchitis, acute	136
Burns	186
Candidiasis, oral (thrush)	22
Candidiasis, skin	157
Cardiac arrest - adults	188
Cardiac arrest - cardio-pulmonary resuscitation	188
Cardiac arrest - children	190
Cardiovascular conditions	10
Cellulitis	153
Central nervous system conditions	17
Chickenpox	91

Cholera	58
Chronic bronchitis and emphysema	132
Chronic diarrhoea in adults	63
Chronic pain control in advanced or incurable cancer	173
Common cold and influenza	137
Conjunctivitis	46
Conjunctivitis, allergic	46
Conjunctivitis, bacterial	47
Conjunctivitis of the newborn (ophthalmia neonatorum)	48
Conjunctivitis, viral and epidemic viral	47
Constipation	59
Contraception, barrier methods	52
Contraception, hormonal	53
Contraception, intrauterine contraceptive device (IUCD)	52
Contraception, vaginal	52
Cough	165
Cracked nipples during breastfeeding	71
Croup (laryngotracheobronchitis)	138
Delirium with acute confusion and aggression	193
Delivery, normal	72
Dental abscess	23
Dental and oral conditions	22
Dental caries/toothache	24
Depression	120
Diabetes mellitus	38
Diabetes mellitus type 2	38
Diabetes mellitus type 1	38
Diarrhoea, acute	61
Dysmenorrhoea	74
Ear, nose and throat	30
Ectopic pregnancy	74
Eczema	154
Eczema, atopic	154
Endocrine system	38
Epilepsy	17
Exposure to poisonous substances	197
Eye, chemical burn	195
Eye conditions	46
Eye injury, foreign body	196
Failure to thrive (FTT)	116
Family planning	52
Febrile convulsions	166
Fever	167
Fungal infections of the skin	156
Gastro-intestinal conditions	54
Genital scabies	106
Genital warts	106
Giardiasis	63

Gingivitis	25
Gingivitis, uncomplicated	25
Glaucoma, acute	49
Gonorrhoea neonatorum	107
Gout	108
Gout, acute	108
Gout, chronic	109
Gynaecology and obstetrics	69
Haemorrhoids	57
Headache, mild, non-specific	169
Helminthic infestation - excluding tapeworm	64
Helminthic infestation (tapeworm)	65
Herpes stomatitis/cold sore/fever blister	27
HIV	92
Hypertension	10
Hypoglycaemia and hypoglycaemic coma	204
Immunisation	80
Immunisation: additional vaccines and target groups	85
Immunisation by injection	85
Immunisation: dosage and administration	80
Immunisation schedule	84
Impetigo	152
Infection control: the use of antiseptics and disinfectants	94
Infections (selected) and related conditions	89
Injectable contraceptives	53
Injuries	199
Insect bites and stings	183
Insomnia	170
Itching (pruritus)	171
Jaundice	175
Lice (pediculosis)	159
Malaria	95
Measles	98
Megaloblastic/Macrocytic anaemia	113
Meningitis	20
Meningitis, acute	20
Meningitis meningococcal, prophylaxis	21
Molluscum contagiosum	106
Mouth ulcers	28
Mumps	100
Musculoskeletal conditions	108
Napkin rash, non-fungal	161
Napkin rash (candida)	158
Nausea and vomiting, non-specific	66
Nose bleed (epistaxis)	195
Nutritional and blood conditions	111
Oral contraceptives	53
Osteoarthritis	110

Otitis externa	32
Otitis media, acute	34
Otitis media, chronic suppurative	35
Pain control	172
Parasitic infections of the skin	159
Pellagra (nicotinamide deficiency)	115
Periodontitis	28
Pharyngitis, viral	31
Pneumonia	140
Post-coital contraception	53
Post-menopausal bleeding	75
Pregnancy-induced hypertension (PIH)	75
Protein energy malnutrition (PEM)	117
Psychiatric illness	120
Psychosis, acute	122
Pubic lice	106
Pyridoxine (Vitamin B ₆) deficiency	114
Renal and urinary tract conditions	126
Respiratory conditions	128
Rheumatoid arthritis	110
Ringworm	158
Rubella (German measles)	100
Sandworm	162
Scabies	160
Seborrhoeic eczema	155
Septic arthritis	110
Sexually transmitted diseases (STD)	101
Shock	201
Signs and symptoms	164
Sinusitis, acute	36
Skin conditions	150
Snakebite	184
Sprains and strains	202
Status epilepticus	203
STD Protocol 1: Urethral discharge/burning micturition in men	102
STD Protocol 3: Genital ulceration in men and women	102
STD Protocol 5: Inguinal swelling/bubo - no ulcer present in men and women	103
STD Protocol 6: Balanitis/balanoposthitis in men	103
STD Protocol 7: Painful scrotal swelling in men	104
STD Protocol 8: Interpretation of syphilis serology - RPR/VDRL	104
The cold chain	86
Thiamine deficiency (Wernicke's encephalopathy and beriberi)	116
Tick-bite fever	107
Tonsillitis	31
Tonsillitis, bacterial	31
Trachoma	50
Trauma and emergencies	176
Tuberculosis	142

Typhoid fever	68
Urinary tract infection, uncomplicated (acute uncomplicated cystitis)	126
Urticaria	162
Vaginal bleeding	75
Vaginal discharge/lower abdominal pain in women (STD Protocols 2 and 4)	77
Valvular heart disease	15
Vitamin A deficiency	113
Vitamin B deficiencies	118
Vitamin deficiencies	113

Index of drugs

acetazolamide	49
2% acetic acid in alcohol	34
1% acetic acid in 0.9% sodium chloride	36
acetylcysteine	199
activated charcoal	199
adrenaline	139, 180, 189, 193
aluminium hydroxide/magnesium trisilicate	55
aminophyllin	135
amitriptyline	121, 122
amoxicillin	23, 26, 35, 36, 58, 99, 126, 136, 140, 142, 152, 182
anti-D immunoglobulin	70, 73
aqueous cream	154
aspirin, soluble	177
atenolol	13
1% atropine	196, 197
atropine	189, 193, 199
BCG	81, 85, 86
beclomethasone	131, 135
benzathine penicillin	15, 32, 102, 103, 105, 153
6% benzoic acid and 3% salicylic acid	157, 158
5% benzoyl peroxide	151
25% benzyl benzoate	106, 160, 161
benzylpenicillin	20, 21, 140, 142
bismuth subgallate compound	57
calamine lotion	91, 163, 171, 183
carbamazepine	19
ceftriaxone	20
1% chloramphenicol	47, 49, 73, 184, 196, 197
chloramphenicol	20, 21, 99
0.05% chlorhexidine	95, 181, 184, 187
0.2% chlorhexidine digluconate	25, 27-29
chloroquine	98
chlorpheniramine	30, 47, 91, 156, 163, 171, 183, 184
chlorpromazine	123
ciprofloxacin	78, 79, 102, 104
clotrimazole	78
codeine phosphate	174
colchicine	109
5% dextrose	97, 134
5% dextrose in 0.9% sodium chloride	58, 59, 63
5% dextrose in water	73
10% dextrose	193, 206
50% dextrose	206
diazepam	21, 167, 195, 199, 204
dihydralazine	77

doxycycline	50, 59, 78, 102-105, 107, 136, 151
DPT	81, 85-87
DT	81, 85-87
elemental iron	112, 117
emulsifying ointment	72, 155
erythromycin	102, 103, 105
erythromycin estolate	16, 24, 26, 32, 34, 50, 99, 136, 142, 152, 156, 182
erythromycin stearate	16, 24, 26, 32, 34, 50, 78, 99, 136, 140, 142, 152, 153, 156, 182
ethambutol	144, 148
ethosuzimide	18
ethyl chloride	162
ferrous sulphate	70, 71, 75, 112
flucloxacillin	34, 151, 153, 156
1% fluorescein	196, 197
fluoxetine	122
fluphenazine decanoate	124
folic acid	70, 71
furosemide	178
0.5% gentian violet	22, 95
glibenclamide	41-43
glyceryl trinitrate	177, 178
griseofulvin	159
half-strength Darrows solution with 5% dextrose	58, 59, 77, 180
haloperidol	123, 124, 195
HepB	82, 85, 86
Hib	82, 85, 86
human tetanus immunoglobulin	182, 185, 187, 201
hydrochlorothiazide	12 - 14
1% hydrocortisone	154, 155
hydrocortisone sodium succinate	134, 139, 180
hypochlorite	94
ibuprofen	74, 75, 108, 172, 174, 203
insulin	42
biphasic insulin	43
medium-acting insulin	43
ipratropium bromide	131, 134
isoniazid	145
levonorgestrel (as progestogen) 0.15 mg and ethinyl oestradiol (as oestrogen) 0.03 mg	53
levonorgestrel (as progestogen) and ethinyl oestradiol (as oestrogen)	53
levonorgestrel 0.03 mg	53
1% lidocaine	73
2% lidocaine	27, 183, 189
liquid paraffin	57
lorazepam	124, 195
magnesium sulphate	73, 77
measles vaccine	83, 86
mebendazole	64



metformin	40-42
methyldopa	13, 76
methysalicylate	165
metoclopramide	175
metronidazole	24, 26, 56, 63, 78, 79
2% miconazole	23, 155, 157, 158
monosulfiram	160, 161
morphine	172, 174, 177, 178
naloxone	199
niclosamide	66
nicotinamide	115
nifedipine	14, 179
norethisterone enanthate	53, 144
norgestrel (as progestogen) 0.5 mg and ethinyl oestradiol (as oestrogen) 0.05 mg	53
nystatin	23, 103, 157, 158
OPV	82, 85, 86
oral rehydration solution	58, 59, 61-63, 67, 68
orphenadrine	124
0.025% oxymetazoline	47, 48
oxymetazoline	37
oxytocin	70
paracetamol	24, 25, 27, 28, 32, 35, 37, 91, 99-101, 107, 137, 139, 140, 142, 165, 167, 168, 170, 172, 174, 183, 187, 199, 201, 203
perindopril	13, 14
1% permethrin	106, 160
5% permethrin	161
pethidine	73, 173
phenobarbital	18
phenoxymethylpenicillin	16, 32
phenytoin	18, 19, 204
1% pilocarpine	49
polyvalent antiserum (snake)	185
5% polyvidone iodine	95, 187
10% polyvidone iodine	93, 95, 181
polyvidone iodine	152
praziquantel	90
prednisone	131, 133-135, 139
proguanil	98
promethazine	180
pyridoxine	115, 144
quinine	97
quinine sulphate	96
rabies immunoglobulin	181
rabies vaccine	182
reserpine	12, 13
retinol (vitamin A)	114, 117, 118

RH	144, 146-149
RHZ	148, 149
RHZE	146-148
rifampicin	21, 144, 145
Ringer-Lactate	61, 179, 187, 189, 192
salbutamol	131, 134, 135
selenium sulphide	155
sennosides A and B	60, 175
0.9% sodium chloride	37, 44, 77, 134, 137, 179, 180, 186, 187, 189, 193, 196, 197
sodium sulphate	66, 199
sorbitol	175
spectinomycin	78
spermicidal jelly	52
streptomycin	144, 147, 148
sulfadoxine-pyrimethamine	96, 97
syrup of ipecacuanha	199
0.5% tetracaine	184, 197
1% tetracaine	57
tetracycline	50
theophylline	132, 133, 135
thiamine	116
tincture of iodine	106
tolbutamide	41 - 43
trimethoprim/sulfamethoxazole	35, 36, 59, 126
TT	83, 85-87, 182, 185, 187, 201
valproic acid	18, 19
vitamin B complex	119
vitamin K	73
zinc oxide	152, 162
zuclopenthixol acetate	124

INFORMED CONSENT FORM

This research will be undertaken in fulfillment of the requirements of the degree by full dissertation, Doctorate of Education, University of KwaZulu Natal.

Title of Research : Experiences of clinical practice in a problem based learning medical curriculum and subsequent clinical environment.

Name of Researcher : Ms Saras Reddy

Contact details of Researcher

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Email : reddys15@ukzn.ac.za

Name of Supervisor : Dr Sioux McKenna

Contact details of Supervisor : 031 2601388

Email : mckenna@ukzn.ac.za

Contact details of independent administrator

Name : Ms Bryteeny Moodley

Telephone : 031 2604611 (work)

0825933463 (cell)

Email : moodleyb2@ukzn.ac.za

Thank you for agreeing to participate in this study. This form outlines the purpose of the study and provides a description of your involvement and rights as a participant.

The purpose of the study: the study traces the experiences of clinical practice of final year medical students, interns and community service officers through a problem-based learning medical curriculum and their subsequent clinical environments. It is the intention of the research, through the analysis of the lived experiences of the data sources to see if the PBL medical curriculum is experienced as preparing its students and graduates for the clinical environments of internship and community service.

The method that will be used to collect the data:

In-depth interviews will be conducted on a one on one basis with you and the researcher. The researcher will set up an appointment with you at your convenience. The interview will be an open one and you will be permitted to think aloud, to be doubtful and if necessary to pause or stop at any time.

The benefits of the study

The study will inform the medical school of the strengths and gaps of the clinical aspects of the medical curriculum as experienced by you. Your experiences will also inform the HPCSA and the Department of Health on your experiences of clinical practice within the South African context.

The results of the study

The results of the study will be presented in the form of a thesis. Your name and details will be regarded as strictly confidential. No person other than the researcher will be aware of your identity. Any information or direct quotation in the thesis (or any other publication arising there from) will not be presented in a way that it could be attributed to you.

The researcher guarantees that the following conditions will be met:

- 1) Your real name will not be used at any point of data collection, or in the thesis, instead, you will be given a pseudonym that will be used in all verbal and written records and reports.
- 2) If you grant permission for audio taping, no audio tapes will be used for any purpose other than to do this study. The tapes will be kept in a safe until the data has been analyzed and written up.
- 3) Your participation in this research is voluntary, you have the right to withdraw at any point of the study, for any reason, and without any prejudice, and the information collected, records and written reports will be turned over to you.
- 4) You will receive a copy of the transcript before it is handed in, so that you have the opportunity to suggest changes to the researcher, if necessary.

Do you grant permission to be quoted directly?

Yes

No

Do you grant permission to be audio-taped?

Yes

No

I agree to all the terms as mentioned above.

Participant's signature

Date

I agree to all the terms as mentioned above.

Researcher's signature

Date

Annexure L: HSPCA Regulations relating to the registration and training of
Interns in Medicine

GOVERNMENT NOTICE

DEPARTMENT OF HEALTH

NO. R.

.....2002

HEALTH PROFESSIONS COUNCIL OF SOUTH AFRICA

REGULATIONS RELATING TO THE REGISTRATION AND TRAINING OF INTERNS IN MEDICINE

The Minister of Health has, in terms of section 61(1)(e) of the Health Professions Act, 1974 (Act No. 56 of 1974), in consultation with the Health Professions Council of South Africa, made the regulations in the Schedule.

SCHEDULE

Definitions

1. In these regulations any expression to which a meaning has been assigned in the Act, shall bear such meaning and unless the context otherwise indicates -

“**board**” means the Medical and Dental Professions Board established by Government Notice No. R.75 of 16 January 1998;

“**accredited facility**” means a hospital, clinic or a health care centre which has been accredited by the board for the purpose of internship training;

“**the Act**” means the Health Professions Act, 1974 (Act No. 56 of 1974).

Registration as an intern in medicine

2. Any person who holds a qualification prescribed in the regulations made in terms of section 24 of the Act or who holds a qualification accepted by the board in terms of section 25 of the Act shall, after or in connection with obtaining such a qualification and before he or she is entitled to registration as a medical practitioner in any category of such registration, undertake training to the satisfaction of the board as an intern in medicine for a period and in the manner described in regulation 5, unless the board exempted him or her partially or in full from this

requirement on submission of documentary evidence to the satisfaction of the board of internship or equivalent training undergone or experience obtained outside South Africa.

3. The register kept in terms of section 18 of the Act shall reflect all such information as the board may require.
4. A person referred to in regulation 2 shall -
 - (a) submit his or her application to the board in terms of section 17 of the Act for registration as an intern in medicine on an application form supplied by the board and duly completed;
 - (b) submit proof that he or she holds a qualification prescribed in the Regulations relating to the Registration of Persons as General Practitioners and Family Physicians in Medicine made in terms of section 24 of the Act;
 - (c) submit proof that he or she holds a qualification accepted by the board in terms of section 25 of the Act and has passed an examination or other assessment determined by the board;
 - (d) submit the name of the accredited facility to which he or she was allocated by the relevant health authority to undergo training as an intern and shall notify the board in writing in advance if he or she intends to change from that facility to another facility; and
 - (e) pay the prescribed fee.

Conditions of internship training

5. The training to be undertaken by an intern shall be in accordance with the following:
 - (1) Internship training commencing before **1 July 2004** shall be of not less than twelve months' duration and, where it is broken or interrupted, it shall consist of periods which, when added together, are not less than twelve months in total, including vacation leave not exceeding one month's duration, and sick leave not exceeding one month's duration and shall comply with criteria laid down by the board from time to time.

- (2) Internship training commencing after **30 June 2004** shall be of not less than twenty four months' duration and, where it is broken or interrupted, it shall consist of periods which, when added together, are not less than twenty four months in total, including vacation leave not exceeding one month's duration per annum and sick leave not exceeding two months' duration and shall comply with criteria laid down by the board from time to time.
- (3) No such break or interruption, excluding leave referred to in subregulation (1) or (2), as the case may be, shall exceed a period of one year in order for the period of training prior to such break or interruption to be recognised as part of completed internship training.
- (4) The period of twelve months of internship training referred to in subregulation (1) shall be completed within a period of two years from the date of having been registered in terms of section 17 of the Act as an intern in medicine.
- (5) The period of twenty four months of internship training referred to in subregulation (2) shall be completed within a period of three years from the date of having been registered in terms of section 17 of the Act as an intern in medicine.
- (6) If an intern does not complete his or her internship training within a period of two or three years, as the case may be, his or her registration in terms of section 18 of the Act shall be cancelled unless he or she provides the board with satisfactory reasons as to why his or her registration should not be cancelled.
- (7)
 - (a) The training shall be undertaken by an intern in a facility accredited by the board.
 - (b) If a facility referred to in paragraph (a) is not available, the board may, at its discretion, accept alternative training which in the board's opinion is equivalent to training in a facility accredited by the board.
 - (c) When accrediting a facility or alternative training, the board may stipulate that only a portion of an intern's training shall be undertaken thereat and the remainder shall be undertaken at another accredited facility.
 - (d) If internship training at an accredited facility is regarded by the board for any reason to be inadequate or unsatisfactorily, the board may withdraw its

accreditation thereof, in which case the board shall inform any interns at the facility accordingly in writing and request such interns to undertake internship training at another accredited facility for the remaining period.

6. Interns in medicine shall be subject to all the rules of professional conduct prescribed by the board for medical practitioners.
7. (a) Upon completion of internship training, an intern shall submit a duty certificate to the satisfaction of the board to certify that he or she has satisfactorily undertaken internship training as required by the board and his or her doing so shall be a precondition for his or her registration as a medical practitioner to perform community service as prescribed in terms of section 24A of the Act.

(b) The duty certificate referred to in paragraph (a) shall be issued by such officials of an accredited facility where an intern successfully undertook internship training, as the board may require.

Repeal

8. The regulations published under Government Notice Nos. R.2271 of 3 December 1976 and R.2272 of 3 December 1976, are hereby repealed.

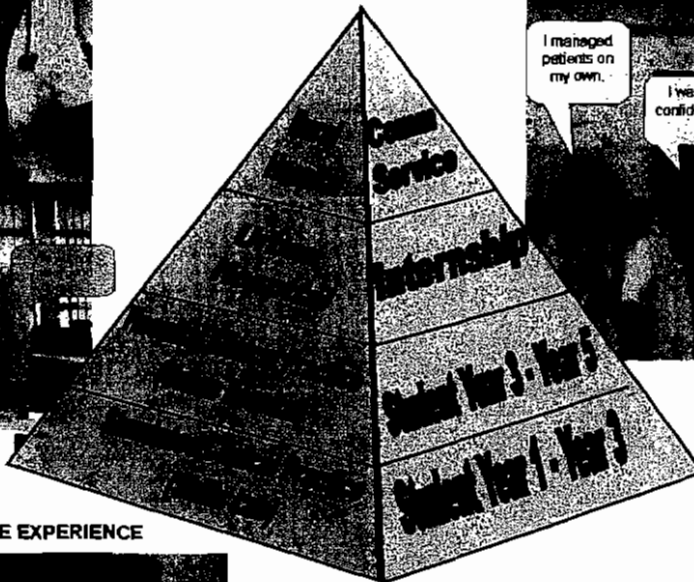
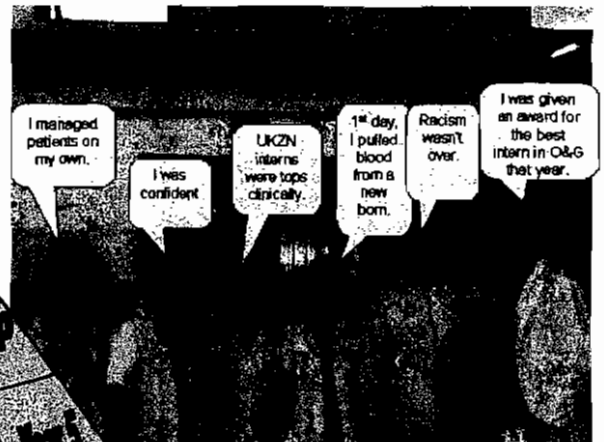
MINISTER OF HEALTH

DATE:

STUDENT EXPERIENCE



INTERNSHIP EXPERIENCE



COMMUNITY SERVICE EXPERIENCE



Limitations and Conclusion

- Nature of themes that have emerged from outcome space: power and authority, marginalisation, alienation - researcher questions appropriateness of phenomenography.
- Shift in Epistemology into critical theory & professional learning theory
- ? Critical Phenomenography (Saras Reddy)

SARAS REDDY: PhD STUDENT

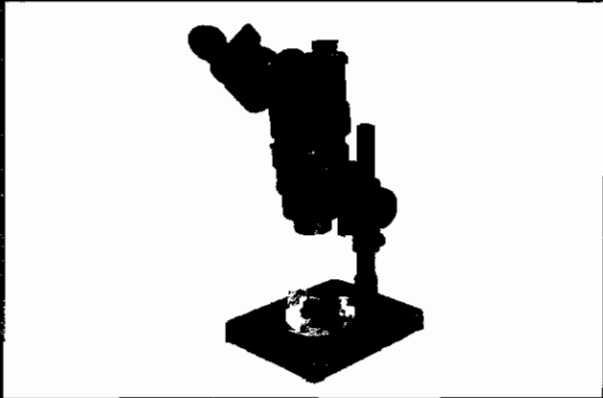
PROF. S. MCKENNA: SUPERVISOR

TITLE: FROM GUINEA PIGS TO PROFESSIONAL PRACTITIONERS

FOCUS OF STUDY

Research in this study is framed by the clinical aspects of a problem that is a common experience of a group of participants. However, this problem is also framed by the social environment of the participants. A community service was conducted.

PHENOMENOGRAPHIC ANALYTICAL LENS



PHENOMENOGRAPHIC METHODOLOGY

- Phenomenography was used to describe and interpret the qualitative ways in which the participants experience, understand and conceptualize the given situation.
- Purposive sampling of 21 participants.
- Individual interviews.
- Phenomenographic analysis.

CRITICAL DISCOURSE ANALYSIS (CDA)

- CDA was used to explore the rhetorical strategies used by participants to make sense of their social situation. The critical discourse analysis was used to explore the participants' experience of the problem and their social environment.
- Discourse analysis was used to explore the participants' experience of the problem.
- CDA was used to explore the social power, knowledge, and identity of the participants.
- CDA was used to explore the participants' experience of the problem and their social environment.
- CDA was used to explore the participants' experience of the problem and their social environment.
- CDA was used to explore the participants' experience of the problem and their social environment.

CDA ANALYTICAL LENS



PHENOMENOGRAPHIC OUTCOME SPACE

CATEGORY

WAYS OF EXPERIENCING

1.
2.
3.
4.
5.
6.
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8.
9.
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19.
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21.

CATEGORY

RELATIONSHIP WITH SOCIAL ENVIRONMENTAL FACTORS

1.
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21.

CONCLUSIONS

- The study has shown that the way in which participants experience and problematize their social situation is shaped by their social environment and their personal experience of the phenomenon.
- Participants' ways of experiencing the problem are used to explore and identify the different ways of experiencing the problem and the social environment.
- The study has shown that the way in which participants experience and problematize their social situation is shaped by their social environment and their personal experience of the phenomenon.

TAKE HOME MESSAGE

The study has shown that the way in which participants experience and problematize their social situation is shaped by their social environment and their personal experience of the phenomenon.

- CONTEXTUALITY: The study has shown that the way in which participants experience and problematize their social situation is shaped by their social environment and their personal experience of the phenomenon.
- METHODOLOGY: The study has shown that the way in which participants experience and problematize their social situation is shaped by their social environment and their personal experience of the phenomenon.
- THEORETICAL SIGNIFICANCE: The study has shown that the way in which participants experience and problematize their social situation is shaped by their social environment and their personal experience of the phenomenon.

HOW ASPECTS OF THE LENS

Annexure O: Letter to the Dean of NRMSM

108 Harinager Drive
Shallcross
4092
15th September 2008

**The Dean
Professor W Sturm
Nelson R Mandela School of Medicine
University of KwaZulu-Natal**

Dear Sir

RE: Authorisation to conduct in-depth interviews of final-year medical students

My PhD proposal entitled "Experiences of clinical practice in a problem-based learning medical curriculum and subsequent clinical environments" has been accepted by the Higher Degrees Committee of the Faculty of Education, University of KwaZulu-Natal. I hereby request authorization to interview final-year medical students who form part of the sample of my study.

The study will trace the experiences of clinical practice of final-year medical students, interns and community service officers through a problem-based learning medical curriculum and their subsequent clinical environments. It is the intention of the research, through the analysis of the lived experiences of the data sources to see if the PBL medical curriculum is experienced as preparing its students and graduates for the clinical environments of internship and community service.

A phenomenographic approach that is aimed at the mapping of the qualitatively different ways in which the students and graduates experience, conceptualize, perceive and understand the clinical aspects of the PBL medical curriculum and their subsequent clinical environments will be used. I require your authorization to conduct in-depth interviews with final-year medical students whom I will invite via email and thereafter randomly select. Participation by the students will be entirely voluntary. Informed consent letters will be issued to the participants and anonymity and confidentiality will be guaranteed. All the relevant ethical considerations will be followed according to the University of KwaZulu-Natal's ethical clearance procedures and I will not undertake any interviews until such time as I have been granted ethical clearance by the University to do so.

Your assistance and authorization in this regard will be highly appreciated in order for me to pursue my PhD study. You are welcome to contact myself or my supervisor, Dr Sioux McKenna, by email mckenna@ukzn.ac.za or by phone 031-2601674 should you have any questions about my proposed research.

Yours faithfully

Saras Reddy
(Student No: 200277857)

I _____ hereby grant permission for the researcher to conduct interviews with the final year medical students.

Signature

Date

108 Harinager Drive
Shallcross
4092
15th September 2008

**The Medical Manager
Dr B Hardy
Murchison Hospital**

Dear Sir

**RE: Authorisation to conduct in-depth interviews of Community Service Officers
(Graduates of the Nelson R Mandela School of Medicine)**

I am a doctoral student registered with the Faculty of Education at the University of KwaZulu-Natal. The proposal for my PhD entitled "Experiences of clinical practice in a problem-based learning medical curriculum and subsequent clinical environments" has been accepted by the University. I am now in the process of obtaining the ethical clearance for the study. I therefore require your authorization to conduct interviews with the interns from your hospital. I would only be interviewing interns who are graduates from UKZN.

The study traces the experiences of clinical practice of final-year UKZN medical students, interns and community service officers through a problem-based learning medical curriculum and their subsequent clinical environments. It is the intention of the research, through the analysis of the lived experiences of the data sources to see if the PBL medical curriculum is experienced as preparing its students and graduates for the clinical environments of internship and community service.

A phenomenographic approach that is aimed at the mapping of the qualitatively different ways in which the students and graduates experience, conceptualize perceive and understand the clinical aspects of the PBL medical curriculum and their subsequent clinical environments will be used. The sample for the study will consist of students and graduates of the PBL medical curriculum from the Nelson R Mandela School of Medicine. Add in from letter to dean the bit about it being entirely voluntary etc. All the appropriate ethical considerations and procedures will be followed.

I hereby appeal to you to please authorize me to conduct interviews with the community service officers that are presently working at Murchison Hospital. Once authorization has been granted, I will negotiate times and venues for the interviews with the community service officers so that I do not impose on their work schedule. Your kind assistance in this regard will be highly appreciated. You are welcome to contact myself or my supervisor, Dr Sioux McKenna, by email mckenna@ukzn.ac.za or by phone 031-2601674 should you have any questions about my proposed research.

Yours faithfully

Saras Reddy - Student No: 200277857

Cell: 0828268808

Work: 031-2604611

Email: reddys15@ukzn.ac.za

I _____ hereby grant permission for the researcher to conduct interviews with the stipulated community service officers.

Signature

Date

SYLLABUSES

All syllabus requirements are approved and directed by the Board of the Faculty of Health Sciences.

MBCbB New Curriculum**Notes**

1. The name of each module is followed by a computer code of 7 symbols. The first letter represents the campus at which the module is offered while the next 2 symbols indicate the School responsible for the module. The 4th symbol is a number indicating the module number (1, 2, 3, 4, 5 or 6) and the 5th symbol, a number that indicates the level of the course; first year (1), second year (2) etc. The 6th and 7th symbols are an abbreviation of the title of the module: e.g. MUM63RE indicates a module offered at the Medical School campus in Umbilo Road (M), that the School of Undergraduate Medical Education (SUME) is responsible for, and that is the 6th module (6) of the third year (3) and the theme of which is Reproductive Health (RE).
2. Modules in 5th year are all designated in a similar way except that the 4th symbol does not imply any temporal sequence, e.g. MUM45PA indicates a year 5 module (5) in Paediatrics. Thus, the disciplines in year 5 will be Family Medicine (15FM); Medicine (25ME); Obstetrics and Gynaecology (35OG); Paediatrics (45PA); Psychiatry (55PS) and Surgery (65SU).
3. A one-week Enrichment Module is offered in year 1. This module covers material selected by the student or suggested by the School of Undergraduate Medical Education. Satisfactory completion of the Enrichment Module will contribute to the Duly Performed certificate. Further Enrichment material will be covered each week in Modules 3-6.
4. There are three Elective Modules in the 5-year medical programme. These occur in the 2nd trimester (2), of years 2 and 3 (year level 2, 3) and in the 3rd trimester (3) of year 4 (year level 4), and have the symbol EL, e.g. MUM22EL, MUM23EL

and MUM34EL. Satisfactory completion of Elective Modules will contribute to the Duly Performed certificate. The exact time in a particular year at which the Elective is offered may vary.

Module 1.1

INTRODUCTION / DIABETES MELLITUS MUM11DM

The aim is to introduce the 1st year medical students to the process of self-directed, student-centred learning and a holistic approach to health problems, using Diabetes Mellitus as a health problem.

Orientation. Process of self-directed learning. Communication skills. Computer skills. Student responsibilities - holistic approaches to health care. Skills and concept course. Primary health care concepts. Diabetes: Anatomy and Physiology of pancreas. Aetiology. Common clinical presentation in adults and children. Complications: visual, peripheral nerves and vascular. Management. Family implications. Epidemiology.

Module 1.2

NUTRITION MUM21NU

The aim is to understand types of foods, balanced diet, metabolic processes and problems related to nutrition.

Normal requirements. Cellular metabolism. Protein malnutrition. Vitamin deficiency. Nutritional anaemia. Physiology of blood. Obesity. Rickets. Osteomalacia.

Module 1.3

GROWTH & DEVELOPMENT MUM31GD

The aim is to understand the process of growth, from new-born to old age from a bio-psycho-social perspective.

Newborn - appropriate for gestation, small for dates, large for dates. Development of central nervous system. Embryology, Anatomy and Physiology. Histology - basic genetics. Development: normal and deviation in early childhood, later childhood. Adolescence - psycho-social problems. Substance abuse. Acne - Histology of skin. Old age - related ethical issues. Management of severe physical and mental handicap in children.

Module 1.4**INFECTION / INFLAMMATION****MUM41IN**

The aim is to understand aspects of infection, and the inflammatory process, using upper respiratory infection and pulmonary tuberculosis as a vehicle.

Patho-physiology of infection, inflammation. Upper respiratory infection - otitis media and externa. Tonsillitis, rhinitis, influenza, asthma and allergy. Clinical presentation and management. Basic epidemiology and biostatistics. Preventions.

Tuberculosis - biological and socio-economic aspects. Investigations and management. Problems of compliance, drug resistance and contact tracing. Prevention. Epidemiology of tuberculosis. Tuberculosis control programme.

Module 1.5**REPRODUCTIVE HEALTH****MUM51RH**

The aim is to introduce students to sexology - the consequences and the management of sexual behaviour. To understand diseases related to sexual behaviour, their diagnosis, management and treatment.

Anatomy of reproductive tract - revise. Fertility-regulation. Normal pregnancy and delivery. Antenatal care. Consequences of sexual behaviour. Sexually transmitted diseases, abortions, sexual abuse and rape. Obstetric emergencies and management.

Module 1.6**TRAUMA & EMERGENCY CARE****MUM61TE**

The aim is to explore normal homeostasis in terms of fluid and electrolyte balance and then to understand trauma and the body's response in terms of homeostasis and neurological response to pain.

Normal fluid and electrolyte balance. Blood circulation - Physiology. Measurements. Trauma - mechanisms, body responses, healing. Assessment of trauma patients. Management of general airways, shock, blood transfusion and anaphylaxis. Pharmacological management of pain. Minor wounds. Cardiopulmonary resuscitation 1.

Module 2.1

CARDIO RESPIRATORY DYSFUNCTION MUM12CV

The aim is to introduce students to the anatomy and physiology of the cardiovascular system and the major disorders arising from its dysfunction. The clinical manifestation and management of such disorders will also be studied.

Anatomy of cardiovascular system and physiology of circulation.
 Cardiovascular system - structural heart disease - myocardial infarction.
 Hypertension: aetiology, clinical manifestations and management.
 Prevention: lifestyle and cardiovascular disorders. Respiratory conditions. Chronic obstructive airways disease (COAD). Health promotion. Paediatric cardiology. Cardiopulmonary resuscitation - 2. journal articles.

Module 2.2

URO/GENITAL DISORDERS MUM22UG

The aim is to address the common medical and surgical urinary tract conditions in adults and children, their aetiology, clinical manifestations and management.

Anatomy and Physiology of the renal tract. Congenital malformations. Urinary tract infection. Acute and chronic causes of renal failure. Management. Patho-physiology of renal conditions. Renal obstructive uropathy. Disorders of the prostate, impotence, enureses. Urinary incontinence. Uro-genital trauma and circumcision.

Module 2.3

DIGESTION & ABSORPTION MUM32DA

The aim is to understand the anatomy and patho-physiology of the upper gastro-intestinal tract. The clinical manifestations of abnormalities, both structural and functional in all age groups and their management.

Upper gastro-intestinal tract - oral cavity, salivary glands, stomach, oesophagus and small intestine. Physiology and Anatomy. Disturbances of upper gastro-intestinal tract. Diarrhoea, enteral and paenteral nutrition. Eating disorders such as Bulimia, Anorexia Nervosa.

Module 2.4

“PEOPLE AND BUGS” MUM42PB

The aim is to understand clinical presentations, management and prevention of common infections/infestations from neonates to adult.

Common childhood and adult infections and infestation such as viral, bacterial, fungal and parasitic. Infectious disease control. Prevention - immunisation, lifestyles, environment and socio/economic conditions. Skin infection: Bacterial including leprosy. Viral - warts, herpes, molluscum contagiosum. Parasite and fungal.

Module 2.5

CENTRAL FUNCTION

MUM52CF

The aim is to understand the Anatomy and Physiology of the central nervous system, the clinical manifestations associated with dysfunction of the central nervous system resulting in disabilities, and those disabilities associated with disorders of the special senses of hearing and vision. Central nervous system: Anatomy and Physiology with emphasis on- cerebral blood flow, cerebrospinal fluid, cranial nerves, cerebellum and brain stem. Central nervous system dysfunction from childhood to adulthood - infective, vascular and convulsions. Congenital and acquired dysfunction related to vision and hearing. Aetiology, diagnosis and management of cerebral palsy.

Module 2.6

BODY IN MOTION I

MUM62BM

The aim is to understand the Anatomy and Physiology of the locomotor system and the clinical manifestations of the dysfunction of the system using sports medicine as a vehicle.

Anatomy and Physiology of muscles, bones and joints. Sports medicine. Orthopaedics - common disorders including fractures.

Module 3.1

BODY IN MOTION II

MUM13BO

The aim is to gain knowledge of the anatomy and physiology of limbs and spine with emphasis on peripheral nerves and vascular systems, and the common disorders associated with it, their clinical manifestations and management.

Anatomical disorders of peripheral nerves and muscles including myopathies. Anatomy of spinal cord. Physiology of nerve conduction. Neck and lower back - clinical conditions, presentation and management. Painful joints - abnormal gait. Regional and local anaesthetic.

Module 3.2

HORMONAL ORCHESTRA

MUM23HO

The aim is to understand the normal structure and functioning of the endocrine system and disorders and the clinical and metabolic manifestation thereof. Attention will be given to psycho-social impact of disorders and their management.

Endocrine system - thyroid, pituitary, adrenal, pancreas, parathyroid, gonads. Anatomy, Physiology, disorders and management including in-born errors. Psycho-social aspects of the disorders. Physiology of puberty.

Module 3.3

CELL DYSFUNCTION

MUM33CD

- A. The aim will be to understand the features of non-neoplastic growth disturbances and neoplasia. To explore clinico-pathological features, principles of management and ethical issues.
- B. To gain knowledge of the skin manifestations of systemic disease.

General principles of tumours in terms of pathology, aetiology and epidemiology. Malignancies of skin, blood, organs and head and neck. Collagen and vascular conditions. Skin manifestation of systemic disorders include auto immune conditions.

Module 3.4

FEVER

MUM43FE

The aim is to understand the pathogenesis, etiology and management of fever from a neonate to adulthood.

Acute and chronic causes of chest infections, non-respiratory tuberculosis, tropical diseases such as malaria and typhoid, viral infections. Approach to pyrexia of unknown origin, clinical presentations and management. Infectious disease control.

Module 3.5

ABDOMINAL COMPLAINTS

MUM53AC

The aim is to introduce the student to the 'Acute Abdomen'. The normal anatomy and physiology of the large bowel and chronic disorders affecting the large bowel including ano-rectal conditions. Students will

also be introduced to trauma of the abdomen. The principles of general anaesthesia will be discussed.

Causes of acute abdomen in adults and children - acute gastro-enteritis, hernias, ectopic pregnancy. Chronic causes - inflammatory conditions, irritable bowel and anal rectal conditions. Anaesthesia - preparation and problems. Chronic pelvic pain. Approaches to abdominal masses in adults and children. Differential diagnosis and management.

Module 3.6

REPRODUCTIVE HEALTH

MUM63RE

The aim is to gain knowledge of the purpose of screening for gynaecological malignancies, the problems around menstrual disorders and the menopause; the causes of infertility and when to refer. Risk factors for predicting abnormal obstetric conditions and appropriate referral. The basic principles of audit will also be discussed.

Primary and secondary causes of infertility and its management. Screening, pathology, presentation and management of malignancy. Menopause and issues - osteoporosis, cardiovascular risks and prolapse. Patho-physiology, clinical presentation and management of menstrual disorders. Risk factors and management of abnormal obstetric conditions. Medical audit.

Module 4.1

SIGHT AND SOUND

MUM14SS

The aim is to understand the structure and function of the end organs for sight and sound, their neural pathways, dysfunction and disease.

The eye. Physics of refraction. Neural pathways. Common problems of the eye including acute red eye, abnormal appearance. Diagnosis and management of: visual impairments. The eye in systemic diseases. Traumatized eye. Legal requirements of visual acuity.

The ear. Physics of sound. Neural pathway of hearing. Causes, diagnosis and management of hearing loss.

Module 4.2

HIGHER MENTAL FUNCTION

MUM24HM

The aim is to explore and understand the disturbance of higher mental function. Attention will be devoted to relevant neuro-anatomy, neuro-

physiology, history taking, clinical manifestations and management of these disorders.

Neuro-anatomy and neuro-physiology in relation to higher-mental function. Physiology and Biochemistry of neuro-transmitter function. Approach to diagnosis and management of headaches. Abnormalities of cognitive function, consciousness and psychotic disorders.

Module 4.3

JAUNDICE

MUM34JA

The aim is to deal with the clinical recognition and understand the significance of jaundice.

Anatomy, embryology, Physiology and Histology of the liver and biliary system. Haemolytic and obstructive causes of jaundice from neonates to adulthood. Alcohol abuse and the hepato-portal hypertension, liver failure and liver and drug metabolism.

Module 4.4

LIFESTYLES

MUM44LS

The aim is to understand health and disease as reflections of the social/cultural/environmental/political/ economic circumstances and lifestyles.

Definition and multi-factorial causes of stress. Coping with stress - Adaptive: exercise and meditation, Maladaptive: substance and alcohol abuse. Smoking and related conditions. Other psycho-social responses. The impact of such on personal health, the family, and society - especially domestic violence and child abuse, post-traumatic stress. Conditions related to specific lifestyles - sexually transmitted diseases, HIV, cancer of the skin, obesity and loneliness in the aged. Management. Holistic approach to management. Health promotion.

Module 4.5

MAN / ENVIRONMENT / HEALTH

MUM54ME

The aim is to understand the relationship between health, the workplace and the environment and their impact on health.

Legislation in relation to occupational and environmental health. Management and rehabilitation of occupational diseases and injuries. Concepts in relation to hazards. Environment and health - housing,

pollution, water supply and sanitation. Inter-sectoral collaboration in addressing these issues. International disasters - international perspectives and policies. Public health issues in relation to environmental health.

Module 4.6

PRACTICE MANAGEMENT / THERAPEUTICS / OMISSIONS MUM64GP

The aim is to understand medicine in different areas and the social settings in which it is practised.

1. GP attachment – practice management, projects, case studies, common dermatoses seen in general practice.
2. Pharmacology/Therapeutics.
3. Legal/Ethical aspects of medical practice.

Absorb omissions from previous modules and/ or further in-depth study of some topics not adequately covered in previous modules (Bleeding, Coagulation Disorders, Health Information System, Health Economics).

Curriculum**M3**

- (a) Candidates shall meet the promotion criteria for the following courses (*except for MBH2BE1 (Behavioural and Social Science), assessments of which contribute to the year mark of MBH3BE1 in the third year of study).

FIRST YEAR

DSB1MD1/1MD2	Biology (Medical)
DSC1DMY	Chemistry
DSP1DMY	Physics
MCH1COY	Community Health
MPH1PA2	Physiology 1
MAN1PA2	Anatomy 1
DCL1SC1	Skills and Concepts for Medical Studies
MFA1ECY	Emergency Care Practitioner (Basic) Course

SECOND YEAR

MAN2ANY	Anatomy 2 (including Embryology & Physical Anthropology)
MPH2PHY	Physiology 2 (including Experimental Physiology, Histology and Biochemistry)
MBH2BE1	Behavioural & Social Science 1*

THIRD YEAR

MMI3MIY	Microbiology
MPR3PHY	Pharmacology
MAP3ANY	Anatomical Pathology
MBH3BE1	Behavioural and Social Science 2*
MME3ICY	Introduction to Clinical Methods

FOURTH YEAR

MCH4COY	Community Health 2
MCP4CHY	Chemical Pathology
MFO4FMY	Forensic Medicine
MME4MEY	Medicine 1
MSU4SUY	Surgery 1
MOG4OBY	Obstetrics and Gynaecology 1
MPS4PSY	Psychiatry 1

FIFTH YEAR

MFO5MLY	Medical Law & Ethics
MME5THY/5CLY	Medicine 2
MSU5THY/5CLY	Surgery 2
MOG5THY/5CLY	Obstetrics and Gynaecology 2
MPD5THY/5CLY	Paediatrics 2
MPS5THY/5CLY	Psychiatry 2

SIXTH YEAR

MME6THY/6CLY	Medicine 3
MSU6THY/6CLY	Surgery 3
MOG6THY/6CLY	Obstetrics and Gynaecology 3
MPD6THY/6CLY	Paediatrics 3
MPS6THY/6CLY	Psychiatry 3
MFM6THY/6CLY	Family Medicine

- (b) A candidate shall subscribe to the following declaration prior to the commencement of the MBChB degree:

AS A STUDENT of Medicine at the University of Natal

I do solemnly declare that I will keep silent about those things which I have seen or heard whilst dealing with the sick and that in my relations with patients and colleagues I will conduct myself according to the ethics of the medical profession. I will not knowingly or intentionally do anything to any person which may harm them for any consideration whatsoever and I will exercise my profession to the best of my knowledge and ability for the good of all persons whose health may be entrusted to me.

I do hereby acknowledge and accept that by virtue of the practice, and therefore teaching, in the profession of medicine, various aspects of my medical studies and training in the Bachelor of Medicine Bachelor of Surgery degree may be scheduled to take place on any day of the week.

I hereby accept that all teaching programmes and activities scheduled by the Faculty of Medicine are essential to my medical studies and training.

I further acknowledge that the scheduling of activities on Saturdays/Sundays/ Public and Religious Holidays is due to timetable constraints and especially due to essential clinical teaching of a broad nature.

- (c) Candidates shall not be promoted to the subsequent year unless they have met all the promotion criteria of the Faculty in the examinations and/or clinical assessments as stipulated in Act No 56 of 1974 (Government Gazette No R652 of 5 May 1995).

Annexure S: Structure of First Year of Curriculum 2010

Year of Study	Module Code/ Semester	Name of Module	Themes	Assessment	Exlating/ New Module	Credits
1 st	DME1BFSM0 Semester 1 & 2 (Year module) * compulsory module	Basic and Foundation Science for Medicine	Anatomy, Physiology, Pathology, Embryology; Medically applied physics and general chemistry; Bio – and Organic Chemistry; Human Biology and Histology.	Class tests, End of Term Tests and End of Module Exam. Theory and Clinical (applied theory) Practicals	New Module	96
	DME1CPEM0 Semester 1 & 2 (year module) Compulsory module	Becoming a Professional	Communication Skills, Professionalism and Ethics, Psychology Family Community and Public Health, Diseases of lifestyles and HIV,	Continuous assessment (assignments, presentations and practicals, Report writing); and End of Module Exam (Theory, clinical, practical)	New Module	32
	DME1ENGM0 Semester 1 & 2 (year module) **Elective module	English Literacy	Communication theory, reading and writing scientific literature, medical terminology	Continuous assessment (worksheets, exercises, writing tasks and class tests); and End of Module Exam	New Module	8
	DME1ZULM0 Semester 1 & 2 (year module). **Elective module	isiZulu	Language structures and functions, medical vocabulary, and oral proficiency	Continuous assessment (worksheets, exercises, writing tasks and class tests); and End of Module Exam	New Module	8
	DME1COMM0 Semester 1 & 2 (year module) **Elective module	Computer Literacy	Computer hardware and software, Microsoft Office suite, internet, email and learning Management systems	Continuous assessment (worksheets, exercises, writing tasks and class tests); and End of Module Exam	New Module	8
				Sub-total (year 1)		152
2 nd	DME2HDHM0 Year module	Community and evidence based practice I	Health and Determinants of Health, wellness and health promotion	Quality improvement project, literature survey, written, supervisor report	Existing module content - rearranged	16
	DME2CRRM1 Semester 1	Homeostasis	Cardiovascular-Respiratory-Renal	End-of-Theme Test End of Module Exam (Theory, Practical, Clinical)	Existing module content - rearranged	72
	DME2MNM2 (Semester 1)	Mental Health and Neuro-musculo-skeletal problems	Psychiatry, Neurology, rheumatology, orthopaedics and rehabilitative medicine	End-of-Theme Test End of Module Exam (Theory, Practical, Clinical)	Existing module content - rearranged	64
					152	

	Module Code/ Semester	Name of Module	Themes	Assessment	Existing/ New Module	Credits
3 rd year	DME3NGLM1 Semester 2	Co-ordination, protection and control	Nutrition, GIT Liver and Biliary System, Endocrine Genetic, Molecular, Skin & Auto Immune conditions	End-of-Theme Test End of Module Exam (Theory, Practical, Clinical)	Existing module content - rearranged	72
	DME3RHM2 (Semester 2)	Reproductive Health Blood and AI, Infectious Diseases and Aids	Reproductive Health Blood and Auto immune conditions, Infectious Diseases and Aids	End-of-Theme Test End of Module Exam (Theory, Practical, Clinical)	Existing module content - rearranged	64
	DME3ICM2 (Semester 2)	Integrated Approach to Illness, Cardinal Symptoms of Disease	Integrated multi- disciplinary approach to illness	End-of-Theme Test End of Module Exam (Theory, Practical, Clinical)	New Module	16
	DME3IEM1 (Semester 1)	Community and evidence based practice II: Introduction to Research and Evidence Based Practice	Health and Determinants of Health, wellness and health promotion Introduction to Research and Evidence Based Practice	Report, protocol, supervisor report	Existing module content - rearranged	16
				Sub-total (year 3)		168
4 th	DME4MFPM1 (Semester 1)	Medicine, Family Medicine and Public Health	Medicine, Family Medicine and Public Health	Assignments, presentations, Written Clinical and Portfolio	Existing module content - rearranged	64
	DME4ELEM0 (Semester 1)	Elective1	Elective1	Report and Supervisor Assessments	New Module	16
	DME4GEOM2 (Semester 2)	General Surgery	General Surgery	Theory and clinical	Existing module content - rearranged	16
	DME4PFMM2 (Semester 2)	Paediatrics	Paediatrics	Theory and clinical	Existing module content - rearranged	16
	DME4OFMM2 (Semester 2)	O&G	O&G	Theory and clinical	New Module	16
	DME4TCAM2 (Semester 2)	Trauma, Critical, Emergency Care, Anesthetics and Forensic Medicine	Trauma, Critical, Emergency Care, Anesthetics and Forensic Medicine	Theory and clinical	New Module	16
	DME4FAMM2 (Semester 2)	Family Medicine	Family Medicine	Theory and clinical	Existing module content - rearranged	16
				Sub-total (year 4)		160

Year	Module Code/ Semester	Name of Module	Themes	Assessment	Existing/ New Module	Credits
5 th	DME5APMM1 (Semester 1 & 2)	Adult and Paediatric Medical and Mental Health		Theory, Clinical & Portfolio	Existing module content - rearranged	72
	DME5PSOM2 (Semester 1 & 2)	Principles of Surgery and O&G		Theory and Clinical	Existing module content - rearranged	72
				Sub-total (year 5)		144
6 th	DME6MEDM1 (Year Course)	Medicine		Theory and Clinical	Existing module content - rearranged	32
	DME6PAEM1 (Year Course)	Paediatrics		Theory and clinical	Existing module content - rearranged	32
	DME6PSYM1 (Year Course)	Psychiatry		Theory and clinical	Existing module content - rearranged	32
	DME6ONGM2 (Year Course)	O&G		Theory and clinical	Existing module content - rearranged	32
	DME6SURM2 (Year Course)	Surgery		Theory and clinical	Existing module content - rearranged	32
	DME6RURM2 (Year Course)	Integrated Family and Public Health Medicine (Rural attachment)		Report, portfolio, quality improvement project, oral	New Module	32
				Sub-total (year 6)		192

Note: many of the modules listed above (More than 50%) exist as current modules in the MBChB V programme. Names and module codes have been changed to avoid confusion with existing modules as they would be delivered concurrently in the 5 year and 6 year programmes
Number of hours and credits for final year = (40 hours per week + weekends + assessment time)
= 6 weeks per rotation.

13. Rules of combination for this programme

The MBChB is a tightly structured professional programme. All modules are compulsory and must be taken in sequence as prescribed in the table above (12) and the faculty rules. However, students who fail modules in years 2-5 will be allowed to negotiate their passage through the remainder of the modules in a sequence which will be determined by the administration through the concept of a rolling curriculum (which was approved by Faculty Board (SUME8(b)) which allows for flexibility in the sequential nature of the programme. All modules must be completed. Student choice is permitted only in the choice of projects in the elective modules, in year 1 and year 4. In the elective module in year 4 students could choose to do existing formal university modules or individually designed learning activities based on vocation, research or personal interests.

14. Integrated assessment criteria and methods (designed to capture learner capability/ applied competence at certain exit points)

In this context "integrated assessments" have different meanings. The first being the assessments (tests and examinations) whether written or clinical are integrated both vertically and horizontally. Vertical integration means that both clinical and "pre-clinical" basic science disciplines contribute to the assessment; while horizontal integration means that the integration occurs between disciplines at the same level, e.g. Internal Medicine and Family Medicine and Paediatrics contribute to a common assessment. The second meaning in this context is whether the assessment in a particular discipline is integrated – i.e. is there sufficient overlap and integration of the theory (knowledge), practical (clinical skills) and attitudes which will assess overall competence rather than individual competencies. The clinical assessments are designed to assess overall competence in the practice of medicine through problem solving, knowledge of medicine, clinical skills and communication as well as professionalism and ethics.

This practice is encouraged and occurs at all points in the programme and is in keeping with the Faculty's statement that it has an integrated, multi-disciplinary, problem-based learning curriculum. Where multiple disciplines contribute to a common assessment, sub-minimum criteria exist within those assessments and/or modules to ensure the students capability and competence in the various components of the assessment and/or module.

The final year addresses all 5 competency areas; i.e. Internal Medicine, Paediatrics, General Surgery, Psychiatry and Obstetrics and Gynaecology; and the district level care (rural attachment) module provides students with the opportunity of experiencing the practice of medicine in a poorly resourced environment.

Both formative and summative assessment practices as well as a continuous assessment strategy are employed. Formative assessments include written, questionnaire based and peer assessment practices. With regard to summative assessments, the Faculty employs a diverse array of assessment tools to assess the various parameters of the exit level outcomes and the module and theme objectives. Written examinations test the students' knowledge and application of the theory, as well as writing skills and language and grammar. Written examinations may be multiple choice questions, essay type questions, or modified essay type questions and short answer questions. Bedside clinical examinations test the clinical method as well as professionalism, etiquette, ethics, clinical reasoning and judgment. Computer aided assessments are utilized to test a combination of the outcomes and oral examinations ensure that the verbal and communication skills are assessed. In addition objectively structured clinical examinations are used to test knowledge and competence in a sample of skills and procedures. Case reports and Portfolios are used to assess the deep learning that should be in place during clinical rotations as well as the knowledge base of the patient encounters. The submission of a literature review and a research protocol assesses the student's ability to engage with the principles of research.

The reliability, validity, relevance to practice, transparency and fairness of the assessments are ensured by departmental and faculty assessment committees. In addition, all final written and clinical assessments are externally moderated and external examiners are requested to submit a report which provides feedback to the internal assessment committees.