

The Impact of Core Competency Training for Primary Care Nurses in South Africa

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## Declaration

I hereby state that the whole thesis, except where specifically indicated to the contrary in the text, is my own original work.

Signed by candidate

November 20, 2006  
Date

## Acknowledgements

At times I thought the day that I would sit down to write these acknowledgements would never arrive. So many personal and professional events happened during the course of this study: a second child was born, an only sister died and a spouse was ordained. While life's joys and sorrows, the events that constitute a rich life, unfolded, this study somehow remained a labor of love. It was inspired at the beginning and remains inspired by the work of rural clinic nurses in under-resourced areas who respond to the need to provide primary clinical care in what at times are very difficult circumstances.

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*"If we could first know where we are and whither we are tending, we could then better judge what to do and how to do it."*

Abraham Lincoln

*"Education is the most powerful weapon which you can use to change the world."*

Nelson Mandela

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## Abstract

To effectively support the primary health care transformation of the South African health system, human resource development is needed. Nurses, at the forefront of primary care service delivery, urgently need support and advancement to fulfill their role. This study aimed to investigate the impact of core competency training on primary care nurse competence. To begin this investigation, a framework of core competencies was generated through two reference group meetings. This work was followed by a Delphi study to further define core competence in primary care nursing and how best to measure such competence. Nine core competencies were defined which led to the development and piloting of a core competency evaluation tool including a self-test and observation tool.

This early work was followed by the implementation and evaluation of a novel core-competency training program. This program was implemented within district health systems with working clinic nurses. It involved four distinct sites in three different provinces. A total of 162 nurses took part in the study, including an intervention and reference group. The goal was to assess the impact of training in a real world setting. Using the self-test and observation tools, this study showed that competence does improve with this type of training. Additionally, competence is most reliably assessed through observation since test familiarity and possible contamination decrease the usefulness of repeated self-test measures. Further assessment of this novel training program and refinement of the measurement tool are recommended. This study can serve to inform health policies, particularly regarding human resource development within emerging district health systems. It provides a practical and effective training approach for increasing nurse performance of primary care core competencies.

# Chapter I

## *Introduction*

This study investigates the issue of competency attainment in primary care nursing in South Africa. It grew out of the author's work as a nurse trainer in primary care and community health nursing and as nurse training coordinator for the Health Systems Trust, a non-governmental health organization supporting research and development for health systems transformation in South Africa. The role of nurse training coordinator provided the opportunity to support and evaluate nurse-training needs in numerous emerging district health systems throughout South Africa between 1996 and 1999. This experience and the relationships made allowed for the formulation and completion of the research topic presented here.

In particular, this role focused on the links between human resources and the massive restructuring of the health system following the end of Apartheid. This transformation has and will continue to have profound effects on the way nurses are educated and trained. "Basic teaching and training of nurses is no longer adequate and specialized skills and knowledge to provide nursing care are essential" (du Rand & Viljoen, 2002, p. 14).

South African health services are faced with two important challenges:

- The need for high quality primary clinical care services as part of the restructuring of the public health services.
- Significant shortages of nurses with the adequate skills mix to lead the provision of such services.

How do we improve the quality of primary health care (PHC) services amidst massive health system transformation while at the same time strengthening and empowering the nursing profession to achieve its full role and responsibility within the PHC context? Since nurses provide the vast majority of services at this entry level to the health system, nurse training and the acquisition of appropriate primary care nursing skills and abilities must be critically examined. Given service demands and patient safety, how to improve nurses' skills in a relatively short period of time is a critical concern. This is a complex task given immense current health needs, evolving post-Apartheid legislation, limited resources as well as unequal power relations between medicine and nursing. Clinic nurses need to be fully supported to acquire the necessary competencies to fulfill their role as the main providers of primary health care clinical services. Lessons learnt on competency attainment in primary care may prove beneficial to other countries undergoing similar restructuring of health systems.

A number of synonymous terms are used to describe primary care nursing including primary care, primary level and primary health care (PHC) nursing. For clarity and consistency, the term primary care nursing is used throughout this study to refer to the delivery of nursing services at the first level of contact with the health system. In South Africa, primary care facilities offer comprehensive services including health promotion, disease prevention, curative and rehabilitative services. This type of service is commonly provided at fixed clinics, mobile health services and in the outpatient departments of district hospitals (Hall, 1999).

Although commonly used in South Africa, the term PHC nurse is avoided here. This distinction is made to emphasize the more narrowly defined term of primary care within the broad visions of primary health care. Primary care nursing is a vital component of a well functioning PHC system. Community health nursing is

another term as well as qualification attained by South African nurses often working at the primary level. Yet, in South Africa, the history, development and education of community and primary care nursing have been distinct. The nuances and issues that complicate this terminology will be examined fully in chapter II.

Nurses are the dominant provider of Western style primary care services in South Africa although doctors, physical therapists, social workers, pharmacists and pharmacy technicians also rendered some or all of these services within public institutions. This study addresses primary care nursing services as part of the public health system. It does not investigate the role of primary care nursing in private institutions or the role of other primary care providers, including traditional healers. Although these services play important roles in health worker training as well as the provision of primary care, the author has chosen to concentrate solely on the educational needs of primary care nurses in the public health sector.

### ***A National Health Plan Rooted in Primary Health Care***

With the end of apartheid came broad policy and programmatic changes within the health sector. A shift in emphasis was laid out in African National Congress policy documents including; *A National Health Plan for South Africa* and *The Reconstruction and Development Programme (RDP)*. The RDP (ANC, 1994b) specified that the newly established National Health Service would be rooted in the PHC approach (ANC, 1994b). Furthermore, “There must be a programme of retraining and reorienting all existing health workers to the Primary Health Care approach. The aim is to train 25 percent of district health personnel by the end of 1995, and 50 percent by the end of 1997”. The RDP also called for the “complete transformation of health worker training” including the development of new short

reorientation programs for personnel already in the health system. This early policy document significantly identified the need to train current staff in primary clinical care and prioritized this training as critical to the overall improvement of health and development in the country (ANC, 1994b, p. 50-51).

### ***District Level Reorientation***

The ANC National Health Plan (1994a) specified how health personnel would be reoriented to primary health care. Following this, the White Paper on the Transformation of the Health System in early 1997 provided the strategic framework for a new health system and its' human resource development requirements..

Numerous role-players have been involved in human resource development of nurses including departments of education, welfare and health. The South African Nursing Council (SANC) and the Ministry of Health (MOH) as well as many nurse-training programs have helped to move this process forward. The South African Qualifications Authority (SAQA), which provides infrastructure for qualification accreditation, is informed by the work of these numerous role-players. Considerable discussion on the topic of upgrading nurses' primary care skills took place at the 1999 National Nursing Summit organized by the Health Systems Trust, in partnership with the Ministry of Health and the South African Nursing Council. Attended by over 200 nursing leaders from throughout South Africa as well as the Minister of Health, this summit provided a platform for presenting the current issues in nursing in light of new primary care legislation and programs implemented over the past five years by the democratically elected government (Health Systems Trust, 1999).

### ***Problem Statement***

The summit focused attention on two important questions that remained unanswered: 1.) What is the best way to upgrade the skills of working nurses in an equitable and efficient manner? And 2.) What is a reliable yet practical way to monitor and evaluate the effect of this primary care skills development?

These questions should be considered with reference to the wider historical context first. It is difficult to find places in South African society that have been spared the legacy of apartheid. Indeed, health care, and more specifically nursing, still grapples today with inequities in educational and health service institutions from the past. Furthermore, nursing concerns and public health needs predate even the Apartheid era (from 1948 to the early 1990's). From the time of Nightingale, nursing has (and continues) to struggle to define itself and to provide a framework for professional practice within a context of the needs and demands of a disparate society. Shula Marks (1996) offers a sobering reminder that issues such as professional desires in nursing versus public health demands and the scope of nursing education have long been topics of heated discussion and debate. Table 1 provides a broader breakout of the challenges facing primary care nursing in South Africa.

**Table 1: Challenges facing primary care nursing**

Issue	Challenges
Professional development	Empowerment, Autonomy <sup>1</sup> Prescriptive Authority <sup>1</sup> Scope of Practice
Education & Training	Hospital centric practice <sup>2</sup> Practical supervision <sup>3</sup> Biomedical versus community based approaches (PHC and/or community health nursing) <sup>4</sup> Training to meet PHC service needs <sup>5,6</sup>
Service delivery	Wide and demanding scope of practice <sup>7</sup> Inequity in distribution of trained staff <sup>8</sup> (Inter and intra-provincial disparities) Inequitable distribution of resources Lack of orientation programs for new graduates and staff  Structural issues: Weak support systems including equipment <sup>3</sup> , technical support and referral networks

*Note.* <sup>1</sup>From "Enabling legislation in diagnosis and prescribing of medicine by nurses/health practitioners," by N. Geyer, 2001, *Curationis*, 24, p. 19. <sup>2</sup>"An assessment of the exit competencies of professional nurses in relation to those required to implement the national health system at district level: the implications for nursing education" by G. Edelstein et al., 1998, Working paper No. 1, May. UWC Centre for Health Human Resources. <sup>3</sup>"The scope of nursing practice in the rural areas: Implications for nursing management and nursing education" by S. Ntlabathi, 1995, pp14-16. <sup>4</sup>"A job analysis of selected health workers in a district health system in KwaZulu-Natal, Part Two: Job Analysis of nurses in primary health care settings," by S. Mbambo, L.R. Uys, & B. Groenewald, 2003, *Curationis*, 26, p. 42-52. <sup>5</sup>"Assessment of a post-basic nursing education programme" by P. du Rand & M.J. Viljeon, 2002, *Curationis*, 25, 14-21. <sup>6</sup>Strategies for Nurse Training in Rural Areas, by J. Webber (Ed.), 1995 <sup>7</sup>Analyzing the PHC package gap. In *Guidelines for District Health Planning and Reporting* (Part D: Planning Tools) by DOH, <http://www.doh.gov.za/search/index.html>. <sup>8</sup>"Measuring quality of care in South African clinics and hospitals" by W. Pick et al., 1998, In A. Ntuli (Ed.), *South African health review* (Technical Report to Chapter 14). Durban, South Africa: Health Systems Trust.

Structural limitations also affect primary care service delivery. Nurses provide comprehensive services to both adults and children, often when equipment and supervisory support are sub-optimal (Health Systems Trust, 1999). As Viljoen, Heunis, van Rensburg, van Rensburg and Fourie (2000) report, South African nurses see an average of 474 patients per month at fixed clinics, yet at least a third of these clinics will receive visits by a nurse supervisor at a frequency less than monthly. Clinic nurses are isolated by long distances (an average of 29 kilometers between the clinic and referral hospital for emergencies) (Viljoen et al, 2000). As a result, many must work independently. In a 1999 assessment of clinic services, Morris (1999) reported that issues such as an uninterrupted water supply to clinics and emergency response times still needed to be significantly improved.

Even though such infrastructure and managerial improvement needs are outside the scope of this study, it is worth noting that they actually place increased importance on nurse competence. For example, when nurses see large numbers of patients each day, their screening skills must be strong. Clinic nurses do not have time for in depth interviews, and cannot count on access to doctors or senior nurses for review and consultation. Self-reflection and discovery are luxuries afforded few. They need to make judgments efficiently and autonomously. When there is great distance from the primary care setting to the referral community health center (CHC) or hospital, nurses need to manage and/or stabilize complex emergencies while transport is accessed.

It is the opinion of the author that the core competencies approach (knowledge, attitudes, skills) required to fill this role should form the basis of all nurse-training programs, but currently does not. A number of solutions are probable, such as the inclusion of some advanced practice competencies into basic (pre-

registration) nurse training as well as expanding the availability of post registration primary care training to more nurses, especially those in rural areas. Achieving these core competencies rapidly and in accordance with the workplace reality is an important step in reducing the gap between theory and practice and is part of the ongoing transformation of nursing based on primary health care.

Establishing a sufficient cadre of nurses competent in a core set of primary care skills remains a critical part of nursing education and human resource development within the public health system. Where and how these skills are acquired is still debated. Should a new graduate possess these core skills, or are they to be acquired only after some work experience and post basic training? Currently, professional nurses working in primary care settings (mobile, fixed clinics and community health centers) include registered general nurses, registered nurses with a community health qualification and nurses with primary care qualifications (either a diploma or certificate).

### ***Why a focus on nurses?***

Nurses are the largest body of health professionals working in the public sector and in primary care. Their numbers far exceed those of doctors. In South Africa there are 19.7 public doctors per 100 000 population compared to 107 public sector professional nurses per 100 000 population (Health Systems Trust [HST], 2003a). Currently there are 51,261 professional nurses with community health training (A. Green [SANC], personal communication, January 20, 2005). In 2003 there were 7, 645 medical practitioners in the public sector) compared to 41, 563 professional nurses working in the public sector (HST, 2003b & HST, 2003c).

The number of doctors available is too few to be seen as the main provider of primary care services at clinics and community health centers (CHC's). Furthermore, doctors' longer training and expertise is more effectively used at the district hospital level where additional laboratory and diagnostic services (such as X rays) are available and as referral resources to primary care nurses. Their ability to manage referrals and complex emergencies is better utilized at the hospital level.

Community health care workers (CHW's) are well suited to provide some primary care services but they are not educated or skilled to provide a comprehensive primary care service as envisioned by the South African Ministry of Health. The government aims to ultimately include care of the malnourished, termination of pregnancy (TOP) counseling, cervical cancer screening and care of conditions such as tuberculosis and diabetes, in the PHC package for fixed clinics. (DOH, 2003, p. 20)

A focus on primary care nurse competence is therefore warranted and should be seen as a sound investment in improving primary care nursing services. Yet, it remains unresolved as to how to develop an adequate number of nurses with core competencies in primary care. There is a pressing need to dramatically and swiftly increase the number of nurses with PHC core competence. Compared to the large number of registered professional nurses (41,563) located in the Public sector (HST, 2003c, Indicator Data) currently there are only 4,443 nurses with a diploma in primary clinical care. (A. Green [SANC], personal communication, January 17, 2005).

To focus only on reshaping the basic training of nurses would be inappropriate given the reality that thousands of professional nurses currently run primary care services and have many, if not all, of the requisite competencies to deliver comprehensive services. What is needed is not complete retraining, but identification

of relevant experience and education and the careful identification of knowledge and skill gaps. A core competency approach potentially provides a practical framework within which to identify a nurse's knowledge base and existing training needs. Yet, how to practically identify and assess competence as well as increase the number of nurses competent in primary care in a timely and effective manner remains unclear, and raises a number of important research questions.

### ***Research Questions***

This study therefore investigated the following questions:

1. What are the core competencies of clinic nurses at primary care level?
2. How should a clinic nurse's core competence be measured considering both effectiveness and efficiency of tool use?
3. What is the impact of a core competency-training program on a clinic nurse's competence?

### ***Aim of the Study***

This study aimed to investigate the impact of core competency training on primary care nurse competence and to explore whether core competence training could result in a "training jump" in competence. This work is an attempt to find a solution to the unmet primary care training needs of nurses through the development and evaluation of a novel training program using a core competency approach. A long-term goal is that the study will inform the development of equitable, efficient and effective training models. Equity infers that the needs of previously underserved nurses will be met through decentralized training, which improves access for all nurses in the field. Efficiency implies that the program can be completed at the

district level and considers service and personal demands. Lastly, effective implies that such training leads to a demonstrable improvement in competence.

### ***Objectives of the Study***

To achieve this aim, the study objectives were to:

- 1.) Identify core competencies required for primary care nurses in South Africa
- 2.) Measure core competencies amongst South African nurses before and after a primary clinical care training intervention using a measurement tool.
- 3.) Compare pre and post training competencies amongst those receiving training to controls<sup>1</sup>.
- 4.) Conduct focus group discussions with trainees to assess the perceived impact of a primary clinical care training intervention on professional practice.
- 5.) Make recommendations for primary care nurse training based on the study results.

To accomplish these objectives, a series of tasks (process objectives) were completed.

**Phase One:** Conducted two reference group meetings and a Delphi study to identify core competencies and the best methods to measure them

**Phase Two:** Developed a measurement tool for core competence utilizing the findings of Phase One

**Phase Three:** Developed and implemented a core competency training program in four health districts with appropriate evaluation.

**Phase Four:** Analyzed, interpreted and compiled report of findings

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<sup>1</sup> Controls were a reference group of nurses who did not go through the training but took part in the evaluations.

## ***Operational Definitions***

The following operational definitions were used in this study:

***Competence:*** Possessing a range of skills, knowledge and an attitude, which are adequate for delivering primary care services.

***Core competence:*** Possessing essential primary care competencies to yield a "safe" practitioner.

***Comprehensive core competencies:*** The broad yet essential competencies necessary to yield a competent practitioner.

***Feasibility:*** The likelihood that a working clinic nurse will be able to complete the training program in her own district with the support of a local preceptor.

***Reflective:*** Training that consistently encourages the learner to internalize and question the personal relevance of new knowledge and experience through the use of emotive and provocative questions.

***Primary care nursing:*** Nursing services that are provided at the first point of contact with the public health system and which include health promotion, disease prevention and curative services.

***Primary Health Care (PHC):*** Essential health care based on practical, scientifically sound and socially acceptable methods, which is universally accessible to individuals and families. PHC forms the main focus of the country's health system, as well as the overall social and economic development of the community (adapted from the Declaration of Alma-Ata- WHO, 1978).

***Safe Practitioner:*** A nurse who demonstrates competence in day-to-day practice.

***Scope of Practice:*** Extent or range of duties performed by a licensed health professional in accordance with national legislation for the profession.

Despite numerous structural and human resource challenges to the development of primary care systems in South Africa, this study attempted to investigate the impact of competency based training on the performance of nurses, who remain the backbone of the primary care system. Three distinct phases led to the successful completion of the five study objectives as presented in Box 1. Chapter II provides a detailed review of the literature, including an in-depth review of the history of primary care in South Africa. Chapter III explains the research methodology employed in this study while chapters IV and V present the results for Phases I-III of the study. The final chapter, chapter VI presents a discussion on the entire process as well as conclusions and recommendations.

**BOX 1: Timeline of study progress**

	YEARS	EVENTS
11/1998:	<b>Phase One:</b>	Reference group meetings to identify core competencies
1999-2000:		Delphi study on measuring core competencies
2000-2001:	<b>Phase Two:</b>	Development of the evaluation tool to measure core competence Pilot study of core competence measurement tool Follow up meetings with pilot study leaders to further refine tool Wrote training program and elicited feedback from trainers and educators Met with ISDS facilitators to identify study districts
2001-2004:	<b>Phase Three:</b>	Training and evaluation in four field sites Follow up focus group meetings and trainers' questionnaires completed
2004-2005		Completion of qualitative and quantitative analyses and write up of findings

## Chapter II

### *Review of the Literature*

#### *Primary Health Care*

##### *The Alma-Ata Declaration.*

The goal established at the WHO conference at Alma Ata was "...the attainment by all peoples of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life. Primary health care is the key to attaining this target as part of development in the spirit of social justice" (WHO, 1978, ¶ 5). Primary health care (PHC) is essential health care, which is universally available to all. Such health care is the foundation of the health system as well as the overall social and economic advancement of a country. Although Alma Ata states that PHC is the first level of contact, Dennill, King, Lock and Swanepoel, 1995 point out that it is not just first contact care but a "...dynamic product of the community it serves, as it evolves from the economic, socio-cultural and political characteristics of that community..."(p. 3). Thus primary health care is rooted in a community wide approach, which extends beyond the clinic walls to sanitation, nutrition and health education programs. Primary health care involves all members of the community and requires broad collaboration and teamwork. Primary health care is rooted in social justice and, as declared at Alma-Ata, frames health as a basic human right (WHO, 1978, ¶ 1).

### ***Primary Health Care and the Struggle for Independence***

Following independence from colonial rule, many newly formed governments in developing countries were encouraged to rationalize health care and provide better basic services (Banerji, 2003, Dennill et al., 1995). Many realized that a healthy population could not be achieved solely by medical science but would require transformation of the very society in which people lived. This was true in post-colonial India and much of the newly independent states on the African sub-continent.

History has shown that the struggle to gain independence is generally followed by an equally arduous struggle to create a just society where a healthy life is possible for all. Werner, Sanders, Weston, Babb, and Rodriquez (1997) state that while many newly independent states made commitments to expand health services into underserved areas, most funding continued to go to curative, urban services. Thus, health care remained medically oriented, expensive, concentrated in metropolitan areas and limited in scope and impact. De Beer (1984) further explains that the fight against disease is not only technical and scientific, but requires a complete change in the way we approach health and health care. This complete change is perhaps best captured in the principles of primary health care (PHC).

The concept of PHC grew out of discontent with health services, which were seen as expensive and limited despite technological advances. Primary health care concerns were fundamental yet widespread. For example, the interplay between nutrition, housing, and tuberculosis (TB) control is probably one of the best public health examples of this. DeBeer (1984) showed the limits of new technologies amongst overcrowded and poorly fed South African miners and the need for a primary health care approach:

The sharpest increase in reported cases of TB took place from the mid-1940s till about 1960. During this time, drugs were first discovered that could treat TB effectively. The discovery certainly helped to reduce the number of people dying from TB. However the discovery had little effect on the actual number of people being infected and falling sick. (p. 10)

We know that death rates from TB were in decline in the United States and England from the mid 1800's, long before the advent of medical therapy or a vaccine (Werner et al, 1997, Mausner and Kramer, 1985). People's health improved because living conditions and nutrition improved. People quickly realized that preventive and health promotion efforts could have wider scope and impact than a vaccine or drug treatment alone could have.

### ***Primary Health Care in South Africa***

South African health reformers recognized this and called for a PHC approach as the foundation of a new health system (Botha, Bradshaw, Gonin & Yach, 1988, Evian, 1988). Such leaders knew they would inherit a broken and dysfunctional health system from the apartheid state. However, calls for a PHC-based health system in South Africa in the 1980's did not emerge out of the blue. Indeed, a brief review of health policy developments in South Africa during the 20<sup>th</sup> century shows considerable evidence of novel thinking about health and health care that was the forerunner of much of the later developments in PHC. For example, documentation exists of proposed health systems rooted in community-oriented primary care (COPC) in South Africa in the 1930's and 1940's, including calls for primary care centers and comprehensive services (Harrison, 1993). These are examined briefly in the next sections.

***Shattered dreams: The Gluckman Commission.***

From 1942 to 1944 the South African National Health Services Commission chaired by Dr. Gluckman assessed the nation's health status. The Commission's findings built on twenty years of preceding debate and legislation, including the Public Health Act of 1919 and discussion about national health insurance in the late twenties and thirties (Harrison, 1993). This committee, known as the Gluckman Commission, found that the level of disease in the country was unacceptably high and could directly be attributed to poor social and economic conditions. The commission highlighted four criticisms of the South African health services:

- 1.) Divided and uncoordinated services, including local and provincial authorities, mine hospitals, private hospitals and mission health care.
- 2.) Shortage of services, especially in the reserves which were manned primarily by understaffed and poorly equipped mission hospitals.
- 3.) Private practice, which attracted many doctors to cities and profit driven services.
- 4.) An emphasis on the elite and worker productivity (De Beer 1984).

The commission's criticisms were damning and highlighted the state of affairs, advocated for change and gave glimmers of the principles outlined two decades later at Alma-Ata. Concern was raised about inadequate environmental services, the curative (as opposed to preventive) focus in medical education and the ulterior motive for building hospitals, namely to ensure a healthy labor force and to

pacify the increasingly discontent masses. Their ideas and recommendations led into a brief but energetic movement of community oriented primary care (COPC).

### ***The Community Oriented Primary Care (COPC) Movement***

In the early 1940's, Sidney and Emily Kark established the Pholela health center in rural kwa Zulu Natal. This center, although located about one hour from the university town of Pietermaritzburg, was a world away in terms of resources and infrastructure from that developed for the colonists. Yet by the end of the 1940's this couple had managed to establish forty-four health community oriented primary care (COPC) centers in rural Zululand (Susser, 1999). The work at Pholela held to numerous public health ideals, which we still struggle to make commonplace throughout the world today. Kark and Cassel's work became well known internationally, shaping academic thinking and the development of health centers for rural and urban poor in the United States (Yach and Tollman, 1993). Kark and Cassel (1952) emphasized concepts that were to become key modern PHC tenets such as health promotion, cultural sensitivity, community empowerment, and continuity of care. Most notably here, the expanded and collegial role of nurses in primary care was raised. Within the Pholela health system, "Like the doctors, each nurse is concerned with both curative and preventive aspects of nursing in the families she serves." (Kark and Cassel, 1952, p. 102.) Yet, as discussed in detailed later, we still struggle with how best to combine primary care nurses' role in the community and clinic.

COPC can be seen as a forerunner to the World Health Organization's (WHO) vision of primary health care outlined at Alma Ata. Susser (1999) explains that COPC is an intentional marriage of public health and clinical care and that COPC:

- Is rooted in the community with health workers coming from the community and working in communities far beyond the health center walls.
- Uses a multidisciplinary approach including social, psychological and public health disciplines.
- Emphasizes monitoring, evaluation (M & E) and research (Susser, 1999)

The COPC movement also took hold in diverse areas such as peri-urban Grassy Park outside Cape Town and in rural Bushbuckridge in Limpopo Province. Another pioneer, Dr. Jacob Henson, headed the COPC movement at Grassy Park. He was a man described as nearly missionary in his zeal to bring health to all (Phillips, 2003). Yet the innovation and enthusiasm of pioneers like the Karks, Cassel, Henson and the Gluckman Commission were stunted in subsequent years.

The political elite did not see COPC as a priority. In fact, it was seen as subversive and counterproductive to their aims of domination and control. As De Beer (1984) points out, the commission's findings and recommendations for a National Health Service (NHS) were made within a political context of concern over growing unrest amongst newly urbanized and unionized exploited laborers and not amidst a drive for "Health for All". The repressive ruling National Party allowed these progressive ideas to "wither away under the ideologically retrograde apartheid government" (Susser, 1999, p. 436).

Ironically, as the public health system in South Africa withered, these innovative thinkers emigrated and their pioneering work in COPC took root overseas. While Dr. Henson left for Australia, the Karks' established a model health center for international teaching in Israel and planted seeds for the conference at Alma Ata. (Phillips, 2003, Susser, 1999) Their work was not in vain and the ideals they attempted to live out in places like Pholela and Grassy Park shaped the philosophy of

the growing anti-apartheid movement and policies for health care transformation in South Africa (Hansen, 1978, Wagstaff, 1978, Evian, Waugh and Buch, 1985, Evian, 1989, Myburgh, 1989).

### ***PHC and Apartheid***

With the ascent of the National Party to power in South Africa in 1948, politicians began implementing the grand plan of formal segregation of blacks and whites under apartheid. All aspects of apartheid, from health to education and welfare, were antithetical to the principles of primary health care. Apartheid disregarded social justice, uprooted and dis-empowered communities and placed unequal value on people solely on the basis of race. Such a government sanctioned the inequitable distribution of resources, including access to health care and perpetuated profound social injustice.

As De Beer (1984) boldly stated, “Poverty, housing shortages and starvation are not accidental. They are inevitable consequences of a social order built on economic exploitation and racial oppression. A state based on such foundations would be denying its very nature if it were to produce a National Health Service that treated its work-force as people with human needs, rather than as economic units” (p. 28). This harmful social order and widespread lack of access to basic needs, including food, housing, sanitation and basic health care, profoundly affected health outcomes.

### ***Apartheid Health Care***

At a 1981 WHO conference on Apartheid and Health, the then regional director for Africa, stated, “More than four-fifths of the South African national community are victims of apartheid, which for them leads to the negation of human

rights. Health for all cannot be achieved in South Africa without the negation of apartheid, which is itself a negation of health. This dialectic is clear” (Quenum, 1983, p.7). At the same conference, the ANC’s Alfred Nzo, reiterated this point saying that apartheid violates the right to health, which is a fundamental human right. (Nzo, 1983)

Under apartheid, the life expectancy for blacks was lower than for all other racial groups and infant mortality rates for blacks was up to ten times that of whites (Zwarenstein & Bradshaw, 1989; Stein, 1986). As Herman (1986) explained, there are a number of factors associated with this higher rate, including poor health services, low socioeconomic status and a lack of adequately trained manpower.

Jinabhai, Coovadia and Abdool-Karim (1986), using a WHO model of indicators, objectively stated the devastating impact of apartheid health policy on health services and outcomes. They showed inconsistency in the pursuit of Health-for-All using social and economic indicators, living and working conditions and health care indicators. Evidence given of a dysfunctional system included the predominance of high technology and curative medical care which consumed nearly all of the health budget and the clear interplay between race and disease with Whites suffering diseases of affluence while Africans, Coloreds, and Indians suffered diseases of poverty. Diseases of poverty are impacted by poor nutrition, education, housing and access to basic services. Health indicators evidenced profound disparity in life expectancy at birth, for black males being only 45.0 years and for white males 65.5 years, while child mortality rates were 15.6/1000 for Africans and only 1.1/1000 for white children. Through the use of these WHO indicators they concluded that it was highly debatable whether an exploitive and racist system could be modified to provide Health-for-All. Not until all aspects of living conditions fostered health

would such discrepancies be reduced. Any efforts which did not acknowledge this need for profound change affecting all aspects of living were just window dressing and illusory.

Futile attempts at legislative window dressing could not curtail the growing international disgust at the state of health under apartheid. The 1977 Health Act promoted many PHC principles in word but not in deed. (De Beer, 1984, Nzo, 1983) Marks (1994) explains, "...through the 1980s much lip-service was paid to primary health care, especially in the rural and black urban areas... yet actual practice remained patchy and ambiguous" (p. 198). Inadequate funding, lack of government effort to ensure adequate basics (water, food, sewerage, housing and education) as well as defaulting responsibility for basic health services to voluntary organizations perpetuated the status quo of unequal health care and unequal health outcomes (De Beer, 1984), the effects of which are still felt today. The violent oppression of student activists, forced removal of entire communities and inequitable parallel education systems spoke louder than any impotent health legislation.

During the critical transition of power taking place in the early 1990's there were government attempts to restructure the health system. In 1992, in response to proposals made by then minister of health Dr. Rina Venter, the ANC stated that it would not be idle while the national party made vain efforts to unilaterally change the apartheid health system. The ANC called for wide stakeholder involvement in revamping a broken system and were upfront in their insistence that the views of the majority are not only heard but also adopted (ANC, 1992).

The primacy of PHC principles was at the heart of thinking amongst anti-Apartheid activists and healthcare reformists both locally and internationally (Wagstaff & Beukes, 1977, Mahler, 1983, Nzo, 1983, Evian, Waugh and Buch, 1985,

Myburgh, 1989). In a letter to the WHO assembly in Brazzaville, Alfred Nzo, (1983) then Secretary-General of the African National Congress wrote, “The underserved and least favored populations have a right and duty to participate both individually and collectively in the planning and implementation of their health care if you are to achieve your objective of the attainment by all people of good health by the year 2000” (p. 12). Then WHO Director-General Hafdan Mahler, clearly showed the international effort to prepare for a post-Apartheid South Africa and to heed the call made by Mr. Nzo, “...WHO has extended to the national liberation movements its technical support in the training of health workers, in the assessment of health needs, and in the organization of care for the victims of apartheid and racism, who have been forced to seek refuge in other countries in the region. This is a forward-looking policy, preparing step by step an infrastructure for health care which should be ready to assume functions and responsibilities in complex situations that are likely to follow, once a political change is achieved” (Mahler, 1983, p. 22). Yet, the complexity of health system transformation post apartheid was not sufficiently addressed in discussions or policy documents developed throughout the 1980’s and early ‘90’s.

In 1994, the democratically elected government inherited a health system that did not address the basic health needs of the majority. Since then the Government of National Unity (GNU) has been guided by the principle of equity, yet the system in place at independence was one of gross inequity (Barron, 1997), the transformation of which will take many years of concerted effort. The decade old democracy in South Africa is still in its early stages of transforming a society ravaged by years of inequity, violence, and racist policies.

***Inequity and health policy; the legacy of apartheid.***

Merson, Black and Mills (2001) describe equity as the “distribution of the costs of health services and the benefits obtained from their use between different groups in the population” (p. 518). This can be further broken down into *horizontal* and *vertical* equity. Horizontal equity occurs when equals are treated equally while vertical equity implies that people who are unequal should be treated differently (Merson, Black and, Mills, 2001). An example of horizontal equity would be when two people with asthma, who differ by race or socioeconomic status, are able to access the same services for their chronic condition. Vertical equity in purchasing health care would mean that the cost of that asthma service would be in direct relation to each person’s ability to pay for the service or as is more commonly presented, vertical equity implies that the state would spend more on services for those who are more ill or vulnerable to illness. Inequity on all levels was sanctioned and perpetuated during National Party rule and the apartheid era, leaving a legacy of inequity to follow.

For example, in 1995, only 19.1 % of Africans had an inside water tap compared to 99.9 % of Whites (Hirschowitz & Orkin, 1995). Infant mortality rates (IMR) showed large inter-racial disparities in 1990 (Table 2). [Infant mortality rate is generally seen as good indicator of health status and PHC in a society (Mahler, 1983)]. Furthermore, Zere and McIntyre (2003) quantified the degree of inequity in under-five child malnutrition based on race. Using data from 1993 they showed that under-five stunting and malnutrition differed significantly by race (Table 2).

**Table 2: Indicators of child health by race**

	IMR 1990 <sup>1</sup> (per 1000 live births)	Malnutrition Prevalence 1993 <sup>2</sup>	
		Stunting	Underweight
African	54.7	26.9%	18.6
Colored	36.3	18.8%	12.2%
White	7.3	5.2 %	3.5%
Asian	9.9	Not available	

*Note.* Adapted from <sup>1</sup>Yach and Harrison (as cited in *South African Health Review* by P. Barron, 1997) p. 7 and <sup>2</sup>“Inequities in under-five child malnutrition in South Africa,” by E. Zere and D. McIntyre, 2003, *International Journal for Equity in Health*, 2, p. 2-7.

Table 3 provides data from two of the poorest provinces in the country in the mid-1990's, which, during apartheid, included large "independent" homelands. These reports (HST and DOH, 1996a, 1996b) highlight the absence of basic health center infrastructure and access to health professionals.

**Table 3: The lack of primary care infrastructure in 2 provinces (1996)**

	Lack Water supply	Lack Telephone	Lack Grid Electricity	Registered Nurses (per 100 000 population)	Medical Practitioners	Dentists
Eastern Cape	46%	38%	52%	130.7	11.0	0.6
Northern Province	30%	23%	23%	107.9	6.6	0.5

*Note:* Adapted from *Health Care in the Eastern Cape: Implications for Planning* by The Health Systems Trust and Department of Health, 1996b, Durban: HST and DOH and *Health Care in Northern Province: Implications for Planning* by The Health Systems Trust and Department of Health, 1996a, Durban: HST and DOH

### ***The Mass Democratic Movement and Strained Nursing Loyalties***

Apartheid was clearly harmful to people's health and any movement towards equity was seen as a threat to the status quo. It would have been antithetical to government policy to acknowledge health as a right when people, based on race, were denied the right to vote, education and a decent standard of living. As political unrest mounted in the 1980's through mass struggles for democracy, many nurses increasingly took part in large anti-apartheid efforts. This struggle included protracted nursing strikes for better working conditions and calls for improved health care (Marks, 1994). Nurses, often seen as leaders in the community, were torn between their duties to their profession and duty to the struggle for democracy.

Caught between their duties to their patients and the demands of the comrades, between the pressures of the community and the Nursing Council, they (nurses) found their loyalties divided between the new radical health organizations and unions on the one hand and their professional association or the 'homeland' governments and parties like Inkatha on the other. (Marks, 1994, p. 196)

The nursing profession was clearly divided and colleagues were torn apart by apartheid and the struggle for independence. For example, when called to strike nurses were torn between their obligations to their patients and the strike which was calling attention to the unjust health system. This should be no surprise since nurses had to deal daily with the tragic consequences of a sick health system. The South African Nurses Association policies themselves caused unrest as well. Law mandated membership in SANA, but enrolled nurses and nursing assistants, two categories of predominantly black nurses, had no voting rights. Dissatisfaction with SANA even predated National Party rule with black nurses earning lower salaries and receiving training in facilities far inferior to those of whites (Marks, 1994, Marks, 1995).

The dualisms in the health service-between primary health care for the poor and private health care for the better off; between superior doctors and inferior nurses; between a powerful professional elite and a powerless majority of less qualified carers – continue to bedevil the profession, as do the gendered stereotypes associated with these dualisms. (Marks, 1994, p. 212)

This review of 20<sup>th</sup> century health policy and status in South Africa shows innovative work in the 1940's with community oriented primary care (COPC) and a call for national health care, followed by a racist and oppressive period of apartheid rule. The election of the National Party in 1948 and its policy of Apartheid put an end

to progressive initiatives and ushered in over 40 years of repressive and inequitable social policy and biomedical health services. Over the past decade, transformation of the inequitable health system has centered on the development of a responsive health service based on district based health systems.

### ***District Health System (DHS) Development from 1994***

With democratic elections in 1994, health experts were finally able to begin implementing policies for the development of a health system based on primary health care. In 1994, the ANC stated its commitment “to the promotion of health through prevention and education. The Primary Health Care Approach is the underlying philosophy for the restructuring of the health system” (ANC, 1994a, p. 19).

This health care structure would use district health systems as the basic building block of service. This is a journey in health system development, which still continues today. Harrison (1997) describes the district health system (DHS) as the vehicle for providing quality primary care through which communities and health providers work together to improve health. By making the district the basic building block of the health care system, local communities become central to policy development and planning.

The pillars of the DHS are:

- Organization, Planning and Management
- Financing and resource allocation
- Inter-sectoral action
- Community involvement
- Development of human resources (Bamford, 1997, p. 4)

The rationale for the development of a district health system (DHS) in South Africa was formally laid out in the *1997 White Paper for the Transformation of the Health System in South Africa* and included the need to overcome fragmentation, to promote equity and to increase access to effective and efficient health services (Gilson, Morar, Pillay, Rispel, Shaw, Tollman et al., 1996). Since that time numerous South African publications have discussed ways to improve health through DHS development (Bamford, 1997, Gilson et al., 1996, Gilson et al, 1997, Nicholson, 2001).

Historically, South African health services were divided between provincial and local authorities, with the former controlling and providing curative services and the later, preventive services and some specific treatment services for tuberculosis and sexually transmitted diseases. Although an overly simplistic breakdown of a complex system, this fragmentation has been an obstacle to developing integrated and coordinated PHC services (Naidoo, 1997, McCoy & Engelbrecht, 1999). Zwarenstein and Bradshaw illustrated this problem in 1989, saying that over twenty authorities, hundreds of hospitals and thousands of practitioners would need to be notified for one piece of legislative change. Other issues impeding district development have been difficulties in drawing up DHS boundaries; ongoing restructuring and the need to improve management capacity (Harrison-Migochi, 1998). In particular, for our purposes, the daunting task of harmonizing the multiple conditions of services must also be visited.

## *Issues in DHS Development*

### *Comprehensive services.*

The South African DHS should render comprehensive (in contrast to selective) health services (Department of Health, 1997). The nature and extent of such wide-ranging services are now outlined in the Comprehensive Primary Health Care Services Package for South Africa (Claassens, et al. 2001). For example, clinics now are routinely expected to provide ongoing medical care for chronic diseases such as hypertension and diabetes as well as management of tuberculosis, sexually transmitted diseases and HIV/AIDS counseling and care. Yet, the question of how best to deliver this package of services remains. Nicholson (2001) explains:

A primary health care package has been developed which suggests a range of services that should be available to every community. But we cannot assume that municipal health services are the same as the primary health care package. It is likely that the amount of resources available in a municipality will probably be the factor that decides what services can be offered and how much of each service will be delivered (p.36).

In addition to the question of how best to deliver this comprehensive package of services within the DHS, is the question of how to match nurse training with the skills and abilities nurses' require to deliver this package of district services.

### *Nurse training and the DHS.*

Central to good functioning of the DHS are the skills and competencies of sufficient numbers of trained nurses. In a review of ongoing challenges to DHS

development, McCoy and Engelbrecht (1999) noted three important philosophical issues which impact on nurse training:

1. The DHS is a means to an end (high quality, efficient health care) and not an end in itself.
2. The PHC approach and the DHS apply to the entire health system from the national to sub-district level, and PHC should not be confused with primary clinical care.
3. The DHS organizes health care based on geography as opposed to organization around specific health services.

This third point highlights the need to think of the DHS as a functional unit from which comprehensive services are run. In addition, each level (primary, secondary and tertiary) of service within the system should work with the others. To disregard the others would reduce the effectiveness and efficiency of the PHC system. One important example is the collaboration between the district hospital and primary care nurses working at the clinic level. McCoy and Engelbrecht (1999) note improvements, which are being made. "...the importance of district hospitals to effective PHC delivery is beginning to be recognized, and several initiatives to improve the quality of care of the district hospitals have begun. These include training courses for district hospital managers, developing guidelines for conducting a situation analysis of district hospitals, defining a core package of district hospital services and improving the information systems of hospitals" (p.137). Yet, this must go even farther. District hospitals need to work hand in hand with clinics to coordinate primary care orientation programs, clinic supervision, referral systems and clinical management between nurse run clinics and the district hospital.

Extensive resources are needed to provide a comprehensive primary care service. While careful planning is needed to acquire and distribute adequate supplies (e.g. drugs and equipment), human resources cannot simply be procured.

Considerable investment of time, money and strategic planning are needed to reorient and develop staff able to competently render a comprehensive primary care package of service.

### ***Nurses as primary providers.***

Nurses, as the largest cadre of health providers in primary care, must be the targets of reorientation for development of the district health system. “Historically, nurses have been a minimally supported and underutilized resource for the development of health care systems and the infrastructure that sustains them” (Ivantic-Doucette, 2004, ¶ 2). It bears repeating that nurses are the main providers of primary care services within the public health system. As apartheid ended, 62% of doctors were practicing in the private sector whereas only 21% of nurses were in the private sector. Furthermore, most public doctors were located in academic or tertiary level hospitals, leaving only 10% of public service doctors to support primary care services (McIntyre, Bloom, Doherty and Brijlal, 1995). Although the absolute number of doctors appeared adequate to meet the health needs of the population in 1990, the mal-distribution led to what has been described as a functional (as opposed to absolute) shortage of doctors (Benade, 1992; Slabber, 1992). This functional mal-distribution continues and developing primary care will be hampered unless nurses’ role as the main health provider is fully recognized and supported.

As the largest cadre of health providers at the district level a number of training issues need to be reviewed. Part of the reorientation towards a functioning DHS requires nurses to get more relevant experience and training at the primary rather than tertiary care level. A number of these issues are now explored.

### ***History of Nurse Training in South Africa***

During apartheid nursing education was segregated with inferior education and working conditions for non-Whites. Chapman and Rubenstein (1998) explain that

black nurses were especially mistreated and forced to play a subservient role. “Black nurses on white wards were often relegated to menial tasks...One result of these policies was to put patient health at risk, since the skills of black nurses were ignored even when they were essential to the well-being of patients” (p. 73). Such conditions stifled enquiry, learning and patient care and propagated a health system that catered to the health needs of white South Africans (Chapman & Rubenstein, 1998).

As previously discussed, the decline of apartheid heralded major health policy changes, which would necessitate significant changes in nurse training, and the reorganization of health systems. A shift in emphasis toward a district health system based on primary health care (PHC) was laid out in policy documents (e.g., ANC, 1994a; 1994b) and amongst health professionals (Owen, 1989), which both strongly called for retraining and reorienting all existing health workers. And although the nursing profession began work in the late 1970's to end discrimination by seeking minority representation on the Nursing Council, after apartheid formerly black training institutions still remained largely segregated and under funded (Chapman & Rubenstein, 1998), thus stifling the general development of primary care nurse training.

Nevertheless, nurses play a dominant role in the provision of primary care. Clinic nurses see an average of nearly 500 patients per nurse per month (Viljoen et al.2000). “In large parts of the Republic, especially in the rural areas, health care is in the hands of nurses, mostly black nurses, with only very occasional visits from a medical practitioner” (Marks, 1995, p. 37). The successful transformation of the national health system, one rooted in PHC, will only happen, when primary care nursing is rightfully supported; legislatively, financially and professionally. This

transformation will need to occur on two levels; both addressing racial inequity in training as well as a system wide reorientation toward primary care.

### ***Hospital-based training.***

Nurse training is subsidized by the state as nursing students are seen as an important part of the labor force within hospitals. Thus training is inextricably linked with the demands and character of hospitals. Practical training has largely occurred in tertiary settings where the focus is on delivering curative services under doctors' orders. Nurse educators have explained that hospital-based obligations make it extremely difficult for significant periods of learning to take place in primary care settings (Edelstein, Sanders, Groenewald, Van Niekerk, & Reddy, 1998). This model of training, although necessary and appropriate for work in hospitals, has not provided nurses with the broad skills mix needed to work at the primary level. In fact, such hospital centric training may foster skills and attitudes which do not promote, value or encourage a PHC approach, particularly when training is delivered in an autocratic teaching mode, which historically has been described as rigid and authoritarian and where critical thinking and diversity of opinion were considered unhelpful (Marks, 1994).

The Democratic Nursing Organization of South Africa (DENOSA) and the Commonwealth Nurses Federation (CNF) held a joint workshop in 1995 to discuss rural nurse training. As expected, much of the discussion and presentations focused on primary care. Ntlabathi (1995) raised concern about hospital centered training in non-rural areas, nurse educators' lack of familiarity with rural work and the nurses' extended role, leaving many nurses insufficiently "prepared to assume the responsibilities which await them in rural areas" (p. 15).

### *Integrated basic training of nurses.*

The establishment in 1986 of an integrated (inclusive of general nursing, midwifery, community and psychiatric nursing) four-year programme and qualification was an early attempt at reorienting basic nurse training away from hospital-centered practice to primary care settings. Yet, as Strachan and Clarke (2000) explain, changing curricula is not enough, since training is entrenched in hospitals. Preparing nurses for primary care requires revamping basic education, practice settings, and the qualifications of nurse tutors. More recently, in a review of the exit competencies of recent nursing graduates in kwa Zulu-Natal, Gauteng and the Western Cape, Edelstein et al. (1998) found:

There is general deficiency of understanding of the Primary Health Care approach and of its application to the implementation of the District Health System; not only by recent graduates, but also by nurse educators and that current curriculum, particularly in the colleges, do not adequately address this deficiency. (p.2)

Specific concerns included the lack of reference to current national programs such as *directly observed therapy* for tuberculosis and insufficient opportunity to develop counseling skills. Nevertheless, some university departments of nursing have seen considerable transformation take place with the development of problem-based learning (PBL) strategies and community based education (CBE) programs.

Marks (1994) adds, "Nor is it clear that the four-year integrated course ... is the most efficient form of nursing training. For primary health care, it has been argued that nurses needed more training in the community, and less in the hospital and college. In South Africa, the shortage of nurses in the public sector and the

inadequacies of basic black (Bantu) education system has made the strategy even more problematic” (p. 200).

Khoza and Ehlers (1998), using an exploratory and descriptive technique, made an early attempt to understand the impact of the comprehensive programme on nurse competencies. Using self-administered questionnaires of senior professional nurses (SPN's) they found that newly qualified nurses (NQN's) possessed certain strengths, such as the ability to rapidly gain independence when left in charge of a community health unit as well as a desire to improve their practice through asking questions. Yet, SPN's noted concerns about key areas in community health nursing such as inability to define clients' problems, lack of coordination with other community services (crèche, school, etc.) and problems detecting medication reactions. Although this study lacks actual performance indicators of competence and is based on SPN's perceptions, a number of worthwhile recommendations are made. Kohza and Ehlers encourage further study of NQN's competencies and to possibly develop orientation programs to suit specific learning needs.

Dennill (1999) has provided a summary of the issues in education transformation:

Are we producing nurses that are oriented towards the needs of the community, that are capable of community based nursing and then how capable are they of working independently within communities and at clinics...? Indeed the nurse gets more and more academic input but is still expected to take over tasks, that have until recently been assigned only to the medical profession, but she is expected to do so only under certain conditions where it suits the public services and where doctors are unable to cope. (p. 5)

### *The History of Community and Primary Care Nursing*

Prior to 1986, nurses interested in clinic work would often pursue post basic training in community nursing. Post basic training now referred to as post-registration training, means that a registered nurse returns for additional study after she has qualified as a basic (registered nurse). This post basic training takes one year and includes both didactic and practical requirements. Nurses would often complete this study while continuing to work as a nurse. The diploma in community nursing is a SANC approved qualification, which requires 120 credits. The SANC examination for this qualification includes two papers that are normally written in June or November each year (SANCa, 2004).

The South African Nursing Council (SANC) diploma in Clinical Nursing Science, Health Assessment, Treatment, and Care (CHAT course) is seen as the “gold standard” for attaining competence in primary care nursing. It was first identified as a programme in January 1982 (SANCb, 2004). This course is only offered after completion of a four-year registered nurse education.

The expanded role of nurses within primary care has long been recognized. Evian, in an address to the 1988 NAMDA conference, made a strong case for the role of the primary care nurse and the need for innovative primary care training. He highlighted numerous historical challenges including rigid and autocratic educational experiences, learning environments which stifled enquiry and which worked against known approaches for addressing the adult learner. Primary care nursing demands strong critical thinking skills and ability to problem solve. It also requires an adult learner able to adapt and continually improve one’s abilities and to regularly update one’s knowledge.

Yet the development of innovative primary care training had not kept up with

demand (Benade, 1992, Evian, 1988). The reasons for this are many and include gender inequity and professional resistance (Myburgh, 1989, Marks, 1995).

Resistance is seen both within and external to the nursing profession. "...the medical profession has firmly resisted changes in legislation and practice styles that would significantly enhance the nurse's role" (p. 14). Conflicts also existed historically about the role and scope of the primary care nurse.

### *The value of primary care training.*

Advanced practice nurses' ability to manage most conditions at the primary level is widely acknowledged in the literature (Wagstaff & Beukes, 1977, Duncan & Gear, 1977 Rothman et al, 2000). In an early assessment of the advanced practice abilities of nurses in primary care, Axton (1977) found that the nurse was able to adequately manage 90% of children at the primary care level. Coetzer (in Benade 1992) explained the general belief that a nurse clinician who has completed the CHAT course can manage 85-90% of patients' minor ailments.

Cameron (2003) reports that nurses generally feel well prepared to work in a primary care setting after completing this diploma. Through questionnaire interviews of nurses trained between 1982 and 2001, he showed that more than 88% of nurses felt that their diploma helped them to do this type of work with many going on to say that all district clinic nurses need this course and that more than half of the respondents were still working in a PHC setting (Cameron, 2003). Although anecdotal, this work highlights the perceived necessity of additional training to work in the PHC setting. Nurses who undergo primary care training show increased knowledge in primary therapy for common ailments (Pick et al., 1998). Diploma courses are generally considered of high quality, but add a year of full-time study.

This course has been renamed as a postgraduate diploma in Primary Care Nursing. The purpose of the qualification, as more recently described, is to enable the learner to provide comprehensive primary care services (Venter, 2004, ¶ 5). The course requires a full year of study (200 days) with emphasis on general disease conditions, clinical nursing in health assessment, treatment and care as well as health care systems (SANCb, 2004). The SANC examination for this qualification includes two papers, which are currently written in February or August each year as well as a practical examination conducted by the training institution (SANC, 2004a). Since this is a post registration qualification, meeting the requirements of SAQA, assessment is now outcomes based. This qualification includes the following outcomes:

1. Diagnose minor and common ailments
2. Prescribe appropriate treatment for minor and common ailments
3. Dispense the treatment for minor and common ailments
4. Manage childhood illnesses in an integrated manner (IMCI)
5. Apply specialist knowledge and skills in the primary care of individuals, groups and communities with maternal health problems
6. Apply advanced pharmacological knowledge to prescribe and dispense medication for individual clients
7. Assess, plan, implement, manage and evaluate primary care services at district, provincial and national level
8. Act as consultant about aspects of primary health care (Venter, 2004, Exit level outcomes).

A SANC approved certificate in Primary Health Care is also available. The guidelines for such SANC approved short courses are in line with SAQA

requirements for a national qualifications framework (NQF) level 6. These include program duration of at least 72 credits or 720 notional hours of learning (SANC, 1999). Certificate courses are generally of shorter duration than diploma courses yet are longer than the core competency program evaluated in this study.

### ***Primary care nurses in Soweto.***

One early attempt to redress racial inequity and to meet primary care needs in urban townships was the training of advanced practice nurses in Soweto. Wagstaff and Beukes (1977) developed a model in-service program to train pediatric primary care nurses in the late '70's. This program was competency based and made ample provision for ongoing learning and support within an urban setting. It laid a sound foundation for the nurse's role in managing common conditions and discussed legislative and doctor-nurse dynamics, which could support or hamper this role.

Truscott (1990) in a discussion of the development of the Soweto 'PHC' sister, wrote, "She is now clearly conceived to be in fact not a jack of all trades covering all aspects of PHC, as her rural counterpart has to, but a highly trained and sophisticated specialist in the clinical diagnosis and management of clients" (p.44). The desire in this urban township context for a "sophisticated" advanced practice nurse clearly unique from the rural primary care nurse generalist is evident. Also, the use of the term primary health care (PHC) above is limited and does not reflect the broad, community based term as commonly understood within the World Health Organization defined primary health care approach.

### ***Related Issues***

#### ***Authority to prescribe.***

Lack of recognition, gender control and role conflict is clearly seen in nurses' authorization to prescribe medicine. As a profession comprised largely of women, nursing has suffered from gender discrimination through lack of recognition and diminishing of the nurses' role. At the same time some nurses have limited the development of the profession through conflicting views on the appropriate roles and responsibilities, autonomy and authority of the nurse.

The South African nursing literature is replete with discussion on legal constraints on nurse prescribing (Bierman & Muller; 1994a, 1994b; du Preez, 1988; Geyer, 1998; Geyer, 2001). In 1977, Wagstaff & Beukes wrote, "Pharmaceutical regulations may, in future, require consideration and amendment" (p. 1087). Influential differences of view from those of Wagstaff and her Soweto colleagues were expressed. In the late 1980's, the executive director of the South African Nursing Association (SANA) noted:

In-depth knowledge of the scope of practice of registered nurses is essential. A nurse may *not* diagnose a medical condition, nor may she prescribe any medication. A nurse may diagnose a health need as defined in her scope of practice and may prescribe, provide and execute a nursing regimen to meet the needs of a patient (du Preez, 1988, p. 473).

While people debated the difference between the diagnosis of a medical condition and a health need, profound service demands were being placed on nurses to provide primary care in both peri-urban and rural areas. It is interesting to note that one impetus for the Soweto pediatric primary care nurse discussed above was Soweto's political unrest of 1976 and the complete lack of hospital curative services for nearly six months (Wagstaff & Beukes, Duncan & Gear, 1980).

Marks (1994) explains that the lack of doctors in the 1980's lead to legislative changes allowing nurses to perform medical procedures, including the examination of patients, as well as the diagnosis and dispensing of medicine when and where a doctor was unavailable. Section 38A amendment to the Nursing Act (Act No. 50 of 1978) specifically stated that nurses could perform an expanded role including diagnosis and prescribing, "...only whenever the services of a medical practitioner or pharmacist, as the circumstances may require, are not available" (SANC, 1999, p. 28, Geyer, 2001).

Geyer (1998) has provided an exhaustive review of legislative challenges faced by nurse prescribers in primary care and has called for flexibility regarding scope of practice and acknowledgement of nurses' important and lead role in achieving "Health for All".

In a more recent report, Geyer (2001) notes concern over continued confusion and weak legislation, which still does not enable nurses to diagnose and prescribe medicines adequately. Nurses are limited to "physical" assessment at the exclusion of mental health services, authorization is still tied to the absence of a doctor or pharmacist, which is in direct contradiction to national health policy and lastly, "There are no guidelines or regulations to direct the process of authorizing nurses to diagnose and prescribe. Furthermore it is not clear how many nurses are authorized to diagnose and prescribe or where these nurses are" (p. 21).

The murky legislative proviso of when and where a doctor is "unavailable" has lead to as much confusion as the difference between the diagnosis of a medical condition and a "health need". As Marks explained, no one would define what is meant by "unavailable" thus undermining the role and responsibilities of the primary care nurse.

As Petersen (2000) more recently stated, primary level nurses in South Africa

are "...placed in the invidious position of being responsible for the health care needs of the community in the absence of being invested with the necessary power and authority to carry out this task" (p. 328). Vague legislation is not all that affects nursing practice. Perceptions on what nurses may and may not do also limit the development of the primary care nurse's role (Bierman & Muller, 1994b).

Rothman et al. (2000) have shown the need for primary care drug therapy training. In an experimental study of registered nurses enrolled in the Gold Fields Nursing College PHC course, they showed 1.) Registered nurses lacked basic skills at diagnosis and treatment of common ailments prior to primary care drug therapy (PCDT) training and 2.) Nurses' diagnostic and treatment abilities could significantly improve with a competency-based PCDT training program. Although this study did not stratify for previous qualifications in community nursing, it revealed a significant unmet learning need in both the experimental and control groups prior to PCDT training.

### ***Legislative support for primary care education.***

Although the legislation around nurse prescribing remains a concern, there is strong legislative support for primary care education. The ANC National Health Plan (1994a) specified how health personnel would be reoriented to PHC:

The standard of total health care will be raised through a comprehensive system of continuing education, including reviews of the skills and competencies of health personnel" This plan also supports the development of "fast track training programmes" in priority areas such as diagnosis and primary level clinic care with much of the training of health workers occurring at the district and community levels (p.79, 80).

The 1997 *White Paper for the Transformation of the Health System in South Africa* included principles for the development of human resources in health:

1. A national framework for the training and development of health personnel will be established.
2. The skills, experience and expertise of all health personnel should be used optimally to ensure maximum coverage and cost-effectiveness.
3. Health personnel should be distributed throughout the country in an equitable manner (p. 54)

Furthermore, “There must be a programme of retraining and reorienting all existing health workers to the Primary Health Care approach. The aim is to train 25 percent of district health personnel by the end of 1995, and 50 percent by the end of 1997” (Department of Health, 1997, p. 54). The ANC’s Reconstruction and Development Programme (RDP) (ANC, 1994b) also called for the “complete transformation of health worker training” including the development of new short reorientation programs for personnel already in the health system (p. 50, 51). The need to train current staff in primary clinical care was specified and prioritized as critical to the overall improvement of health and development in the country.

In the late 1970’s, the Division of Continuing Medical Education at the University of Witwatersrand convened a workshop to discuss the nurse’s role in primary health care. This meeting concluded that although nurses are “already assisting doctors in providing primary health care”, they are stifled by insufficient training, lack of recognition, support and legal coverage which necessitates certain core knowledge for primary care (Beaton, McMurdo & Wilson, 1978, p. 331). Two

decades later, a working group on primary care nursing, sponsored by DENOSA and the Commonwealth Nurses Federation, recommended developing a re-training program for nurse-educators and nurses followed by revision of the nursing curriculum for basic training (Webber, 1995)

Progress in transforming nursing education has been slow but steady. From the training of advanced practice nurses in Soweto in the 1970's to the introduction of a comprehensive nurse training in 1986 to the work of DENOSA and others in the mid 1990's progress is being made to align the education of nurses with the health needs of South Africa.

***Medical education critically examined as well.***

Concerns about medical training and the primary health care role of the doctor in post apartheid South Africa have also been raised (Couper, 1997, Williams & Reid, 1998, Williams, Reid, Myeni, Pitt & Solarsh, 1999, de Villiers & de Villiers, 1999). In 1992, the then Director General in the Department of National Health and Population Development C. F. Slabber (1992) wrote about doctor's training, "His competence in curative medicine, as practiced in metropolitan areas, is high, but in rural areas, where there are no specialists, the newly trained doctors finds it extremely difficult to cope" (p. 388). Although anecdotal, Slabber goes on to say that the main manpower deficiency for a new health care strategy is the lack of primary care nurses. "Hospital care is still the mainstay of nursing" (p. 388). Thus in 1992, he summarized his department's three manpower concerns as 1.) Geographical mal-distribution 2.) Inappropriate training and, 3.) Unsuitable use of the various categories of health workers. Such criticisms have been echoed internationally as well. "Typically, the medical education of the doctor is curative-oriented and hospital-based, provided in

an institution where public health and community medicine are given little attention” (p. 296).

de Villiers & de Villiers (1999) discuss the window of opportunity which exists to improve the role and profile of family practitioners, including their role in a nurse-driven primary care service and as trainers. de Villiers, Bresick and Mash (2003) share their experience in competence model education for primary medical practitioners which has shown positive change in patient care and clinical skills. Collaboration between primary medical practitioners and primary care nurses is undoubtedly synergistic and mutually beneficial.

### ***Current Training Issues***

#### ***In-service training as a stopgap measure.***

Alternative approaches to improving competence include in-service training, often as specific classes within selective or vertical programs. Strachan (1999) contend that these programs, provided by a variety of role players, are often poorly coordinated. Moreover, they cannot entirely bridge the gap in basic competencies necessary for quality primary care delivery. As WHO (1997) stated, “The implementation of PHC continues to be weakened by over-reliance on separate vertical programs” (p. 3).

Topics for in-service training can be extremely diverse and unrelated (D. van Rensburg and N. van Rensburg, 1999). The profusion of courses has led both managers and nurses to complain that “there are too many training programs, and members suffer from information overload with no time to absorb the content or practically develop the necessary skills” (Drennan, 2002, p. 8). Given the considerable cost associated with training, a better understanding of the return on such

training investments is needed.

Although education initiatives have a logical role to play in improving the quality of care provided by nurses, piecemeal training cannot be seen to fully rectify nurses' basic lack of knowledge in clinical diagnosis and pharmacology. Core skills training may not be available to all clinic nurses prior to commencing work (pre-service training) in the clinic or even once they are in the service and thus a nurse's competence to work at the primary level can not be assured. Furthermore, the impact of a mix of training programs on outcomes (nursing knowledge, quality of service delivered, patient satisfaction) has not been adequately evaluated.

Harrison-Migochi (1998) identified training concerns as well as strengths. Lack of needs assessments as well as uniformity in coordination of training are two weak areas, while noted strengths of training initiatives have included focusing on high priority areas such as tuberculosis and sexually transmitted diseases as well as collaboration with academic and other training institutions.

Orientation programs or pre-service training is not widely discussed or available, but may be a partial answer to rationalizing clinic nurse training. Numerous resources and educational materials targeted to clinic nurses have been developed in Southern Africa (Kishuna & Orrell, 1997; Moller & Donohue, 1995; Smith, 1997; HSDU, 2001).

It may prove more effective from a service as well as cost point of view to equip a nurse with core knowledge and skills *prior* to her placement in the clinic setting. If district management teams and provincial PHC coordinators worked together to develop and implement such a pre-service training program, the burden of fragmented in-service training attempts may be reduced. Also, pre-service orientation

may diminish nurses' frustrations and feelings of inadequacy which both potentially lead to burn out (WHO, 1997).

***Community health nursing and primary care nursing; curriculum challenges and opportunities.***

Although there is considerable overlap in community and primary care nursing, two separate training programs still exist. A crude but useful distinction is that community nursing emphasizes health promotion and disease prevention and primary care nursing focuses on pharmacology and the diagnosis and treatment of common conditions. Prevention includes health education, family planning and immunization services, among others. Curative services include the diagnosis and treatment of common complaints and ongoing care of chronic conditions. Another way of stating the distinction is that community nursing focuses on the needs at the community level while primary care focuses on the health needs of individuals.

There is some discussion of integrating primary and community health care programs. In a descriptive and exploratory study of integrating primary care into community nursing curriculum, Vilakazi, Chabelia and Roos (2000) discuss a desire to incorporate the two disciplines. By conducting focus group discussions with nurse educators and community nurses they found that these nurses desire a greater emphasis on health promotion as well as clinical skills that allow nurses to function independently.

The author reviewed community health training programs for nurses subsequent to the fieldwork for this study, and found considerable incorporation of primary care skills in their curricula. The University of the Free State's post-registration diploma in community health nursing requires a full semester course in pharmacology (University of the Free State, n.d.) and the University of kwa Zulu

Natal (UKZN) provides a seamless integration of primary health care into their pre-registration four year integrated program. UKZN offers a course in preventive and promotive health in the second year of study where the focus is on the community as client, pharmacology is required in the third year and nurses complete this emphasis with a brief module on primary health care in the fourth year. This module on primary care PHC is described as a focus on “the role of the nurse in primary care clinics, where they have to diagnose and treat minor and common ailments (UKZN, n.d., ¶ 9). Geyer, (2001) in a discussion of nurses’ authority to prescribe states; “The Statutory Councils must identify the skills, training and accreditation of programs required to enable the professions to deliver the required services and these should be used as the basis for the authorization of nurses” (p.21).

The integration of preventive with curative services in primary care nursing necessitates both skills for curative services (history-taking, diagnostic, and management skills) and for preventive services (effective communication and public health expertise). “Student nurses should know from the beginning that they are going to be independent practitioners. Students must know how to assess diagnose and treat patients on their own” (Vilakazi, Chabelia & Roos, 2000, p. 43). This combination of knowledge, skills, and experience that is necessary to provide the full spectrum of clinic services, often in isolated areas, must not be underestimated.

Furthermore, primary care nurses are seen as leaders in the community, and their role extends beyond the confines of clinic walls. These many responsibilities, some long held by the registered nurse and others acquired by default, call for exemplary nurse clinicians.

*The need to examine clinical practice.*

There is limited empirical evidence from investigations of current PHC nurses' job practice or performance. Yet, there are some studies that suggest training and practice concerns. Mofukeng & Roos (1999), in an exploratory study of mobile health service, found many practices which patients favored. These included nurses' health education, immunization services and treatment. Yet, patients expressed concerns that they are not examined during family planning consultations and that babies are not examined. These findings were confirmed through observation. Unfortunately, there was no disaggregated information on nurse training, experience or qualifications given in this study.

Mbambo, Uys & Groenewald (2003) provide a detailed task analysis of current clinic nurse practice by nursing category. Using both a survey and non-participant observation of tasks, job demands and work setting, they found that most frequently completed tasks were history taking, prescribing and dispensing medication, documenting and record keeping, taking blood pressure and assessing height and weight. On average, clinic nurses completed 34 tasks per hour compared to 18 tasks per hour in the hospital setting. When clinic practice was compared across category of nurses, many tasks were common to both registered nurses (RN's) and enrolled nurses (EN's), including diagnostic tests, counseling and management, while RN's dominated in midwifery care, diagnosis and treatment, drug prescribing and dispensing and counseling. These authors found that nurses ranked prevention and promotion as the lowest task index. This was later confirmed through observation with no nurses being observed to move out of the clinic into homes or the community. Yet, the authors note that there are important barriers to prevention and promotion

activities in the community, such as no transport and pressures to deliver curative services at the clinic.

***The need to train more primary care nurses.***

In addition to too few nurses being trained in primary care there exists large inter-provincial disparity in where primary care nurses are situated. In a 10% random sample of clinics, Pick et al. (1998) found that +/- 80% of clinics in well-resourced Western Cape and Gauteng provinces had primary care nurses on staff whereas the largely rural and underdeveloped Eastern Cape had none (Table 4). Although this sample excluded mobile service and satellite clinic staff these results are striking. In fact, there is no reason to think that there would be more primary care nurses in such ancillary facilities. In a rapid audit of primary care nurses in kwaZulu Natal province, Drennan (2002) found that only 22% of nurses providing primary care services were specifically diploma-trained. This training gap has been worsened by the loss of nurses to higher wage careers overseas (Kline, 2003).

**Table 4: Number and percentage of clinics with at least one full-time primary care nurse and mean number of primary care nurses per clinic (1998)**

Province	Total Clinics	Clinics with at least one Primary Care Nurse # (%)	Mean Primary Care Nurses per clinic
Eastern Cape	66	0 (0%)	0
Free State	28	7(25%)	1.7
Gauteng	16	12(75%)	2.8
KwaZulu-Natal	31	21(67.7%)	2.6
Mpumalanga	24	6(25%)	1.7
Northern Cape	9	0(0%)	0
N. Province	45	11(24.4%)	2.3
North West	28	14(50%)	1.7
Western Cape	32	27(84.4%)	2.3
<b>South Africa</b>	<b>279</b>	<b>98 (35.1%)</b>	<b>2.3</b>

*Note: From Measuring Quality of Care in South African Clinics and Hospitals: Technical Report to Chapter 14 of the South African Health Review, by W. Pick et al. (1998).*

The current number of nurses with a diploma in community health nursing is 21,972 whereas the number of nurses holding a diploma in primary care is far fewer at

4,443. Currently, there are 388 nurses who have completed the shorter SANC approved certificate course in primary care (SANC, 2005).

The drain of nurses to more lucrative jobs overseas fuels the shortage of nurses, including PHC nurses. South Africa, although financially better off than most African countries, has also felt this “brain drain”. EQUINET, a regional network of professionals, policy makers and civil society, is working to catalyze efforts to promote social justice in health through research and policy analysis on human resource scarcity and mal-distribution. They explain that this geographical mal-distribution of health workers is a fundamental obstacle to improving health systems (Equinet, n.d.).

Hongoro & McPake (2004) identify a number of factors which have exacerbated the human resource scarcity, including greater demands precipitated by the emergence of the Millennium Development Goals, external pressures to increase access to HIV care in Southern Africa and the effects of HIV/AIDS on health workers themselves through decreased productivity, increased absenteeism and loss of life.

Dugger (2004a) explains that nurses leave because of low wages and grueling working conditions. This is especially true for rural clinic nurses who work in isolated and poorly built buildings. In a recent EQUINET editorial, the South African Municipal Workers Union (SAMWU), Municipal Services Project and the Industrial Health Research Group called for an investigation into the working conditions and hazards which exist for frontline health workers. They note concern about shortage of staff, subsequent burnout and the lack of adequate facilities and equipment (SAMWU, n.d., ¶ 4).

Britain’s nursing registers “show that the number of nurses being certified from Malawi, South Africa, Nigeria, Ghana, Kenya, Zambia, Zimbabwe and

Botswana -- all former British colonies -- has soared since 1999” (Dugger, 2004a). Many of the nurses leaving are the most highly trained and able to lead the primary care health system.

In an effort to stem this exodus, the South Africa minister of health recently agreed to allowances for rural private sector workers. She explained:

The allowances are unique: They combine, for the first time, to address the dual inequity in the distribution of health professionals -- between the private and public sectors and between rural and urban areas. They also apply much more widely than previous allowances, covering more rural areas and for the first time acknowledging the critical role of professional nurses in such areas (Tshabalala-Msimang, 2004, ¶ 4)

A research group, The Joint Learning Initiative, recently stated that in addition to such allowances “...rich countries must urgently take steps to slow ...fatal flows of nurses and doctors from poor African countries to Europe and North America” and that the continent needs a million more health workers (Dugger, 2004b, A18).

Hongoro and McPake (2004) mention concern about the focus on training highly skilled yet exportable workers, poor working conditions and a lack of continuing professional development as contributing factors and express a need for more research on strategies which promote retention of developing country health workers. They also note that, “...funding for investigations that could provide new data to distinguish between more and less promising strategies has not been forthcoming” and that more needs to be known about the “efficiency of alternative training strategies” (p. 1454). This inequitable distribution of well-trained health personnel contradicts key principles of equitable human resource development in the Department of Health’s 1997 White Paper (DOH, 1997).

### *Developments in Primary Care Training*

A number of important policy developments occurred over the course of this study. In 1998, as this research was being initially planned, the South African Qualifications Authority (SAQA) published regulations on National Standards Bodies (NSB) and registration of NSBs and Standards Generating Bodies (SGB). “These bodies will be responsible for the generation and recommendation of qualifications and standards or registration on the NQF” (SAQA, 2005, ¶ 5). Today, qualifications for nursing are advised by SAQA. This body is appointed by the Ministers of Education and Labor to oversee the development and implementation of the National Qualifications Framework (NQF). The NQF ensures registration of qualifications (SAQA, 2005).

The SGB for nursing was inaugurated in 2001, when this study commenced fieldwork. This 28-member body analyzes trends and policies both nationally and internationally to determine guidelines for nursing qualifications and divides nursing into pre-registration and post registration courses. Pre-registration qualifications are based on unit standards while post registration qualifications are outcomes based (Venter, 2004, ¶1-5). The South African Nursing Council has served as the Education and Training Quality Assurance Body (ETQA) for SAQA since November 2000. SANC, as an ETQA, accredits nursing programs, recommends new standards and qualifications and evaluates assessment by nursing education institutions. (Ramadi, 2003, ¶ 2)

SAQA has also proposed a new pilot program in nursing learnership. This program, to be implemented in all provinces, would enable career advancement from auxiliary nurse to enrolled nurse (both are NQF level 4), to professional nurse (NQF level 5), and post registration specializations (such as PHC) at NQF level 6.

Specialization is directed to high need areas including intensive care units; theatre, trauma and primary care nurses who are urgently needed to achieve the National Health Plan objectives (Joseph, 2005, Nursing learnerships, ¶ 1).

### ***Competence Defined***

The *National Qualifications Framework* [NQF] (1996) explains, "You show competence when you are able to combine the use of the skills, information and understanding necessary to a particular learning situation, and the essential outcomes at a required level of performance" (p.4). This can be further broken down into essential and specific outcomes.

*Essential* outcomes are general things we do and know which matter in all areas of learning such as communication skills and problem solving. *Specific* outcomes are specialized competencies (knowledge, attitudes, and skills) for a specific job (NQF, 1996).

In her extensive work with clinical nurses, Benner (1996) distinguishes the novice, competent, proficient and expert practitioner, using the following stages:

- Entering the Field: Advanced Beginner Practice
- The Competent Stage: A Time of Analysis, Planning and Confrontation
- Proficiency: A Transition to Expertise
- Expert Practice.

Benner has helped to uncover the nature of competence and excellence in clinical settings (Benner 1984; Benner, 1996). Benner's foundational work on the progression toward expert practice reveals the complexity and subtlety within the art

and practice of nursing. In her work on nursing expertise she discusses how nurses perform at a competent level. Benner sees competence as an early stage in the clinical skills development of a nurse. This stage is noted by improvements in technical skills but also clinical understanding, one's ability to organize work and an ability to predict the most likely progression of events in the clinical setting (Benner, 1996). Yet, recent efforts at competency model development have shown that there is much work still to be done in the field of model development and assessment of competence (O'Neill Hewlett and Eichelberger, 1999).

### *Developing a Framework of Competence*

Rice and Rapson (1999) suggest that the reason for developing models of competence is towards finding local solutions to human resource needs. They explain that such work should include input from key stakeholders and that the goal is to find, "...the right nurse for the right patients in the right setting at the right time" (p. 294). Gebbie and colleagues at the Columbia University Center for Health Policy (2002) support this and mention the importance of competency designation in defining performance expectations. O'Neill-Hewlett and Eichelberger (1999) explain that narrowly delineating nurse competencies is no easy task, especially when one moves from nursing theory to practice. For example, when a nursing task force in New Mexico attempted to develop precise standards for various levels and settings of nursing care, some members of the task force, "objected to the apparent reduction of nursing to a series of tasks, others believed that outlining tasks would help clarify and specify skills that must be included in training and educational programs" (Stephens, 1999, p. 299).

In a review of the literature on health worker performance spanning nearly four decades Rowe, de Savidny, Lanata and Victora (2005) discuss the lack of and urgent need for rigorous studies which evaluate the exact determinants of health worker performance. Some of the search terms included in their study were “clinical competence”, “health worker performance” and “nursing care”. Although not nursing specific in their review, they found that most published studies have important and relevant limitations such as small sample sizes and difficult to interpret performance measures. They recommend that performance measures become better classified (including collection and analysis) and that bias is better controlled for.

Within the South African nursing context, Edelstein et al (1998) provide a useful outline of the competencies new graduates need to function at the primary level. These competencies are referred to as “exit competencies”, most likely analogous to Benner’s advanced beginner stage mentioned earlier. These include a broad range of activities from managing common illness to counseling, understanding community dynamics and district level health teams. Edelstein’s work is a systematic attempt to look at learner outcomes as they relate to primary health care (PHC) delivery in South Africa. Yet, there remains little empirical evidence which shows the impact of health worker training on clinical practice.

### ***Competence and Standards***

The South African National Qualifications Framework [NQF] calls for the identifications of standards generating bodies (SGB’s) and the identification of standards for professions. Relevant examples of standards generating activities with important lessons learned are noted in the literature. In another effort to develop standards for various levels and settings of nursing care in New Mexico, USA, as

mentioned above, a Standards Committee was convened to identify standards for that state's nurses. Through broad consultation, this committee developed New Mexico's standards document for nursing. In defining these standards, conflicts on what level of nurse and how nursing work should be explained were raised. "After much discussion, the Committee decided to focus on standards upon entry into practice because the unique development of individuals and varying career trajectories make further differentiation more difficult" (Stephens, 1999, p. 299). Also, some members noted concern over the usefulness of defining tasks and skills.

Within South Africa, some discussion has helped to develop minimum standards for nurse's authorized to prescribe. Through a collaborative effort of the Department of Health, the South African Nursing Council (SANC) and other important role players, guidelines were drawn which require the nurse to be practicing in a primary care service, be registered with SANC (section 38A of Nursing Act No 50 of 1978) and must have completed a SANC approved primary care nursing program (Clinical Nursing Science, Health Assessment, Treatment and Care) (Geyer, 1998). Yet, there is still a call for Statutory Councils to further identify skills, training and program accreditation (Geyer, 2001).

In the last decade, the USA's Joint Commission on Accreditation of Healthcare organizations (JCAHO) has refocused standards from capability to actual performances affecting patient care. Standards include orientation, ongoing education as well as performance evaluation. This detailed review assesses three key areas: critical thinking/decision making, technical and interpersonal skills (Boylan & Westra, 1998). These moves by JCAHO have taken quality assurance to a new level that not only addresses ability but also validates job performance.

### ***The Importance of Assessing Competence***

Kruger and Dunning (1999) provide strong evidence of the need for an objective assessment of competence. They explain that novices have poorer meta-cognitive skills than experts and thus poorer judgment and self-assessment. Incompetence can be conceptualized as a matter of degree since there is no “magic” line that divides competent and incompetent individuals (Kruger & Dunning, 1999). Yet, in nursing some line of distinction between competence and incompetence must be drawn. This not only assures professional accountability but also a level of safe practice for the patient.

### ***Competence and Quality of Care***

Nurses who undergo primary health care training show increased knowledge in primary level therapy for common ailments. For example, in one study over 85% of PHC nurses knew how to manage diarrhea and use oral rehydration therapy compared to only 62 % of professional nurses without PHC training (Pick et. al 1998). In a study of the clinical skills of nurses in mobile health services, Mofukeng and Roos (1999) uncovered favorable and unfavorable skills. By interviewing patients, they found that mobile nurses demonstrate strengths as far as practice is concerned. For example, patients were pleased with nurses’ ability to attend to their health needs including family planning, immunizations and diagnosis and treatment of common illnesses. Yet, they also heard a number of quality concerns. For example, patients complained that no physical examinations were conducted for sick family planning patients as well as a lack of examination for minor illnesses and education about prescribed medication side effects.

Nonetheless, quality of care can be improved through training as well as through supervision. Supervision has been shown to sustain a change in health worker behavior (Bhattacharyya, Shafritz and Graeff, 1997). New training models such as the World Health Organization's IMCI training program devote considerable attention to intensive core skills training. Supervision is also seen as an integral part of improving nurses' skills and thus improving care given to young children. In addition, literature on internal evaluation supports the importance of supervision, with a stress on quality assurance rather than quality control. The essence of quality assurance is "...seen as a pervasive attitude coupled with methods of managing and motivating people" (Love, 1991, p. 79). Through the use of a standardized assessment tool, supervisors and evaluators can gauge changes in practice within core competency areas and provide immediate feedback on practice.

### ***Adult Learning Theories and Core Competency Training***

Recognizing nurses as adult learners is important to any program's success. This is especially true in training programs, which attempts to address prior unmet learning needs. Nurses who undergo primary care training bring many years of lived nursing experience to the classroom and practical setting. This experience adds richness and relevance to adults' study.

Malcolm Knowles was a leader in the development of adult learning and the discipline of andragogy; the art and science of helping adults learn. Andragogy is based on four assumptions, which help to differentiate it from pedagogy, the art and science of teaching children. Knowles' (1970) principles of androgogy assert that adults have distinct learning agendas. He emphasizes that adult learners are:

- Self directed
- Experience is a tremendous resource for adult learning

- Learner readiness is related to the development of the person's social role and
- Learner orientation is immediate and problem centered.

Androgogy asserts that adults are distinctly different in their approach to learning, their desire to solve problems and apply new knowledge. A number of adult learning theories provide nuance and enhanced appreciation of adult learning. Focusing on competence in adult learning acknowledges the adult learner's knowledge-seeking drive and their need to solve practical problems that relate to their profession or social role. Adult learners want to solve problems and apply new knowledge, are ready to learn when they assume new roles and to move from dependency to self-direction (Dover, 2004, ¶ 4; Merriam and Caffarella, 1999).

Competency based education is rooted in *behavioral learning theory* and is foundational in all adult learning (Merriam and Caffarella, 1999). *Social learning theory*, which combines elements from both behaviorist and cognitive orientations, hypothesizes that people learn from observing others. The theory of *constructivism* maintains that "learning is a process of constructing meaning; it is how people make sense of their experience" (Merriam and Caffarella, 1999, p. 261). An emphasis on experiential learning (practice, case studies, group work, reflection) could be summarized as a *problem posing* approach to learning (Winberg, 1997). This resonates with Knowles (1970) view that adults "enter an education activity in a problem centered frame of mind" (p. 48).

These above theories on learning are at times divergent and at times co-mingled. Yet, they all offer insight into how adults learn (Merriam and Caffarella, 1999). One pragmatic approach to realize increased competence is to understand and

incorporate a variety of learning strategies. Felder and Solomon (2004) provide a useful summary of learning styles:

<i>Active</i>	learners try things out and see what happens
<i>Reflective</i>	learners like to think it through first
<i>Sensing</i>	learners like to learn the facts
<i>Intuitive</i>	learners like to discover relationships
<i>Visual</i>	learners get a lot out of pictures, charts etc.
<i>Verbal</i>	learners get more from words
<i>Sequential</i>	learners learn in steps
<i>Global</i>	learners learn in jumps

Although they acknowledge it is impractical to design curriculum specific to each learning style they recommend that any distance type of training should ensure that the program is participatory and practical with a mix of rigor and freedom to respond to all learning styles. Identifying and incorporating adult learning styles and needs into program design and evaluation thus appears worth the time and extra effort required.

*Constructivism* appears particularly relevant to the registered nurse studying primary care. She (or he) is an adult learner with previous work experience often at the clinic level where their registered nurse skills have been stretched and their knowledge base tapped. Many primary care students will have a variety of experiences (for example, stressful, frightening or encouraging) which they bring to the learning milieu and for which they desire answers and greater understanding. One application of constructivism theory is in the use of *cognitive conflict*, encouraging the student to acquire new knowledge through a struggle between old and new ways of thinking.

### ***Reflection as a tool to promote competence.***

One specific example of applying adult learning theory to promote competence is in the use of student portfolios and of self reflection (McMullan et al.,

2003). Reflection can be included as an experiential learning tool for primary care nurse training in South Africa. Orlando's theory of professional nursing practice emphasizes the nurse's need to individualize patient care and to be reflective about the nurse-patient relationship (George, 1990). The usefulness of reflection as a nursing education tool has been discussed since the mid 1980's, yet most of the literature is anecdotal in nature (Burns and Bulman, 2000). Using reflection as a learning tool to promote competence is under-explored. This study intervention incorporates adult learning principles, including reflection, to promote competence.

### ***Incorporating Adult Learning Theory into Study Design***

Incorporating adult learning theories into assessment strategies as well as curriculum design is increasingly recommended (Massey and Osborne, 2004). A recent study in medical education showed improved student evaluation of a course's usefulness as didactic instruction decreased and self-study, case studies and small group work increased (Shaffer and Small, 2004).

The training program evaluated in this study was developed as a competency-based program incorporating experiential techniques (including reflection), individualized learning needs and problem-based education. This program will be discussed in greater detail in chapter III. This study thus has the potential to add to our understanding of reflection as a learning tool within nursing education.

### ***Study Hypothesis***

Based on the review of literature and application of adult learning and nursing practice theories, the following study hypothesis will be investigated in the study,

*Comprehensive core competency training, which focuses on essential primary health care knowledge and skills, which is rooted in actual situations experienced by the **primary clinical care nurse** and which is personal, experiential and **reflective** in nature, can significantly **improve** the nurse's competence. In this study competence is measured by observable clinical **behavior change and improved quality and accuracy in knowledge based test questions relevant to current National health priorities.***

Chapter III also elaborates on the methods used to test this hypothesis.

## Chapter III

### *Research Methods*

#### *Design*

A prospective quasi-experimental study employing qualitative and quantitative methods was used to assess the impact of a competence-based training program.

This took the form of a sequential pragmatic and exploratory process to collect data and expand understanding of the meaning of competence in South African primary care nursing. This research process included studies of what competence is, how it is measured and finally, the impact of competence based training on primary care nursing. This multi-phasic study used qualitative methods including reference groups and a Delphi process to develop a core competence tool. These findings were then employed as the basis for quantitative evaluation of a novel training program. The study was then completed using the qualitative focus group method. The use of mixed methodology has been widely discussed in the literature (Creswell, 2002, Tashakkori and Teddlie, 1998, Field and Morse, 1985) and was particularly suited for this study because mixed methods are especially appropriate when developing and testing an instrument (Creswell, 2002).

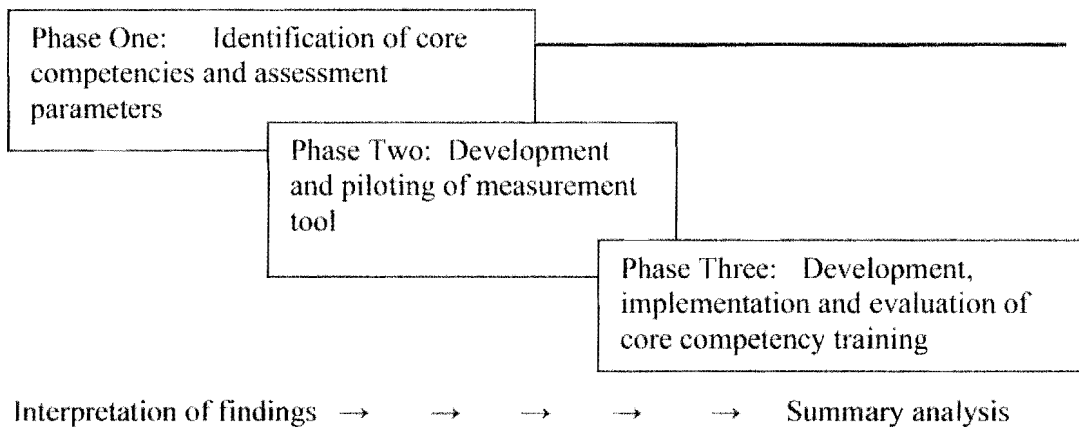
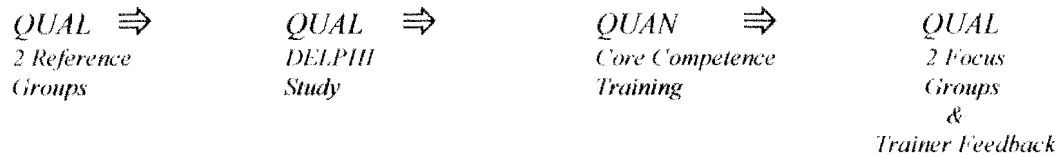
The mixed methodology research design provided an opportunity to address a series of under-explored and inter-related research questions. This study chose to identify core competencies of primary care nurses in South Africa, to develop a new measurement tool and to apply this tool to assess the outcomes of a novel core competence training program. The researcher felt that using only a qualitative or only quantitative approach would not adequately capture the learning opportunities evident in this study design. Despite the added duration and complexity inherent in

the use of mixed methods, the decision was made that such a study warranted this approach.

Figure 1 presents the three phases and mix of methods used to explore the nature of core competence as well as the development and testing of core competence training and evaluation for primary care nurses in South Africa. Phase one identified core competencies and appropriate assessment parameters. This led to phase two, the development and pilot testing of a new measurement tool. Phase three, included the development, implementation and evaluation of a core competency training program. As shown in figure 1, these three phases partially overlapped as analysis was ongoing and some new findings fed back into and affected the subsequent investigation. Ultimately, phase two was not closed since phase three also provided new findings about the usefulness and reliability of the measurement tool. Ethical considerations for the entire study are presented on page 104.

**Figure 1: Sequential exploratory study of primary care nurse competence<sup>1</sup>**

- QUAL represents the use of qualitative methods of data collection and analysis
- QUAN represents the use of quantitative methods of data collection and analysis



<sup>1</sup>Adapted from *Research Design Qualitative, Quantitative and Mixed Methods Approaches* by J.W. Creswell (2003). Thousand Oaks, California: SAGE.

## *Phase One Methods*

### *Identification of core competencies and assessment parameters*

The focus of the first phase was to establish a set of primary care nursing core competencies and to determine how they ought to be measured. To answer these questions, two approaches - reference group meetings and an international Delphi study - were employed.

#### *A.) Reference group meetings.*

The purpose of the reference group meetings was to assist in the development of a core competency framework specific to the needs of working clinic nurses in South Africa. Reference groups were used to access the wealth of knowledge and experience available from local nurses, doctors and educators.

Numerous examples of using reference groups for such a purpose exist. In the United Kingdom National Health Service (NHS), patients and the general public are recruited as volunteers to give their views and have their say on the current Welsh NHS and future NHS schemes (Cardiff Community Health Council, 2004, Public Reference Groups, ¶ 1, 2). In Australia, reference groups have been used in the field of substance abuse (Alcohol and Drugs Council [ADCA], n.d.) to draw upon “the collective wisdom and expertise of ADCA’s broad and diverse membership...which provides mechanism for obtaining input on key strategic issues” (Reference Groups, ¶ 1). A local example of the use of reference groups is the University of Pretoria’s Quality Reference Group for academic programs. This group is described as an ad hoc and advisory structure with the objective of creating connections between key

units and stakeholders at the University, the purpose of which is to tap into expertise that exists there (Malaza, du Toit, North and van der Merwe, 2004, Rationale, ¶ 1).

Reference groups were used in this study to begin the qualitative exploration of core competence. These reference group meetings could be described both as self-contained (Morgan, 1997), since they were the primary means of collecting qualitative data on the scope of core competence relevant to this study, and also as supplementary, because they served "...as a source of preliminary data in a primarily quantitative study" and "...to develop content of applied programs and interventions" (Morgan, p. 3).

Two reference group meetings were held in different urban centers, Durban and Cape Town. One was held at the offices of a non-governmental organization that supports health system research, the Health Systems Trust, and the other was held at a policy and research unit at a University. Each group consisted of a mix of nurse trainers, medical doctors and nurses involved in district health system development and primary care practice. People were purposefully invited and selected based on their knowledge and experience in district health system development and primary care as well as proximity to these two urban locations. Participants were briefed on the purpose and agenda of the meeting prior to their arrival. The aim of the one-day meeting was to bring together a select group of people with experience in the field of nurse training and district development in order to outline *essential knowledge, skills and attitudes* for nurses working in primary care settings.

Each group followed the same agenda although participants were encouraged to lead and develop their group's enquiry into core competence. The agenda addressed the following six objectives:

1. Present the rationale behind *Core competencies- what are they and what purpose they serve?*
2. Review current training and skills development within the context of district health system development.
3. Promote active participation of the group in the development of core competencies. In preparation for this participants were provided with readings prior to the meeting and were tasked with bringing a “list” of competencies to the meeting.
4. Establish priority competencies based on what we *know* and *value*.
5. Brainstorm on how to make core competencies measurable-implications for district driven development.
6. Lastly, to outline a way forward.

The results of this portion of the study (see chapter IV, beginning on page 106) were used to inform the Delphi study which followed.

### ***B.) Delphi study.***

The Delphi technique is a research method used to obtain input from a diverse panel of experts on practice-related problems (Powell, 2003). Developed in the late 1940's, this method has been described as making use of the “intuitive guesstimate of large numbers of experts” (Lindeman, 1981, p. 2). Opinions, predictions, and/or judgments are requested on a subject; the principal investigator then synthesizes these and a narrower set of questions/statements are fed back to the panel for further input. This cycle can continue until responses appear stable and/or group fatigue is seen (Bettcher, Sapirie & Goon, 1998; Polit & Hungler, 1991). The Delphi technique has been widely used in public health (Bettcher et al, 1998; Lindeman; Schopper,

Ammon, Ronchi and Rougemont, 2000) and is well suited for complex and multidimensional problems that would benefit from maximizing the judgment of experts (McKenna, 1994).

The strength of this method is that people can confidentially express controversial opinions as well as reflect on the opinions of others in a non-threatening, uninhibited manner (Schopper et al, 2000). Although this technique has considerable merits, concerns about reliability must be acknowledged, since this method is heavily dependent on participant selection, openness, panel size and the number of rounds used. Selection bias is also a potential problem (Schopper et al, 2000; Bettcher, Sapirie & Goon, 1998). Nevertheless, by using two rounds of questionnaires, Schopper et al. were able to establish convergence among health professionals and community leaders, leading the authors to state "...the Delphi methods is a useful tool to reach consensus on health priorities and corresponding activities among a variety of actors" (p. 342). Similar techniques have been used to generate and increase face validity of developing nursing standards and competencies in New Mexico (Stephens, 1999).

The Delphi technique was chosen as an appropriate method to build on and further refine the information gathered from the two reference group meetings. This technique allowed the participation by people separated by great distance yet whose experience and input was felt to be valuable. Although this technique did not allow for immediate debate and dialogue as with the reference group meetings, it allowed time for the researcher to synthesize information and return to the participants for greater depth and specification of enquiry.

Gebbie et al. (2002) have recently used the Delphi technique followed by focus group discussions to identify competencies for emerging areas of practice such

as emergencies and disaster preparedness. To help provide a framework for this process, the International Council of Nurses (ICN) recently published a framework and implementation model for competencies for the Generalist Nurse (Alexander & Runciman, 2003; ICN, 2003)

The aim of the Delphi study was to conceptualize a novel measurement tool for the core competencies produced by the reference groups. Two tasks were used to meet this objective.

1. To gain consensus on what is meant by a competent primary care nurse
2. To identify measurable competence criteria

The Delphi study questions shown in Table 5 explored aspects of competence, including the topics of “core” competence, competence-based training and competence assessment.

**Table 5: Delphi Study Questions**

<b>Question 1:</b> Can training around core competencies yield a “safe practitioner” more quickly than traditional methods?
<b>Question 2:</b> Should a truncated training program look at both clinic and community-based needs?
<b>Question 3:</b> In one sentence, define a competent primary care nurse.
<b>Question 4:</b> Do you feel the competencies listed in figure 3 are “core” competencies? Please modify, add or delete as necessary.
<b>Question 5:</b> Do you feel that the list of core competencies manifested in specific programs (e.g. maternal-child health) could be a helpful way of assessing competence?

***Sample.***

The Delphi technique allowed for the sample to be drawn based on reputation and experience. Geographic distance did not limit selection of participants.

Recognized experts actively working in nurse training, primary care and district health system development were asked to participate. Experts were identified based on their publications, practical experience and familiarity with nurse training in under-resourced settings. After the first 4 individuals were identified, the snowball technique was used to recruit additional experts. A minimum of two iterations was needed to use this method.

***Setting.***

The entire process of inquiry using the Delphi technique was completed via correspondence. Methods used to collect data included traditional mail and electronic

mail. Telephone calls were also used to encourage participation and to remind participants of deadlines. Analysis of the Delphi is presented on page 110.

### ***Phase Two: Development and piloting of the measurement tool***

The second phase of the study included the development of the measurement tool to assess primary care nurse competence. This phase made use of input gained in phase one as well as literature on tool development for education purposes (Munn & Drever, 1995). The complete tool is presented in Appendix A.

The tool, which later became separated into two distinct parts, began as a comprehensive assessment, including both observation of nurse's clinical performance and their knowledge base. The draft tool was developed largely on information gained from the reference groups and Delphi study. Prior to piloting the tool, feedback was elicited from professional colleagues within district health system development, which led to the inclusion of questions specific to the management of clinic finances. Care was taken to incorporate assessments for each of the competencies identified in phase one. By reviewing current primary care standards (e.g. the essential drugs list) and priority programs, it was possible to ensure that the assessment questions were relevant to current practice standards.

A Likert scale was chosen as the primary measure of observed performance. This scale has been used extensively in South Africa with doctors working in primary care and was recommended by a colleague as a feasible and appropriate measure to use (S. Reid, personal communication, October 1998). Where necessary, performance was also assessed using clearly defined dichotomous variables. For example, "Did the nurse perform X or assess Y?" Such measures elicited a simple YES/NO response ready for analysis. Finally, the knowledge base questions were

designed to reflect current priority programs and were presented as short answer questions. Further details on the tool are presented after the results of the pilot study (page 78).

### ***Pilot Study of the Measurement Tool***

The measurement tool was piloted prior to phase three. The pilot study was conducted in early 2001 in Impendle Pholela Underberg, a rural health district west of Pietermaritzburg, kwaZulu Natal. This site was chosen as the pilot site because district-based primary care training had recently been conducted with all clinic staff, but no formal follow up evaluation had been done. The district health management felt that the evaluation would provide important feedback about their recently completed district-based training. This pilot therefore served a dual purpose of piloting the measurement tool developed in phase one, as well as meeting the district's need for formal evaluation of their training.

The pilot study was coordinated by the district facilitator for an NGO Programme, the Initiative for Sub-District Support<sup>2</sup> (ISDS). There were two evaluators who collected the data for the pilot. One was a nurse trainer from the local nursing college and the second was a nurse trainer within the ISDS program.

The number of nurses evaluated in the pilot was nine (n=9). On average, each evaluation took one and one half hours to complete. The evaluators said that their time was lengthened by the nurse's need to verbalize work frustrations, as well as extra time taken to teach or exchange information. This was particularly the case if

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<sup>2</sup> The Initiative for Sub-District Support (ISDS) is a program of facilitation and technical support to select district health systems throughout South Africa. The ISDS program is run within the Health Systems Trust.

the nurse “might be a danger to the client.” This initial sample took three days to complete given the poor roads and considerable distance between rural clinics.

After completion of the pilot evaluations, a meeting was arranged to obtain formal feedback from the evaluators and pilot study coordinator (the ISDS facilitator). The feedback focused on necessary changes that would need to be made to the tool. Common reasons for changes were question ambiguity and logistic constraints. The primary change made to the tool after the pilot was to separate the tool into two parts. Those questions that a nurse could complete alone were removed and put into a separate self-test. This allowed the time required by the preceptor to be reduced and thus increase the feasibility of the tool being used in busy working clinics.

### ***Findings from the Pilot Study***

Although the pilot evaluators felt that it was difficult to make clear statements on some competence areas, the nurses' examined received an average overall competency rating of 3 (equivalent to "Can do with supervision" on a Likert scale). Within this small pilot sample, nurses either performed effectively or inadequately, with one evaluator commenting that some nurses were “strong” and some “weak” despite the same training.

This tool was able to evaluate a number of important areas and provide detailed description of current practice. It showed that almost all nurses were able to recognize normal from abnormal signs, yet the quality of diagnosis needed to be improved. Use of non-specific diagnoses was still common and while some nurses were able to recognize chronic conditions, others missed the diagnosis in the same

patients. Most nurses were able to assess the *road to health*<sup>3</sup> child card for immunization status, but did not do so for weight gain or probing the mother about the child's diet. Yet, given the sample size, there were not enough children to be assessed, with 4 out of 9 nurses not having a child to see when the evaluator was present. In addition, the quality of sexually transmitted disease (STD) treatment using the syndrome approach could not be assessed because no STD patients were available at the times of evaluation. This tool therefore appears limited by timing and availability of patients, especially if evaluators are not based at the same clinic and come to the clinic for limited and fixed time periods. Therefore, to work properly, this tool requires a sufficient spread of patients to enable assessment across all competency areas.

This instrument assessed many areas of care. For example, it showed that the pilot nurses maintained privacy, and they demonstrated patience and an accepting body language. Many positive communication/counseling traits were identified, such as greeting the client, showing empathy, respect and honesty, as well as questioning effectively. In spite of these positive traits, the tool also identified a need to improve active listening. No negative communication traits such as being judgmental, critical or giving orders were identified. Pilot results are provided in Appendix B.

The pilot study and follow up meeting with evaluators made it clear that future evaluators would need detailed instruction before conducting the evaluation. Pilot evaluators recommended taking time to discuss and develop consensus on "what to expect as a minimum standard." They suggested that future evaluators be instructed to question the nurse along with the direct observation. Suggestions on timing and

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<sup>3</sup> The *road to health* card is a tool produced by the Ministry of Health to assess the health status of a child from birth to age five. This patient held record commonly includes vital health information such as birth history, immunization status and weight for age. When used correctly and consistently it provides an excellent record of overall weight gain.

sequence were also provided. Evaluators will need to complete questions on patient satisfaction immediately after the nurse completes the patient consultation. (The evaluator will need to leave with the patient to complete this portion of the tool in privacy.) Lastly, they stressed that primary care nurses should know when the evaluation will be done and generally what to expect during it.

### ***Structure of the tool.***

As mentioned above, the most significant modification required of the tool following the pilot was to separate the assessment into two parts. This was done to reduce the time needed for the observation by an evaluator/preceptor. Time was reduced without eliminating important topic areas by dividing the tool into two parts. Part One became the observation component and Part Two included all questions which the nurse could complete on her own in the form of a self-test.

The observation tool was a structured assessment completed by the evaluator/preceptor using clear guidelines on key traits, skills and nurse/client interactions to be observed. The observation tool assesses the nurse's ability to respond to a patient in a holistic manner, including ability to communicate effectively, evaluate a complaint, assess vital signs, perform a physical examination, assess warning signs, formulate a specific and accurate diagnosis, and develop a treatment plan. Assessment methods include checklists of performance criteria for all of these areas as well as performance criteria for general communication ability and attitude (Quinn, 1988).

Included in the observation instrument were discrete observation parameters (Skill completed...Yes/No) as well as a performance assessment using a Likert Scale.

This scale has been used by other primary care evaluators and was recommended as useful and appropriate for this study by the Phase One Reference Group meetings.

### **Likert Scale for Performance Assessment**

- Can practice independently and can teach (5)
- Can practice independently (4)
- Can do with supervision (3)
- Knows something but needs further support (2)
- Lacks basic knowledge of the topic area, needs immediate support (1)

In addition, a series of open-ended questions were also asked to assess judgment, understanding of the catchment area, community involvement and access to care issues. Information was collected from the nurse on clinic management as well as use of essential drugs and rational drug use. A review of the actual stock and stock card records of the nurse's clinic covered the questions on management. Lastly, two questions were asked of the patient to assess patient satisfaction.

This observation tool is different from a traditional observed, simulated, clinical exam since emphasis is placed on a real nurse-patient interaction and focuses in detail on one complete visit rather than a series of disparate evaluations or activities. After the observation was completed, an overall rating for each of the nine competency areas was assigned by the preceptor and followed by comments on the strengths and areas of improvement for each nurse (Appendix A, Part 1). Preceptor training and issues of inter-rater reliability are discussed below.

The self-administered test is made up of 27 questions (Appendix A, Part 2). The questions use a variety of assessment methods including studies, interpretive

items, short answer and “true/false” style questions (Quinn, 1988). Each question is worth one point except for three questions that were given higher value. The question which asked for detailed comment on a child’s growth was given three points and the two questions on management of sexually transmitted infections were assigned two points each. Thus, the maximum score possible was 31 points. This increase in weighting for these three questions was justified by the greater amount of information required to answer these three questions correctly and completely.

The final tool covered all core competencies as identified in Phase One. As is summarized in Table 6 and presented in its entirety in Appendix A, numerous items were used to assess each competence area. A number (CC1-9) precedes each question or set of questions and denotes the core competencies assessed through each observation or test question (Appendix A). Special emphasis was placed on assessing competence within the delivery of priority services including syndromic management of sexually transmitted diseases, tuberculosis programs, and maternal-child health.

The observation tool is longer than the self-test but is able to collect a rich array of both quantitative and qualitative data. This was especially true for core competency one, problem solving (including history taking and examination skills), which is a complex and multidimensional competence area. There was also some overlap in what a question could assess. In other words, some questions assessed more than one competence area. This was particularly true for core competencies 4 and 7 for which there is considerable interrelatedness.

**Table 6: Breakdown of measurement tool by assessment method**

<b>Core Competence (CC)</b>	<b>Assessment Method</b>	<b>Number of Questions</b>
CC1: Problem solving	Observation tool	25
	Self test	0
CC2: Managing common condition	Observation tool	3
	Self test	6
CC3: Rational drug use	Observation tool	4
	Self test	0
CC4: Communication & counseling	Observation tool	10
	Self test	1
CC5: Referral practices	Observation tool	3
	Self test	9
CC6: Accessing and using information	Observation tool	2
	Self test	7
CC7: A caring and confident approach	Observation tool	2
	Self test	0
CC8: General clinic management	Observation tool	10
	Self test	2
CC9: Community orientation	Observation tool	10
	Self test	1

### ***Assessment of the Measurement Tool***

This study chose to use a new measurement tool for the following reasons. Because this study's competency framework was a novel development, a standardized assessment tool that included all the competencies listed in the framework was needed. Also, a new tool was required that was not only applicable and feasible in the real primary care setting, and relevant to current public health priorities, but would thoroughly explore the nature of competence and how a nurse works through the patient consultation from beginning to end. No tool which met all of these requirements was found either in the literature or in practice.

Because of the novelty of the tool developed for this study, considerable attention needed to be given to assessing the feasibility, reliability and validity of this new tool. The pilot study showed that the tool was feasible in the working clinic

setting and acceptable to both nurse evaluators and nurses being assessed. The small pilot sample did not allow a further analysis of the reliability and validity of the tool.

These aspects are evaluated and discussed further in Phase Three.

### ***Blind versus un-blind evaluation.***

Participants were observed by their preceptor and completed a self-test and questionnaire both before and after their training. The observation of participants and the reference group was not blinded. There were two reasons for this. The first reason was a practical one. Participants completed this training alongside a local preceptor and were located throughout large geographical areas. All training and observation occurred in their work settings, which were predominately rural areas spread over many health districts. Transportation constraints and large distance between sites would have made it difficult, if not impossible to have outside preceptors come to each site to conduct blinded evaluations. It would have been improbable that blinded evaluators from within the clinic or wider district could be found, as colleagues and supervisors would most likely be aware of who had undergone training. Furthermore, the intent of this study was to be as close to real world conditions as possible for implementation inference. If, as is hoped, districts will use the tool in the future, this is the most likely way in which it will be implemented and evaluated.

Although an un-blinded evaluation risked the introduction of observer bias, many of the items on the assessment were dichotomous variables reducing the chance of subjectivity being introduced. Also, the self-tests were scored by the researcher, not the preceptors, and were therefore evaluated independently of the observations.

At the time of scoring, the self-tests of cases and controls were blinded to the researcher.

The second reason for an unblinded observation is that in a study which aims to find novel ways to improve working nurses' competence, there are benefits to using an internal (unblinded) evaluation. The reduction in student anxiety is one such benefit. Also, the internal evaluator will know firsthand what unique skills and abilities are needed for working in their specific geographic area as well as local community issues. Their personal understanding of what is needed in their area has potential to add validity to the competency assessment tool. This is especially true with the sections of the assessment that ask about community involvement as well as prevalence of certain conditions in their area. Love (1991), in a discussion of the benefits of internal evaluation, asserts that such evaluation extends beyond the individual and serves to improve the abilities of local managers, as well as to help managers and staff see for themselves where they are strong and areas where further support and intervention are needed. Internal evaluation also has the potential to improve advocacy on behalf of nursing needs locally as well as to improve support of ongoing nurse training needs.

### ***Pre and Post Training Questionnaires***

In addition to the objective measurement tool (observation and self-administered test), pre and post intervention questionnaires (a subjective self-rating) were completed by participants. The pre-training questionnaire also included a series of questions on the nurse's work experience, formal professional education and recent in-service training. In-service training in the last six months was compiled to allow the researcher to better understand the level and types of in-service programs

currently being used. Nurses were also asked to respond to the nine core competencies including whether they reflect current work needs.

The bulk of questions centered on the nurse's own assessment of his or her core competence using the Likert scale described on page 81. Specifically, nurses were asked to rate themselves on each core competence immediately after completion of registered nurse training, after completion of a post-basic qualification course and their current level of competence. Since it has been shown in other fields (Kruger & Dunning, 1999) that self assessment can be over and under-rated, a self assessment of competence would provide useful insight into the ways nurses' view their own skills and abilities. Finally, they were asked to respond to the priority programs addressed in the core competence program and whether they felt their professional learning needs were met. The full pre-training questionnaire is provided in Appendix C.

The post-training questionnaire used the same format for rating the nine core competencies. In addition to this final rating of ability by both training participants and the control group, four additional questions were asked of the nurses who completed the core competency training. These four questions were:

1. What did you find most helpful about this program?
2. If you could remove something from the course what would it be?
3. How do you feel you have changed during this program?
4. Please feel free to write any other comments.

Once these tools were developed, phase three, which included the implementation and evaluation of core competence training, commenced.

### *Phase Three*

#### *Core Competency Training and Evaluation*

The third and final phase of this study was to develop, implement and evaluate a core-competency training program in four health districts.

#### *Development of the Training Package*

The training manual was comprised of eight modules, which covered the nine core competencies (Two competencies were combined into one module). The training manual used a variety of learning methods appropriate to the qualified nurse and adult learner. Expected learner outcomes were provided at the beginning of each module and a variety of activities and suggested practice sessions were offered. Possible activities included case studies, role-plays and exercises for small group and/or self-study. The needs of a variety of learning styles were taken into consideration and students were encouraged to adapt the manual to fit their own learning needs as well as the health priorities in their community.

The training package, including a manual and study guide, emphasized an experiential learning encounter through the use of practical sessions, case studies, group work and carefully constructed reflection questions, which represent a problem-posing approach to learning (Winberg, 1997). The program required nurses to think about the issues they experience in the work setting and encouraged critical personal reflection. Nurses were encouraged to learn by observing others while working side by side with a preceptor in the clinic work setting.

One noteworthy aspect of the manual was the inclusion of carefully developed reflection questions. These questions, provided throughout the modules, encouraged

students to personalize and possibly internalize their learning, as discussed in Chapter Two. These questions also served the purpose of encouraging critical analysis of what the student was learning and how this learning could impact one's ongoing learning needs and current work. The training manual is provided in Appendix D and the study guide is presented in Appendix E.

Students, working with identified preceptors, were instructed to complete the program within 6 to 8 weeks of part time study, as all students were working nurses. Based on previous training experience, it was felt that the program would take approximately 9 days (72 hours), not including additional time for reading and self study.

The training package included the following primary resources:

- Strasser, S (2001). *Empowerment through Education; A District Level PHC Orientation Programme for Clinic Nurses*. Training Manual and Study Guide
- Keeley, D. (1989). *History Taking and Examination for Primary Health Care; A Booklet for Clinic Nurses*. Harare, Zimbabwe: ZEDAP (adapted with permission)
- Smith, S. (1997). *An introduction to the curative aspects of primary health care*. Glenstantia, Pretoria, South Africa: Author.
- Kishuna, A. & Orrell, C. (1997). *Rational Drug Prescribing Training Course; Training Manual*. Durban, South Africa: Health Systems Trust.

Additionally, participants were instructed to make use of the South African Essential Drugs List and Standard Treatment Guidelines.

## ***Implementation of the Training***

### ***Design.***

The study design for this phase of the project was a cross sectional study of the impact of core competence training.

### ***Population.***

The participants were a convenience sample drawn from the population of registered nurses in South Africa. As of 2003, there were 96,715 professional nurses registered with the South African Nursing Council (SANC) of which 41,563 were in located in the Public sector (HST, 2003c, Indicator Data). As of December 31, 2004 the provisional statistics for the number of professional nurses with a Diploma in Community Nursing Science, Health Assessment, Treatment and Care (CHTC) was 4,443 nurses. The number of nurses with a SANC approved CHTC short course certificate [see earlier terminology on page 38] was 388 and the number of professional nurses with a Diploma in Community Health Nursing (CHN) was 21,972 (A. Green, SANC, personal communication, January 17, 2005). Table 7 displays a breakdown of the number of nurses with these qualifications by gender and by percentage of the total number of professional nurses.

**Table 7: Qualification by gender and as percentage of total public sector professional nurses**

Qualification	Female	Male	Total (% <sup>a</sup> )
CHTC Diploma	4,189	254	4,443 (11%)
CHTC Certificate	372	16	388 (0.9 %)
CHN Diploma	21,406	566	21,972 (53 %)

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Note. <sup>a</sup> The values represent percentage of total number (41,563) of professional nurses in the public sector setting

Data on race and gender were not collected on the study sample because of the homogeneity of the study group. The overwhelming majority (>95%) of nurses in the clinics where the study was conducted were known to be South African black women, and the study sample can be regarded as being made up of black female nurses.

### ***Setting.***

Four sites, within the Republic of South Africa, took part in this study. Choice of study sites was determined by willingness of district managerial staff to participate and trainer availability. This was essential given the considerable amount of time, cooperation and human resources needed to successfully implement and evaluate this training.

### ***Setting #1 North West Province.***

The first site was located in the North West Province. This site was self-identified by a medical doctor who worked and was actively providing in-service training to nurses in this district. In addition, this doctor had expressed interest in earlier publications from the initial phases of this study as well as in testing out this type of training. This medical doctor served as principal trainer and facilitator of the core competency program in this district, although other nurse preceptors were involved in the training and evaluation.

The site includes a village of 50,000 inhabitants, situated 70 kilometers north of the city of Pretoria. It is part of a larger health district, which has 330,000 inhabitants and forms part of the North West Province. The participating nurses came from clinics within this district. The area is described as primarily rural with some evidence of urbanization. A few homes have electricity and running water inside, yet most use pit toilets and receive water from a communal tap. A high unemployment rate (35%) exists. Those with jobs regularly commute to Pretoria or Johannesburg.

### ***Setting #2 Free State Province.***

The second site was in a health district in the Free State province. This district includes a small town as well as a sprawling urban township (population 70,000) and peri-urban/rural villages with 250,000 inhabitants. This site has the lowest average income in the province (Petzer, n.d. ¶ 20). Like site one, high levels of unemployment and impoverished living conditions exist.

### ***Setting #3 Limpopo Province.***

Two sites within the Limpopo Province also participated. Limpopo Province is located in the northern and northeastern part of South Africa. It shares international borders with 3 countries: Botswana, Zimbabwe and Mozambique. The province is

situated between major business and business trade centers in the South (Johannesburg and the port city, Durban) to the international trading partners to the north (Limpopo Provincial Government, 2004a, ¶ 2).

The province's four districts include territory that was formerly part of the independent homelands<sup>4</sup> of Lebowa and Venda, as well as the well-known Kruger National Park (Limpopo Provincial Government, 2004b, ¶ 1-12).

Key priorities cited by the provincial department of health include control of communicable diseases, maternal and child health services, staff morale and improving access through mobile clinic points, 24-hour services and improved security (Limpopo Provincial Government--Department of Health and Welfare, 2004, ¶ 5).

### ***Setting 3; Site 1.***

The first site in Limpopo province was located in a sprawling township approximately 60 kilometers from Pholokwane, the provincial capital. It was chosen because of links to the Initiative for sub-district support (ISDS) program. The ISDS facilitator for this district agreed to participate and arranged initial planning meetings with the district management staff as well as with potential preceptors.

### ***Setting 3; Site 2.***

The second Limpopo site was a primary care nurse training school located in a rural town. This training school works throughout the province and serves students and preceptors from all four districts. The training and evaluation therefore was

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<sup>4</sup> Independent homelands, known as Bantustans, were areas set aside for black South Africans with varying degrees of autonomy. Land set aside was often less arable and terrain more rugged. Residence of independent homelands gave up the limited rights afforded under the Apartheid regime. For further information see [www.answer.com/bantustan](http://www.answer.com/bantustan)

carried out in a variety of rural health districts throughout the entire province utilizing decentralized diploma-trained preceptors.

### ***Sample.***

Criteria for entry into the study were that the participant had to be (a) a professional nurse who (b) had not yet undergone a diploma level primary care course and who (c) was employed in the public sector within one of the sampled district health systems.

A non-probability convenience sample was identified based on the above criteria. While a randomized control trial would have been the optimal study design to assess effectiveness, this choice was made because the logistical constraints of program development, training and evaluation within functioning health systems rendered true randomization of participants unfeasible. Selection of subjects for participation in the training had to be placed under the control of the health district authorities since they hold the authority to approve nurse participation in any training program and the time away to attend the orientation day. Therefore, such a non-probability sample, as well as a lack of internal randomization, although not optimal, was unavoidable.

### ***Sample size and sample characteristics.***

Sample size estimates were calculated using Epi Info 2000 using 80% power and an  $\alpha$  of .05. Assumptions used to calculate this sample size included estimates of the number of nurses per clinic and number of clinics per district. Also, the effect of clustering was taken into account since more than one nurse per clinic was likely to participate in the training (design effect). A larger number of controls was sought to

account for this design effect. Sample size was therefore overestimated to minimize the clustered effect of nurses in the same site behaving / performing similarly which could have an affect on the exposure – effect analysis. The sample size estimates were therefore doubled to 60 nurse participants (nurses who receive core competency training) and 90 controls (nurses who do not receive this specific training).

The control group was made of like nurses who lack formal primary care training. This group was comprised of nurses who were entering the one-year diploma course at the final study site as well as a group of clinic nurses who attended a health promotion workshop. All controls came from setting three.

### ***Preceptors.***

Preceptors were professional nurses with a minimum of a diploma in Clinical Nursing Science: Health Assessment, Treatment and Care. The majority of preceptors had completed the SANC Diploma in Clinical Nursing Science, Health Assessment, Treat and Care as well as an additional preceptor's orientation. Two preceptors had completed a certificate level course. Thus, the vast majority of preceptors were professional evaluators with special skills in primary care as well as precepting. These preceptors' evaluation skills were therefore utilized for observation and evaluation of nurse performance in this study.

Additional training for being a preceptor is routinely provided at one of the study sites. This program is run over the course of six weeks. Part of the preceptor training is learning to conduct formal assessments of clinical performance and each preceptor is evaluated on his or her ability to assess a student according to pre-established assessment criteria. Evaluation of clinical precepting skills within this six week program includes evaluating a student on history taking, examination, and management, including drug and non-drug management and follow up care.

Preceptors are assessed on accuracy of observation, thoroughness of care and ability to assist the student to establish a correct diagnosis. They are also assessed on how well they observe and support appropriate nurse-client interactions as well as helping the student to identify his or her strengths and weaknesses. Preceptors are also provided with continuing education.

Although the majority of preceptors involved in this core-competency training program came from this study site, preceptors who came from other sites did not have such training. In lieu of this, all preceptors for this program were provided with the training materials listed on page 88 as well as the opportunity to review the course materials and evaluation instruments with the researcher either in a face to face meeting or a one day workshop.

### *Evaluation of Training*

Table 8 displays the timeline for data collection from before training (pre-intervention) to after training. Pre- and post- intervention assessments were meant to occur immediately before and after training. Yet, given the nature of this study and distance between participants, preceptors and the principal investigator it was not possible to ensure that this occurred.

**Table 8: Data collection timeline**

<i>Pre-intervention</i>	<i>Post-intervention</i>	<i>6 month follow up</i>
<b><u>Training Group</u></b>		
Questionnaire Core Competency 1. Self Test 2. Observation	Questionnaire Core Competency 1. Self Test 2. Observation	Focus Group Discussion
<b><u>Control Group</u></b>		
Questionnaire Core Competency 1. Self Test 2. Observation	Questionnaire Core Competency 1. Self Test 2. Observation	
<b><u>Trainers</u></b>		
	Trainers' questionnaire	

### ***Data Collection and Analysis***

Competence was assessed before and after the completion of the training program. Participants were observed by their preceptor pre and post training and all participants were instructed to complete a questionnaire and self test both before and immediately after training finished. Although participants were encouraged and reminded to complete the observation, questionnaire and self-tests, they were found to be inconsistent in carrying out these tasks. Further discussion regarding response rates are found in chapters 5 and 6. Participants in settings one and three also had the opportunity to participate in follow up focus group discussions. An independent social scientist and medical doctor/primary care trainer conducted these focus group discussions at least six months after completion of training.

Data was analyzed using both qualitative and quantitative methods. Qualitative indicators focused on the perceptions of participants after the training regarding their role as clinic nurses, as well as opportunities for and barriers to competence attainment. Such data were obtained through a post training questionnaire as well as the two follow up focus group discussions. Thematic analysis of the questionnaires and focus group discussions included coding for common themes.

### ***Quantitative Analysis***

Quantitative analysis focused on the difference between the training and control groups with regard to levels of core competence before and after training. To evaluate the difference between cases and controls, analysis examined overall competence as well as competence in each core area as well as quantitative analysis of the completed questionnaires. All of the tests used, including their purpose and the

data assessed, are tabulated in Table 9. All quantitative data were analyzed using SPSS 12.0 using an  $\alpha$  of 0.05 cut-off for statistical significance.

Fisher's exact test was used for cross tabulation of categorical variables on the pre-training questionnaire. Specifically, the intervention and reference groups were compared on three questions related to core competency training needs. The reference and training groups were compared using the Mann-Whitney test on self-assessed competency ratings both pre and post training. The Mann-Whitney test was chosen because ratings were non-normally distributed. Final quantitative analysis of paired ordinal data on the questionnaire was done using Spearman Rank-Order correlations followed by linear regression analysis of selected variables (group, years as a registered nurse, years working at a clinic and number of in-service programs in last six months).

The self-test and observation portions of the assessment were similarly analyzed. The total points (total score) attained on the self-test were used to compare the two groups. Observed performance was assessed using the Likert type rating scale discussed above. Each nurse received a composite observation score for each of the 9 core competencies. Since the highest score on the Likert scale (corresponding to an ability to teach others) was 5, the maximum composite score was 45. The evaluator assigned this composite assessment after the entire observation was completed. As with the total score on the self-test, the total observed score was used to analyze observed performance.

Descriptive statistics of pre- and post- comparisons of intervention and reference groups were calculated using Mann-Whitney tests. A Spearman Rank-Order Correlation followed these preliminary analyses. Spearman Rank-Order Correlation was used to assess gain in self-test knowledge and observed performance

followed by linear regressions for prediction of gain. The model included regression analysis for the same variables used on the questionnaire (groups, years as registered nurse, years at clinic and in-service attendance).

Reliability of the measurement tool was assessed using Cronbach's alpha (Cronbach and Meehl, 1955; Polit and Hungler, 1991). Cronbach's Alpha, a reliability coefficient, is discussed further in chapters V and VI.

**Table 9: Explanation of Quantitative Data Analysis**

<b>Type of statistical test</b>	<b>Purpose</b>	<b>Data assessed</b>
<i>t-test for Independent Means</i>	To compare demographic information of groups at baseline	Pre-training questionnaire (Table 14)
<i>Mann-Whitney Tests</i>	To compare total scores on three assessment methods prior to training	Question, Self test and Observation (Table 16)
	To assess competency ratings between groups	Pre- and Post-training Questionnaires (Tables 19 and 20) Self-test (Table 24) Observation (Tables 27 and 28)
	To compare gain scores based on group	Question (Table 21) Self-test (Table 25) Observation (Table 29)
	Response rate based on years as nurse, clinic experience and recent training	Table 33
<i>Chi-Square Tests of Significance</i>	To compare opinions based on group and experience	Pre-training questionnaire (Table 18)
	Loss to follow up by group	Table 32
<i>Fisher's Exact Tests</i>	To compare opinions based on group (intervention or reference)	Pre-training questionnaire (Table 17)
<i>Spearman Rank-Order Correlations</i>	To compare gain scores with four variables (group, years as nurse, years at clinic and number of in-service programs)	Questionnaires (Table 22) Self-tests (Table 25) Observation (Table 30)
<i>Semi-Partial Correlations</i>	To predict gain scores based on selected variables (participant type, years as a nurse, years at clinic and number of in-service programs)	Questionnaires (Table 23) Self tests (Table 26) Observation (Table 31)
<i>Cronbach's alpha</i>	To assess reliability of measurement tool Using a model of internal consistency. Cronbach's alpha is based on the average inter-item correlation (SPSS 12.0)	All variables on self test All variables on observation tool

### *Focus groups*

Two independent evaluators conducted focus groups at least six months after training was completed. The purpose of the focus groups was to explore the ongoing impact of the training program on worker's self-perception of competence. Two focus groups were assembled including one group from setting 1 and another from setting 3. Each group was comprised of nurses who completed the core competency training, observations and self-tests. Site 2 did not have enough nurses who completed the training to draw a focus group from.

The focus group facilitators were instructed to use the critical incident technique to generate discussion from the group. After reviewing the training program, the researcher presented a list of the nine core competencies. Each nurse was asked to recall and share a clinical event that could be attributable to their core competency training. The facilitator was asked to solicit both positive and negative clinical incidences and continue discussion until a wide range of situations was presented which covered the nine core competencies. Further discussion focused on general perceptions of the short course (duration, content, feasibility) and the personal impact and usefulness of the intervention. Focus groups were conducted in English. All participants were fluent in the language.

Prior to these meetings, the author reviewed the literature on focus group techniques and viewed videotapes of two professionally done focus group discussions. Although these discussions were done within the business of product design and consumer research, an experienced focus group researcher chose these videos as good examples of best practice. These tapes clearly showed the effectiveness of the method and strategies employed to delve beneath the surface on a

topic. Lessons learned from viewing these videos and the literature were shared with the focus group facilitators.

### ***Strengths and weaknesses of the focus group method.***

Like any research technique, there are inherent strengths and weaknesses in the use of focus groups. Strengths of focus groups include depth of conversation (Côté-Arsenault & Morrison-Beedy, 1999) and their efficient ability to focus in on the topic of interest (Morgan, 1997). Yet, as Morgan explains, these strengths hint to the technique's inherent weakness.

The ability to focus on a topic of interest is reliant on that issue being defined by the researcher. Thus the researcher's role in setting the agenda is considerable.

Yet, this is not uncommon to social science research. As Morgan explains:

The fact that the researcher creates and directs the groups makes them distinctly less naturalistic than participant observation so there is always some residual uncertainty about the accuracy of what the participants say. In particular, there is a very real concern that the moderator, in the name of maintaining the interview's focus, will influence the group's interactions.

This problem is hardly unique to focus groups because the researcher influences all but the most unobtrusive social science methods. (p. 14)

Group interaction is another aspect of focus groups that set it apart from other qualitative techniques such as individual interviews or participant observation. This group interaction, like the role of the researcher, can be seen as both a strength and weakness.

### ***Validity and reliability of focus groups.***

Validity and reliability of the focus group technique are enhanced when trustworthiness, credibility, dependability, transferability and confirm ability are addressed (Côté-Arsenault & Morrison-Beedy, 1999). As Shamdasani and Stewart (1990) point out, validity is affected by how comfortable participants feel about sharing their ideas.

Trustworthiness came after trust was established as part of training program. The focus group meetings were scheduled and coordinated by trainers. The two people who conducted the focus group discussions were encouraged to begin the interview with a beginning question which is simple and neutral (Côté-Arsenault & Morrison-Beedy, 1999), to establish a comfort level and familiarity with and between participants.

### ***Analysis of focus groups.***

Confirm ability was assessed by comparing the focus group findings with the qualitative and quantitative data generated in all preceding phases of the study. This methodological triangulation of findings developed a rich evidence base from which to draw conclusions.

Qualitative analysis of the two focus group meetings was done using thematic content analysis. The transcribed interviews were used to identify common themes. Based on the thematic analysis, a taxonomy of major and sub-categories was developed (See Appendix H). The researcher also listened to the audiotapes of the meetings and noted group dynamics and interactions (Côté-Arsenault & Morrison-Beedy, 1999).

### ***Trainer's Questionnaire***

Following the use of the core-competency training program, a convenience sample of six trainers was asked to complete a brief questionnaire on the training package. The following questions were asked:

1. What about this training package made you want to use it? What was its appeal?
2. Briefly comment on the following aspects of the training program
  - a. Timeframe
  - b. Layout
  - c. Content
    - i. Breadth (extent) vs. depth (detail)
  - d. Approach/Method
    - i. Use of the core competency framework
    - ii. Use of reflection questions
    - iii. Sensitivity to adult learning needs
3. How did you adapt the training program to suit your needs?
4. Please feel free to add any other comments you may have.

The trainers' feedback was analyzed using qualitative thematic analysis, including coding for common themes.

### ***Ethical Considerations***

Informed consent was obtained from all participants (those receiving training and controls) prior to entry into the study. A copy of the informed consent form is found in Appendix F. The Research Ethics Committees at the University of Cape Town and the University of the Western Cape approved this study. Permission to

complete the study was also obtained from district health authorities within each study area.

Participants and trainers were free to remove themselves from the project at anytime without repercussion, including loss of the training materials. Although required to complete the pre-training evaluation prior to beginning the invention, participants were not bound to complete the post training evaluation. Confidentiality was maintained through the use of a coded number system on each evaluation; no names were recorded on any of the evaluations.

Potential benefits of this study included enhanced knowledge of primary care core competencies by both clinic nurses and nurse trainers. Participants received all materials free of charge. Preceptors also received these practical and up to date materials on primary care training free of charge. Preceptors also had the opportunity to gain experience in the use of a new core competence assessment tool, which may have direct relevance to their work.

Potential harms were minimal, although nurse frustration at time spent on a new and non-certificated training program is acknowledged. Participants were provided with a certificate of completion, yet the fact that no SANC certification could be attached to this training was clearly stated. Potential participant anxiety could have arisen from greater awareness of areas of personal weakness and an increased need for further primary care training.

## Chapter IV

### *Phase One Results*

Chapter four presents the results from phase one of the study. This first phase included the reference group meetings and an international Delphi study. The results of the subsequent core-competency training program are presented in chapter five.

Box 1 presents a timeline of the study progress by phase.

#### **BOX 1: Timeline of study progress**

	<b>YEARS</b>	<b>EVENTS</b>
11/1998:	<b>Phase One:</b>	Reference group meetings to identify core competencies
1999-2000:		Delphi study on measuring core competencies
2000-2001:	<b>Phase Two:</b>	Development of the evaluation tool to measure core competence Pilot study of core competence measurement tool Follow up meetings with pilot study leaders to further refine tool Wrote training program and elicited feedback from trainers and educators Met with ISDS facilitators to identify study districts
2001-2004:	<b>Phase Three:</b>	Training and evaluation in four field sites Follow up focus group meetings and trainers' questionnaires completed
2004-2006		Completion of qualitative and quantitative analyses and write up of findings

### *Reference Group Meetings*

Two daylong meetings were held in 1998 to outline *essential knowledge, skills and attitudes* for primary care nurses. The meetings conducted in Durban and Cape Town included a total of 18 nurse educators, clinical primary care trainers and working nurses from around South Africa (8 people in the Cape Town group and 10 in the Durban meeting). A purposive sample of participants was selected, based on their reputations and experience in nurse training, education, research and district development.

The meetings began with a discussion of the rationale behind core competencies-- *what are they and what purpose they serve?* -- followed by a review of current training programs including certificate and diploma courses offered through government departments of health and academic institutions. In preparation, participants were mailed (by post) two readings on identifying and developing competencies (Boylan & Westra, 1998; Dunn, Hamilton, and Harden, 1985) and asked to bring a draft "list" of core competencies to the day-long meeting.

The rationale for sending out two readings prior to the meeting was to allow participants the opportunity to learn more about competency development prior to the meeting. They were recommended by a colleague as both helpful and informative background reading. Although the potential influence of these readings is not known, it was felt that having some relevant readings prior to the meeting would allow for individual reflection and consideration and would generally benefit the proceedings.

At both the Cape Town and Durban meetings which followed individual preparatory reading and development of a draft list, participants were then tasked with establishing priority competencies based on "what we *know* and *value*". This was followed by a brainstorming session on how to measure core competencies.

### *Findings of the Reference Group Meetings*

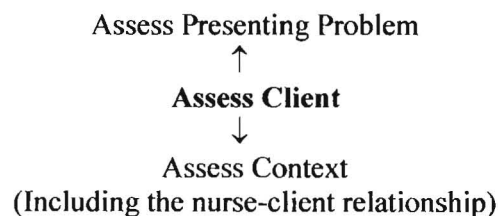
Despite reluctance to generate a list of specific competencies, a number of possible models emerged from participants. Model one, developed by a nurse who applied technical competence to specific programs such as HIV/AIDS, is shown in Table 10.

Table 10: Framework of technical competence & priority programs

Technical Competence	Priority Programs
Clinical (History taking, examination, diagnosis, counseling and prescribing)	For example, Maternal and Child Health Infectious Diseases
Public Health	Malnutrition HIV/AIDS
Management	Rational Drug Use

A nurse trainer in the Western Cape Province presented competence within three learning domains; cognitive, psycho-motor and affective. However, her approach did not generate enough peer support to adequately serve as a reference group model. Model two presented by a medical doctor with a long history in training nurses and community health doctors, emphasized holistic care and no specific competencies beyond comprehensive assessment. This model was based on one's ability to complete a multi-stage assessment, including the client's presenting problem and context, and including the quality and character of the interaction between the client and nurse (Figure 2).

**Figure 2: Multi-stage assessment of nursing practice**



Final consensus among participants at the first Durban meeting generated a list of nine core competencies, which are presented in the box below. This list was felt to be a worthwhile starting point to frame discussion about competence. Participants believed that specification could be added to this list to further explain each of the nine general competencies.

**Box 2: The Nine Core Competencies of Primary Care Nursing**

- Able to problem solve: The consultation & health assessment skills
- Capable of managing common conditions such as tuberculosis, diarrhea and acute respiratory infections
- Demonstrates effective communication and counseling skills
- Able to apply rational drug use
- Identifies when and where to refer
- Capable of accessing and using information
- Demonstrates a caring, confident approach
- Capable of providing general clinic management
- Demonstrates a community orientation

These educators and clinicians mentioned that each core competence required detailed description, which could then be applied in a matrix to each priority program. For example, under problem solving skills, there could be a list of indicators such as: history taking, physical examination, differential diagnosis, decision making, planning, prioritizing, implementing and evaluating. These indicators could then be used as a framework to assess a nurse's ability to carry out priority program such as tuberculosis or family planning services. Participants mentioned that such indicators of competence should be realistic and reflect the broad range of tasks of a primary care nurse. Having a set of indicators to use as a baseline would help define a level of "safe practice."

Supplementary issues raised by the participants were noted by the investigator and discussed as time allowed. Such topics included the conflict between selective and comprehensive primary health care, how the preponderance of selective programs influenced training initiatives and debates about training methods. System-wide concerns were raised, such as the move to a supermarket<sup>5</sup> (one-stop shopping) approach to service delivery (which adds breadth to the nurse's role), the need for effective supervision, and task-oriented service delivery and the numerous expectations put on nurses. In addition, weak communication and poor transport infrastructure were identified as continuous challenges to primary care nursing. These issues emphasized the participants' views that competence cannot be measured or discussed in a vacuum and must be seen in a context.

### *Delphi Study*

The Delphi study was set up in 2000 and included an international panel of 13 people from South Africa, the United States and Canada. Although there was a time lag from the completion of the initial reference group meetings, it was felt that no fundamental changes had occurred and the ideas and issues raised were still pertinent and relevant at the start of the Delphi.

Participants were chosen purposively on the basis of being experts in the field of nurse training and primary health care. Word of mouth and "snowballing" were used. They were invited to participate in the Delphi as part of a questionnaire study defining and assessing competence. Six people responded to this first questionnaire. Respondents included an employee of the South African Nursing Council, lecturers at

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<sup>5</sup>The supermarket approach is a method of clinic management whereby services are available daily thus allowing patients to have all needs met at every clinic visit. This approach can be used to reduce the chance of missed opportunities for preventive care. Although "special" clinic days may still be scheduled for specific populations (e.g. hypertension clinic or family planning clinic), clients can assume that these needs would also be available to them whenever they visit the clinic.

the Universities of Cape Town, Free State and KwaZulu Natal (South Africa), and McMaster University (Canada), and a director of a PHC training program. Numerous attempts were made to increase the response rate of 46% including the use of email, fax and mailing the questionnaire by post, but this was not successful.

The second round of the Delphi was hindered by a very low response rate (n=2) and thus should be read with caution. Again numerous attempts were made to increase the return rate through follow up letters and emails. The first and second round Delphi questionnaires are shown in Appendix G.

As discussed in chapter three, the aim of the Delphi study was to conceptualize a measurement tool for the nine core competencies produced by the reference groups. For that reason, the two tasks of the Delphi participants were:

1. To gain consensus on what is meant by a competent primary care nurse
2. To identify measurable competence criteria

The researcher served as a facilitator of this process and compiled information from the first round to feed back to the Delphi participants. Qualitative methods were used to facilitate analysis of the responses as well as to feedback ideas to the group.

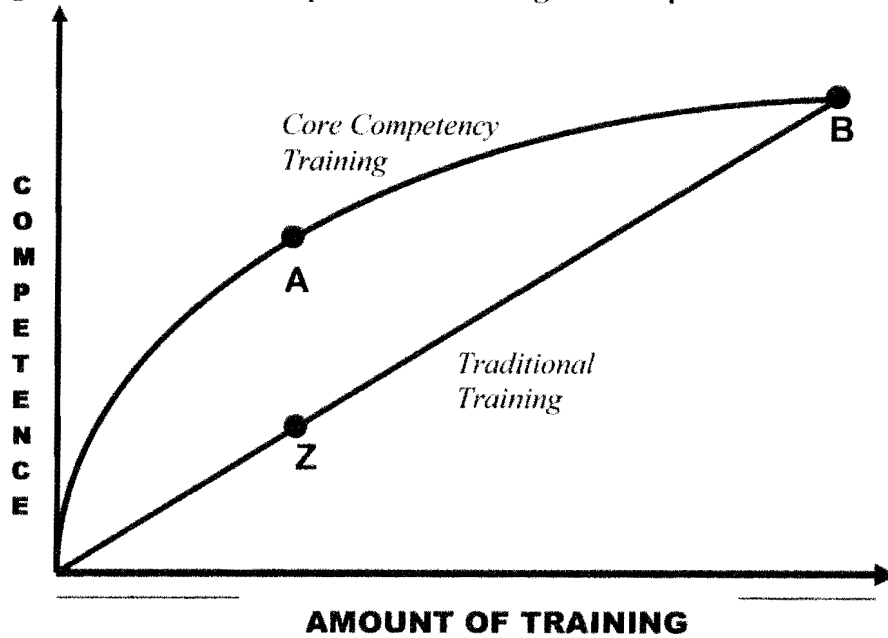
Feedback was organized by Delphi question. Common themes and seminal quotes were recorded and shared. The second round allowed for further clarification of ideas. Table 11 lists the five questions that were presented to the Delphi participants in the first round.

**Table 11: Delphi study questions- Round One**

<b>Question 1:</b> Can training around core competencies yield a “safe practitioner” more quickly than traditional methods?
<b>Question 2:</b> Should a truncated training program look at both clinic and community-based needs?
<b>Question 3:</b> In one sentence, define a competent primary care nurse.
<b>Question 4:</b> Do you feel the competencies listed in figure 3 are “core” competencies? Please modify, add or delete as necessary.
<b>Question 5:</b> Do you feel that the list of core competencies manifested in specific programs (e.g. maternal-child health) could be a helpful way of assessing competence?

Figure 3, which was provided to Delphi participants, illustrates the investigator’s hypothesis on nonlinear relationships between training and competence. This hypothesis, if supported by empirical data, would then reinforce the usefulness of core competency training. The diagonal (straight) line represents some conventional assumptions about training (a 4-year basic nursing education followed by a one-year primary care nursing diploma) which presume a linear relationship between amount of training and competence; i.e. increased training time equals increased competence. However, the curved line illustrates the study hypothesis that core competency training can more quickly achieve a “safe practitioner level” (point A). Less training time is needed to reach point A with core competency training than traditional training, representing potential savings in training time (horizontal axis). Point Z represents the lower competency level compared to point A, despite the same amount of time in training. The vertical difference between point A and point Z could be described as the “training jump” achieved through core competency training. Point B represents a hypothetical “expert practitioner” which is achieved much later and at relatively similar rates.

Figure 3: The relationship between training and competence



### Findings of the Delphi Study

**Question 1:** Can training around core competencies yield a “safe practitioner” more quickly than traditional methods?

Participants agreed that training around core competencies yielded a “safe practitioner” more quickly than traditional methods, but indicated that this was conditional on the quality and context of training. One response was:

*“... training around core competencies will be a quicker way of attaining a safe practitioner. But, to achieve this outcome, the training approach must be assessed...”*

**Question 2:** Should a truncated training program look at both clinic and community-based needs?

Responses to this question showed consensus for the need to address

both clinical and community services in a proposed truncated training programme.

*As one participant said:*

*"PHC training presently, is basically geared towards clinical practice rather than community-based practice, yet there are more health needs in the community than in the clinics. There should be a balance between the two, or alternatively, the larger percentage of training should be on community-based PHC."*

**Question 3:** In one sentence, define a competent primary care nurse.

Many descriptions were provided to define a competent primary care nurse:

*"This is a nurse who has the appropriate knowledge, skills and attitude to tender comprehensive health care in a primary health care setting."*

*"One who not only has knowledge but who exhibits critical thinking and who applies judgment appropriately with a caring attitude"*

*"(A) person who acts as change agent to enhance responsibility for own health, family health and community health by enhancing self-care on all levels of nursing care"*

*"A competent PCN is an independent practitioner who knows her/his own scope of practice and is capable of assessing the clients needs, diagnosing and treating common conditions and through the interaction assists the clients to attain optimal health."*

*"Able to identify, plan, implement and evaluate a client within his/her environment at first time contact"*

The characteristics mentioned by participants are summarized in Table 12.

These traits agree with the nine core competencies developed by the initial reference group meetings (Box 2, p. 113).

**Table 12: Characteristics of a competent primary care nurse**

- Demonstrates sound judgment, critical thinking and a caring attitude
- Effectively assesses needs; diagnoses and treats common conditions
- Assists client to attain optimal health and promotes self-care
- Works within scope of practice and practices independently

**Question 4:** Do you feel the competencies listed in Box 2 are “core” competencies? (Please modify, add or delete as necessary.)

**Box 2: The Nine Core Competencies of Primary Care Nursing**

- Able to problem solve: The consultation & health assessment skills
- Capable of managing common conditions such as tuberculosis, diarrhea and acute respiratory infections
- Demonstrates effective communication and counseling skills
- Able to apply rational drug use
- Identifies when and where to refer
- Capable of accessing and using information
- Demonstrates a caring, confident approach
- Capable of providing general clinic management
- Demonstrates a community orientation

There was general agreement that the list was an appropriate inventory of “core” competencies, yet some minor amendments were suggested. One person remarked, *“It is a great idea,”* while another explained;

*“These are basic services that should be rendered by all PHC centers, therefore every PHC trained nurse should have these core competencies.”*

Another Delphi participant mentioned the difficult, yet important, balancing of prevention efforts with curative care:

*“Although, I would like to see “community involvement” and the “preventive and promotive” aspects of her function included as competencies, I don't know how this can be done. Not including them as competencies leaves the emphasis of the competencies and skills on the given matrix skewed to the curative aspect.”*

One respondent questioned the need to separate out referral as a competency and the issues were raised whether a “caring and confident approach” and “community orientation” could be defined as competencies.

**Question 5:** Do you feel that the list of core competencies manifested in specific programs (e.g. maternal-child health) could be a helpful way of assessing competence?

Participants disagreed whether core competencies were best measured in specific programs (e.g. maternal-child health and infectious diseases). Only three respondents listed programs they felt were suited to measure each competence and there was little commonality in responses. Some respondents felt that to manage programs well, people need to be competent in all domains.

*“I do not think that one or two programs would best measure each core competency. ...all the core competencies given will be needed to some degree in all... programs.”*

The majority of respondents agreed with the use of proxy indicators of competence.

*“...useful and simple, practical method of assessing knowledge, specific programs and core competencies needed to treat them.”*

**Question 6:** If you answered YES to the previous question, please identify one or two programs for measuring each competence.

Three people attempted to answer this question by listing specific programs to measure a core competence. There was little commonality in the responses. Two of the three respondents to this question chose more than two programs for most of the competency areas.

One respondent felt the question was not clear and another explained that *"One program can fall under more than one competence (and) more than two programs can fall under one competence"*. Another respondent further explained, *"I do not think that one or two programmes would best measure each core competency. However, it is my opinion that all the core competencies given will be needed to some degree in all of the listed programs. The chart could therefore be used as the basis of an instrument which will need to be developed to measure competency in each given programme."*

In addition, concerns were raised about the varied scope of practice between rural and urban primary care nurses, as well as the need to integrate curative and health promotion activities. As mentioned, round two was limited by the low response rate, yet there was agreement for the need to make core competencies measurable. Suggestions included the use of minimum standards and a combination of a practical assessment (observed clinical exam or real clinic setting) and written test using case studies.

### ***Applying Knowledge of Core Competence to Primary Care Nurse Training***

Once Phase One of the study, including the reference group meetings and Delphi study was completed and analyzed, the study moved to applying this information to core competence training with primary care nurses. The knowledge gained provided the basis for developing both the measurement tool and training package which centered on the core competencies identified by the reference group and affirmed by the Delphi participants. Since no consensus was reached on questions five and six above, the possibility of measuring samples of competence within a matrix of priority programs was dropped. Instead, the tool utilized a mix of programs and clinical scenarios to assess competence. Development of the assessment tool emphasized practicality and applicability of tool use in the “real world” setting. As discussed in chapter III, the measurement tool was piloted, refined and then applied to a novel core competency training program. The results of the core competency training are presented in Chapter V.

## **Chapter V**

### ***Phase Three Results***

This chapter presents the results of the assessment of the core competency training. A total of 162 nurses participated in this part of the study. Presented here is an analysis of the results of the pre and post training questionnaires, as well as competence pre- and post-training using the novel measurement tool. These analyses were carried out using SPSS version 12.0. Finally, the results of the two post-training focus groups are presented.

Table 13: Demographic Information for the Sample ( $N = 162$ )

Years as RN <sup>a</sup>	<i>n</i>	%
Under 3 years	25	15.4
3 – 5 years	43	26.5
6 – 9 years	52	32.1
10 – 37 years	42	25.9
Years at Clinic <sup>b</sup>		
Under 3 years	52	32.1
3 – 5 years	62	38.3
6 – 9 years	25	15.4
10 – 25 years	23	14.2
Number of In-Service Programs Attended <sup>c</sup>		
None	37	22.8
1 program	70	43.2
2 – 3 programs	42	25.9
4 – 6 programs	13	8.0

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<sup>a</sup> Years:  $M = 7.69$ ,  $SD = 5.87$

<sup>b</sup> Years:  $M = 5.02$ ,  $SD = 4.19$

<sup>c</sup> Programs:  $M = 1.48$ ,  $SD = 1.31$

Table 13 displays the demographic information for the entire sample. The years of nursing experience ranged from less than a year to 37 years ( $M = 7.69$ ,  $SD = 5.87$ ). Years at the clinic ranged from less than a year to 25 years ( $M = 5.02$ ,  $SD =$

4.19). Sixty-six percent reported only having attended one or no in-service training program in the last six months ( $M = 1.48, SD = 1.31$ ) (Table 13).

**Table 14: Comparison of Demographic Information Based on Group. *t* Test for Independent Means ( $N = 162$ )**

Variable	Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Years as registered						
nurse	Intervention	105	7.31	5.84	1.12	.26
	Reference	57	8.39	5.93		
Years at the clinic						
Years at the clinic	Intervention	105	4.65	4.24	1.55	.12
	Reference	57	5.71	4.05		
Number of in-service						
programs	Intervention	105	1.45	1.25	0.41	.68
	Reference	57	1.53	1.42		

Table 14 displays the comparisons for the demographic variables based on group. These comparisons utilized *t* tests for independent means. No differences were found between the two groups for years as a registered nurse ( $p = .26$ ), years at the clinic ( $p = .12$ ) or their number of in-service programs ( $p = .68$ ).

**Table 15: Data Availability Across the Study ( $N = 162$ )**

Type of Data	Before		After		Both Times	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Questionnaire	144	88.9	65	40.1	62	38.3
Self-Test Knowledge	149	92.0	80	49.4	77	47.5
Observation	61	37.7	77	47.5	55	34.0

*Note.* Frequencies and percentages reflect the completeness of the data compared to the total sample of 162 nurses.

Table 15 displays information related to the availability for the three types of instruments (questionnaire, self-reported knowledge and observation). Complete questionnaire data (both pretest and posttest) was available for 38.3% of the respondents. Similar completeness was available for 47.5% of the self-report knowledge data and 34.0% of the observation data (Table 15).

**Table 16: Comparison of Pretest Scores Between Groups Using All Three Assessment Methods. Mann-Whitney Tests**

	Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>z</i>	<i>p</i>
Questionnaire Pretest Total						
Score ( <i>n</i> = 144)	Intervention	94	31.21	6.07	1.71	.09
	Reference	50	32.74	5.21		
Self-Test Pretest Total Score						
( <i>n</i> = 149)	Intervention	95	23.17	2.21	1.85	.07
	Reference	54	22.20	2.29		
Observation Pretest Total						
Score ( <i>n</i> = 61)	Intervention	34	29.19	4.31	0.85	.39
	Reference	24	29.43	2.33		

Table 16 displays the pretest comparisons between the two groups. Reference group participants tended to have higher questionnaire pretest scores ( $p = .09$ ) while the Intervention group tended to have higher self-test scores ( $p = .07$ ). No pretest differences were found between the two groups for their observation pretest scores ( $p = .39$ ) (Table 16).

### 1. Questionnaire.

**Table 17: Comparison of Selected Opinions Prior to Training Based on Group. Fisher's Exact Tests ( $n = 144$ )**

	Intervention		Reference		<i>p</i>
	<i>n</i> = 94		<i>n</i> = 50		
	<i>n</i>	%	<i>n</i>	%	
Feel need for all those					
competencies	89	94.7	49	98.0	.67
Do you agree with priority					
programs	94	100.0	49	98.0	.35
Have learning needs been met	28	29.8	24	48.0	.04

Almost all respondents in both groups agreed with the need for all core competencies and with priority programs (Table 17). Significantly fewer ( $p = .04$ ) Intervention Nurses (29.8%) agreed that their learning needs had been met in the past when compared to the reference group (48.0%) (Table 17).

**Table 18: Comparison of Selected Opinions Prior to Training Based on Group and Experience. *Chi-Square Tests of Significance (n = 130)***

	Intervention Group					Reference Group				
	0 – 6		7 or more		<i>p</i>	0 – 6		7 or more		<i>p</i>
	years		years			years		years		
<i>n</i>	%	<i>n</i>	%		<i>n</i>	%	<i>n</i>	%		
Feel need for all those										
competencies	47	96	29	91	0.33	25	96	22	100	0.35
Agree with priority										
programs	49	100	33	100	*	26	100	21	95	0.27
Learning needs										
have been met	17	40	11	36	0.80	12	60	11	55	0.75

\* A *p*-value was not calculable for intervention group “agree with priority programs” because all respondents agreed.

Analysis of opinions by experience level (0-6 years versus 7 or more years) stratified by group showed no significant differences, suggesting that opinions about training were not affected by years as a registered nurse (Table 18).

Similarly, analysis of selected opinions (as in Table 18) by frequency of previous training (2 or fewer previous in-service courses versus 3 or more previous courses) stratified by group showed no statistical differences within groups suggesting that opinions about training were not affected by previous training experiences (Data not presented here.)

**Table 19: Pre-intervention Questionnaire Competency Ratings Between the Groups. Mann-Whitney Tests ( $n = 144$ )**

Competency	Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>z</i>	<i>p</i>
Problem solving	Intervention	94	3.64	0.88	1.56	.118
	Reference	50	3.79	0.88		
Management of common conditions	Intervention	94	3.79	0.80	2.34	.019
	Reference	50	4.02	0.70		
Rational drug use	Intervention	94	3.58	0.86	0.96	.339
	Reference	50	3.69	0.80		
Communication/ counseling	Intervention	94	3.86	0.89	1.39	.165
	Reference	50	4.03	0.65		
When/where to refer	Intervention	94	3.97	0.82	1.00	.317
	Reference	50	4.05	0.67		

Table 19 *Continued*

Table 19 *Continued*

Competency	Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>z</i>	<i>p</i>
Accessing and using information	Intervention	94	3.74	0.90	0.23	.817
	Reference	50	3.84	0.72		
A caring, confident approach	Intervention	94	3.75	0.92	0.41	.684
	Reference	50	3.80	0.78		
General clinic management	Intervention	94	3.60	0.85	2.44	.015
	Reference	50	3.91	0.61		
Community orientation	Intervention	94	3.56	0.98	1.16	.247
	Reference	50	3.75	0.82		
Total Score	Intervention	94	31.21	6.07	1.71	.088
	Reference	50	32.74	5.21		

Table 19 displays the Mann-Whitney Test comparisons between the two groups for the nine questionnaire competency ratings plus the total competency score prior to training. Prior to the intervention, reference group nurses rated their competence higher on all nine core competencies. This self-assessed rating was statistically significant for two of the nine competencies: “management of common conditions ( $p = .019$ )” and “general clinic management ( $p = .015$ )” (Table 19).

**Table 20: Post-intervention Questionnaire Competency Ratings Between the Groups. Mann-Whitney Tests ( $n = 65$ )**

Competency	Group	$n$	$M$	$SD$	$z$	$p$
Problem solving	Intervention	41	3.97	0.57	0.57	.566
	Reference	24	3.96	0.81		
Management of common conditions	Intervention	41	4.06	0.67	0.34	.731
	Reference	24	4.08	0.83		
Rational drug use	Intervention	41	3.94	0.73	0.96	.339
	Reference	24	3.66	0.76		
Communication/counseling	Intervention	41	4.16	0.64	0.14	.890
	Reference	24	4.21	0.72		
When/where to refer	Intervention	41	4.30	0.42	0.66	.511
	Reference	24	4.25	0.61		

Table 20 *Continued*

Table 20 *Continued*

Competency	Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>z</i>	<i>p</i>
Accessing and using						
information	Intervention	41	3.94	0.57	1.08	.278
	Reference	24	3.67	0.82		
A caring, confident						
approach	Intervention	41	4.05	0.44	1.10	.272
	Reference	24	3.92	0.50		
General clinic						
management	Intervention	41	3.92	0.56	2.05	.041
	Reference	24	4.04	0.62		
Community orientation	Intervention	41	3.98	0.82	0.04	.969
	Reference	24	4.04	0.62		
Total Score	Intervention	41	36.12	3.47	0.17	.864
	Reference	24	35.79	4.62		

Table 20 displays the Mann-Whitney Test comparisons between the two groups for the post-intervention questionnaire competency ratings. After training, intervention nurses assessed their own competence at a higher level than the reference group on five core competencies. Yet, reference group nurses still rated themselves higher on four core competencies with one being statistically significant (“general clinic management”,  $p = .041$ ). There was no significant difference between the two groups’ total score.

**Table 21: Questionnaire Competency Gains Based on Group. Mann-Whitney Tests (n = 62)**

Competency	Group	<i>M*</i>	<i>SD</i>	<i>z</i>	<i>p</i>
Problem solving	Intervention	0.17	0.83	0.46	.65
	Reference	0.18	0.79		
Management of common conditions	Intervention	0.13	0.92	0.35	.73
	Reference	0.25	0.79		
Rational drug use	Intervention	0.22	1.02	0.71	.48
	Reference	0.05	0.78		
Communication/counseling	Intervention	0.19	0.94	0.15	.88
	Reference	0.25	0.88		
Referral (When and where)	Intervention	0.17	0.88	0.04	.97
	Reference	0.15	0.70		

Table 21 *Continued*

Table 21 *Continued*

Competency	Group	<i>M</i>	<i>SD</i>	<i>z</i>	<i>p</i>
Accessing and using information	Intervention	0.15	0.99	0.56	.58
	Reference	-0.11	0.74		
A caring, confident approach	Intervention	0.23	0.95	0.04	.97
	Reference	0.26	0.86		
General clinic management	Intervention	0.27	0.91	0.02	.99
	Reference	0.16	0.71		
Community orientation	Intervention	0.35	0.99	0.17	.86
	Reference	0.31	0.87		
Total Score	Intervention	4.67	6.34	0.43	.67
	Reference	3.95	5.29		

*Note.* \**M* equals mean increase in score

Table 21 displays the questionnaire competency gain scores based on group. These comparisons utilized Mann-Whitney tests. None of the ten gain scores were significantly different at the  $p = .05$  level. Yet the intervention group score went up more than reference group in 5 measures and the overall score gain in the trained group was quite a bit higher than reference (0.72), although not statistically significant.

**Table 22: Spearman Rank-Order Correlations for Questionnaire Competency Gains with Demographic Factors and Group ( $n = 62$ )**

Competency	Group <sup>a</sup>	Years as Nurse	Years at Clinic	In-Service Programs
Problem solving	-.06	.04	-.09	.14
Management of common conditions	-.04	-.18	-.25	.02
Rational drug use	.09	-.17	-.21	-.01
Communication/counseling	-.02	-.07	-.14	.20
When/where to refer	.01	-.19	-.18	.01
Accessing and using information	.07	-.05	-.14	-.07
A caring, confident approach	-.01	-.16	-.26*	-.05
General clinic management	.01	-.20	.01	-.28*
Community orientation	.02	.05	.01	-.10
Total Score	.06	-.07	-.09	-.10

\*  $p = .05$ .

<sup>a</sup> Group: 0 = *Reference* 1 = *Intervention*

Table 22 displays the Spearman rank-order correlations between questionnaires' gain scores and the demographic factors of experimental group (reference or intervention), years as nurse, years at clinic and number of in-service programs attended. Gains in questionnaire competence were not associated with either trained versus non-trained group or their number of years as a nurse. Nurses with fewer years at the clinic gained more competence related to "a caring, confident

approach” ( $r = -.26$ ). Nurses having attended fewer in-service programs had significantly greater gains in “general clinic management” ( $r = -.28$ ) (Table 22).

**Table 23: Prediction of Questionnaire Total Competency Gain Score Based on Selected Variables ( $n = 62$ )**

Predictor	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>	<i>sr</i>
Group <sup>a</sup>	0.51	1.63	.04	.755	.04
Years as RN	0.01	0.12	.01	.960	.01
Years at clinic	-0.08	0.16	-.07	.608	-.07
Number of in-service programs	-0.37	0.57	-.09	.524	-.08

Full Model:  $F(4, 57) = 0.22, p = .93, R^2 = .015$ .

<sup>a</sup> Group: 0 = *Reference* 1 = *Intervention*

*sr* = Semipartial correlation

Table 23 displays the linear regression model predicting total questionnaire competency gain based on the four demographic variables. The overall model was not significant ( $p = .93$ ), accounting for only 1.5% of the variance in the dependent variable (Table 23).

### ***Post training Questionnaire***

In addition to completing the Likert scale portion of the post-training questionnaire presented above; intervention nurses were given the opportunity to respond to four short answer questions. A total of 37 nurses completed this part of the post-training questionnaire. The following four questions were asked:

1. What did you find most helpful about this program?
2. If you could remove something from the course, what would it be and why?
3. How do you feel you have changed by doing this program?
4. A request for any additional comments

#### ***Question 1. Most helpful part of the program***

A variety of responses were given with most of them dealing with assessment and treatment of patients. One participant wrote, *"It helps me to know how to take proper history without missing important facts. It also taught me that physical examination is essential for proper diagnosis and treatment."* Another person explained this idea further; *"It helped me to know that what I was always doing was wrong, by taking history and prescribing without even examining or prescribing without consulting the EDL."*

The most commonly mentioned helpful aspect of the course was improved knowledge of the management of common conditions. This was mentioned by 20 participants and included reference to improved knowledge of "management" as well as rational prescribing. The next most frequently mentioned category was improved examination skills, which was mentioned by 15 participants. Other topics, which were mentioned, were history taking (n=12), diagnosing (n=10) and referral (5).

Topics that were mentioned as most helpful by at least one person were: a.) Community orientation, b.) Improved confidence and independence, c.) Data

collection, and d.) Use of protocols to facilitate work. Three people specifically mentioned that the provision of the training materials was most helpful. (1) *“ask for supervision and refer to the manual I have been given”* and *“This program teaches me things that I did not know before because if I go wrong or not knowing anything, I refer in the books or manual”*

One person expressed that, *“This program is an eye opener”* while another wrote, *“It revives my mind and promotes my interest to study further and gain more up to date knowledge”*. Others mentioned that they most appreciated that the programme was *“uncomplicated and straightforward”* and that the course could be completed locally and that it did not separate participants from family and work.

***Question 2. If you could remove something from the course, what would it be?***

The majority of respondents said nothing should be removed from the course (33 of 37, 89.18%). One person felt removing something would depend on the standard of the *“...new approach, changes implemented”* and another commented that, *“Exercise and practice, it can be removed from this course, there will be no available guide...”* Lastly, one nurse expressed difficulty with completing this programme and working simultaneously, *“I think I should remove attending to my daily activities in my clinic at the same time attending to this programme.”*

***Question 3. How do you feel you have changed by doing this program?***

People provided a variety of ways they felt they had changed. Most peoples' input concentrated on improved ability in the one to one patient consultation of history taking, physical examination, diagnosis and treatment. This corresponds with comments of improved confidence, motivation and independence.

For example participants mentioned that they now are able to examine patients and prescribe with greater accuracy. In addition, greater specificity on examination of different population groups was mentioned. As one nurse said, "I can manage to do proper assessment of an adolescent which differs from that of an adult." The variety of comments listed below show the perceived tangible benefits of this type of training programme.

*"I am able to know the normal and abnormal signs"*

*"I know more of management of common conditions"*

*"I can now know how to examine the patient correctly and in sequence"*

Nurses provided a number of interesting examples of how their confidence had changed. For example, one person said, *"I feel confident in diagnosing and prescribing the treatment since I am working in rural areas where the patient depend solely on me as a clinic nurse"* and another nurse stated, *"I'm able to take whole history and reach correct diagnosis without doubt."*

Changes in motivation were raised including greater interest in certain aspects of a patient care and in spending more time with clients. For example, "I spend more time with the patient, taking full history so that I can be able to diagnose and give correct medication" and "I have more interest in general examination of my patients."

Improved confidence and independence were mentioned alongside increased motivation. This is clearly shown in one participant responding, "I am proud of this course because now I can work independently and also able to teach others what I learned, I also feel confident after treating a patient on my own and find excellent results on review."

#### ***Question 4. Additional comments***

Finally, participants were asked to provide any additional comments about the training programme. Responses were organized into the following categories: duration, continuing education, physical examination, course materials, need for continuing education, physical examination, course materials, insight and confidence, and logistics.

The course materials were said to be practical and relevant. As one nurse mentioned, *“Student centered program, emphasized discovery, uses adult learning principles.”* Yet, there were important concerns about logistical constraints including lack of transport, staff and long distances to meet with preceptors. As one nurse explained, *“Practice with my preceptor is so limited because of shortage of staff and transport problems.”*

Themes to emerge around duration were that the course was short and that it served as an introduction. A number of comments discussed the importance of primary care training and the need for continuing education. The following three examples provide support for continued primary care training, especially in settings where there are no doctors.

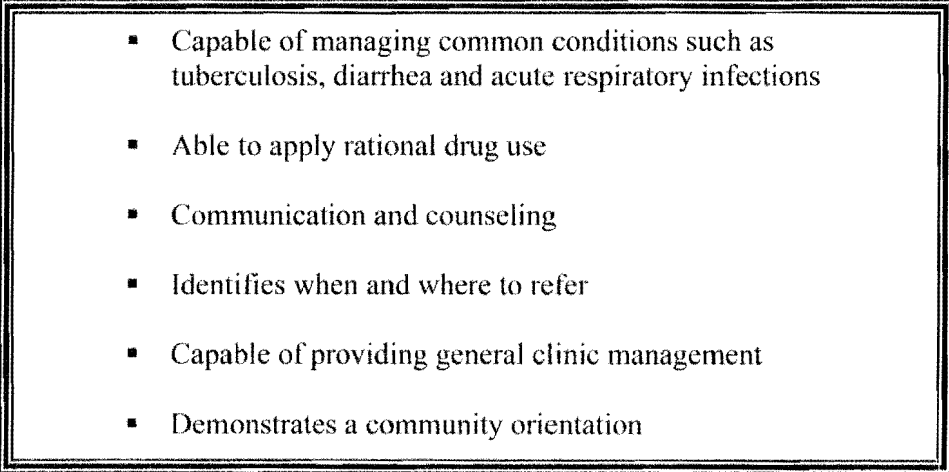
- *“Let this short course be a continuous program as it is the foundation to a full one year PHC course and it is very useful to those who are not primary health care trained.”*
- *“This training is very much important especially to those nurses who are working at the clinic situation where there is no doctor around.”*
- *“I wish you could introduce the course to all the nurses especially who are working alone without the doctor.”*

As discussed in question 3 above, improved insight and confidence were again mentioned when nurses were asked for any additional comments. Nurses explained that they are able to respond more effectively when the clinic is busy. For example; *"I am now working with confidence. Even if the clinic is full and there are different kinds of patients waiting for me, I do not run around waiting for someone to help them."* And lastly, a nurse emphatically expressed her appreciation for primary care training, *"The course is so good because since I undergone the PHC course I feel like a dark cloud has been removed in my mind and my knowledge. I feel more secured at work because I know what I'm doing day by day."*

## **2. Self test.**

There were 27 questions in this self-test with a maximum score of 31 (see Appendix A for a full copy of the self-test). Figure 4 shows the six core competencies covered by the self-test.

**Figure 4: Core Competencies Assessed on Self-Test**

- 
- Capable of managing common conditions such as tuberculosis, diarrhea and acute respiratory infections
  - Able to apply rational drug use
  - Communication and counseling
  - Identifies when and where to refer
  - Capable of providing general clinic management
  - Demonstrates a community orientation

### ***Reliability of the Self-test.***

Reliability of the self-test was assessed using Cronbach's alpha<sup>6</sup>. Only pre-training data were used to assess reliability. The overall assessment of internal consistency was low (Cronbach's alpha of .401). The Cronbach's alpha result was well below the acceptable level of 0.80. Given this analysis, the self tests' reliability was low and should be interpreted with caution and qualification.

**Table 24: Comparisons of Total Self-Test Knowledge Scores**

		<i>M</i>	<i>SD</i>	<i>z</i>	<i>p</i>
Pretest Data ( <i>n</i> = 149)	Intervention Group	23.17	2.21	1.85 <sup>a</sup>	.065
	Reference Group	22.20	2.79		
Posttest Data ( <i>n</i> = 80)	Intervention Group	24.51	2.63	1.09 <sup>a</sup>	.275
	Reference Group	25.26	2.56		
Pretest to Post Test Gain					
<i>(n</i> = 77)	Intervention Group	1.26	3.15	1.66 <sup>a</sup>	.10
	Reference Group	2.94	3.26		

<sup>a</sup> Mann-Whitney Test

Table 24 displays comparisons for total self-test knowledge scores. No differences were found between the two groups for pre-intervention ( $p = .065$ ) or post-intervention self-test knowledge ( $p = .275$ ). For the comparison of pretest to

<sup>6</sup> Cronbach's alpha is a coefficient of reliability or consistency calculated using the number of test items and the average inter-correlation among questions. (SPSS FAQ What does Cronbach's alpha mean? [www.ats.ucla.edu/stat/spss/faq/alpha.html](http://www.ats.ucla.edu/stat/spss/faq/alpha.html))

posttest gain scores, the reference group tended, though not significantly ( $p = .10$ ), to have higher gain scores (Table 24).

The average post intervention score (percentage) on the self-test was modest; 24.51 (79%) for the intervention group and 25.26 (81%) for the reference group out of a maximum score of 31 points (100%), as were the overall gains of 1.26 points (4%) and 2.94 points (9%) respectively. Individual test question performance was then reviewed. Two questions showed particularly low performance levels on important knowledge areas: 1.) Management of sexually transmitted diseases (STD's) and 2.) Responding to a potentially suicidal patient. Of those completing the question, 14 participants (27%,  $n = 52$ ) received zero points for the STD question while only 4 registered nurses (8%) correctly identified the full syndromic management necessary. The remaining nurses were able to correctly identify only partial treatment. Regarding a potentially suicidal patient, 67% of nurses did not adequately respond to a client's suicidal ideation.

**Table 25: Spearman Rank-Order Correlations for Self-Test Knowledge Gains with Demographic Factors ( $n = 77$ )**

	Group <sup>a</sup>	Years as Nurse	Years at Clinic	In-Service Programs
Knowledge Gain Score	-.19	.12	-.01	.17

\*  $p = .05$ . \*\*  $p = .01$ . \*\*\*  $p = .005$ . \*\*\*\*  $p = .001$ .

<sup>a</sup> Group: 0 = Reference | = Intervention

Table 25 displays the Spearman rank-order correlations between the total knowledge gain score and the four demographic factors. No significant associations were found between gains in knowledge with group, years as a nurse, years at the clinic and number of in-service programs attended (Table 25).

**Table 26: Prediction of Gain in Self-Test Knowledge Based on Selected Variables ( $n = 77$ )**

Predictor	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>	<i>sr</i>
Group <sup>a</sup>	-1.83	0.74	-.28	.016	-.27
Years as RN	0.10	0.06	.20	.107	.18
Years at clinic	-0.08	0.09	-.12	.354	-.10
Number of in-service programs	0.27	0.24	.13	.260	.13

Full Model:  $F(4, 72) = 2.49, p = .05, R^2 = .122$ .

<sup>a</sup> Group: 0 = *Reference* 1 = *Intervention*

*sr* = Semipartial correlation

Table 26 displays the linear regression model predicting total knowledge gain based on three demographic variables and whether the respondent was a member of the intervention or reference group. The overall model was significant ( $p = .05$ ), accounting for 12.2% of the variance in the dependent variable. Knowledge gain was most affected by group membership ( $\beta = -0.28; p = .016$ ) (Table 26). However, only about 6% of the variability in self-test knowledge score gain could be explained by the group status ( $sr = -0.27; \text{partial } r^2 = 0.559$ ).

### ***3. Observation.***

The observation tool was the longest and most extensive evaluation in this study (Appendix A). It took approximately one hour to complete each evaluation. A total of 138 observations were done, including 61 pretests and 77 posttests. Numerous measures were implemented to reduce loss to follow up, including letters of encouragement, reminders to students and trainers and repeated mailings of post intervention observations. This may account for the unusual *increased* return in post intervention observations. Participants in training may also have felt a greater investment in being observed after training as well as desire to demonstrate what they had learned. Also, the rate of return was better for observations than knowledge based self-tests. This may be due to the fact, that trainers were more intimately involved in seeing that this portion of the assessment (compared to the self test) was completed.

#### ***Reliability of the observation tool***

The Cronbach's Alpha for the observation tool was 0.781 (number of items = 37), which was much higher than the Cronbach's Alpha for the self-test and close to the accepted level of 0.80. Although further study of the tool is recommended, based on this analysis, the observation tool was deemed to have an acceptable reliability.

**Table 27: Pre-intervention Observational Competency Ratings between the Groups. Mann-Whitney Tests ( $n = 61$ )**

Competency	Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>z</i>	<i>p</i>
Problem solving	Intervention	34	3.03	0.76	0.46	.649
	Reference	27	2.92	0.87		
Management of common conditions	Intervention	34	3.36	0.69	2.40	.017
	Reference	27	2.79	0.81		
Rational drug use	Intervention	34	3.21	0.84	1.71	.087
	Reference	27	2.78	0.80		
Communication/counseling	Intervention	34	3.51	0.70	1.38	.168
	Reference	27	3.23	0.83		
When/where to refer	Intervention	34	3.58	0.59	1.63	.102
	Reference	27	3.15	1.02		

Table 27 *Continued*

Table 27 *Continued*

Competency	Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>z</i>	<i>p</i>
Accessing and using information	Intervention	34	3.45	0.74	2.60	.009
	Reference	27	2.91	0.71		
A caring, confident approach	Intervention	34	3.39	0.69	1.07	.284
	Reference	27	3.22	0.73		
General clinic management	Intervention	34	2.97	1.06	1.82	.068
	Reference	27	3.19	0.44		
Community orientation	Intervention	34	3.00	0.78	1.90	.058
	Reference	27	3.05	0.59		
Total Score	Intervention	34	29.19	4.31	0.85	.394
	Reference	27	29.43	2.33		

Table 27 displays the Mann-Whitney Test results for pretest observational ratings. Significant differences were found for two of the nine competencies. Specifically, Intervention Nurses were higher for “management of common conditions ( $p = .017$ ),” and “accessing and using information ( $p = .009$ ).” (Table 27)

**Table 28: Post-intervention Observational Competency Ratings Between the Groups. Mann-Whitney Tests ( $n = 77$ )**

Competency	Group	$n$	$M$	$SD$	$z$	$p$
Problem solving	Intervention	49	3.69	0.75	3.42	.001
	Reference	28	3.14	0.59		
Management of common conditions	Intervention	49	3.79	0.82	2.37	.018
	Reference	28	3.32	0.82		
Rational drug use	Intervention	49	3.81	0.73	4.22	.001
	Reference	28	3.04	0.69		
Communication/counseling	Intervention	49	3.91	0.84	2.00	.046
	Reference	28	3.54	0.64		
When/where to refer	Intervention	49	4.13	0.54	4.27	.001
	Reference	28	3.43	0.69		

Table 28 *Continued*

Table 28 *Continued*

Competency	Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>z</i>	<i>p</i>
Accessing and using information	Intervention	49	3.89	0.77	1.55	.122
	Reference	28	3.68	0.55		
A caring, confident approach	Intervention	49	3.93	0.69	3.47	.001
	Reference	28	3.39	0.50		
General clinic management	Intervention	49	3.48	0.89	1.27	.205
	Reference	28	3.29	0.52		
Community orientation	Intervention	49	3.57	0.78	2.18	.030
	Reference	28	3.19	0.60		
Total Score	Intervention	49	34.25	3.94	2.85	.004
	Reference	28	31.40	3.97		

Table 28 displays the Mann-Whitney Test results for post-intervention observational ratings. Intervention Nurses had significantly higher scores for seven of nine competencies (Table 28).

**Table 29: Observational Gain Scores Based on Group. Mann-Whitney Tests (n = 62)**

	Group	<i>M</i>	<i>SD</i>	<i>z</i>	<i>p</i>
Problem solving	Intervention	0.57	0.91	1.54	.12
	Reference	0.19	0.89		
Management of common conditions	Intervention	0.33	0.83	0.53	.60
	Reference	0.48	0.71		
Rational drug use	Intervention	0.43	0.65	1.36	.18
	Reference	0.23	0.95		
Communication/counseling	Intervention	0.26	0.78	0.02	.99
	Reference	0.27	0.87		
Referral (When and where)	Intervention	0.51	0.57	1.47	.14
	Reference	0.22	0.92		

Table 29 *Continued*

Table 29 *Continued*

	Group	<i>M</i>	<i>SD</i>	<i>z</i>	<i>p</i>
Accessing and using					
information	Intervention	0.40	0.85	1.08	.28
	Reference	0.74	0.88		
A caring, confident approach	Intervention	0.36	0.81	1.16	.25
	Reference	0.12	0.78		
General clinic management	Intervention	0.60	0.72	2.94	.003
	Reference	0.08	0.55		
Community orientation	Intervention	0.50	0.71	1.78	.08
	Reference	0.19	0.56		
Total Score	Intervention	4.87	3.61	3.36	.001
	Reference	1.75	2.98		

Table 29 displays the observational competency gain scores based on group. These comparisons utilized Mann-Whitney tests. Intervention group participants had significantly greater gain in general clinic management ( $p = .003$ ) and the total observational score ( $p = .001$ ). They also tended, though not significantly ( $p = .08$ ), to have gained more in community orientation and were more likely to increase their scores after training (on 6 competencies) than were reference group nurses (2 competencies).

**Table 30: Spearman Rank-Order Correlations for Observational Competency Gains with Demographic Factors ( $n = 55$ )**

	Group <sup>a</sup>	Years as Nurse	Years at Clinic	In-Service Programs
Problem solving	.21	.01	-.06	-.09
Management of common conditions	-.07	.13	-.06	.07
Rational drug use	.18	-.15	-.09	.09
Communication/counseling	.01	.13	.13	.17
When/where to refer	.20	-.13	-.38***	.26*
Accessing and using information	-.15	-.01	-.11	.07
A caring, confident approach	.16	-.21	-.18	.02
General clinic management	.40***	-.37***	-.08	-.15
Community orientation	.24	-.18	.10	-.25
Total Score	.46****	-.21	-.12	.01

\*  $p = .05$ . \*\*  $p = .01$ . \*\*\*  $p = .005$ . \*\*\*\*  $p = .001$ .

<sup>a</sup> Group: 0 = *Reference* 1 = *Intervention*

Table 30 displays the Spearman rank-order correlations between the ten gains in observation ratings and the four demographic factors. Intervention group nurses had more gain for “general clinic management ( $r = .40$ ),” and “total score ( $r = .46$ )”.

Less experienced nurses had more gain for “general clinic management ( $r = -.37$ ).” Nurses with fewer years at the clinic had more gain in “when/where to refer ( $r = -.38$ ).” Nurses who attended more in-service programs had gains on “when/where to refer ( $r = .26$ )” (Table 30).

**Table 31: Prediction of Observational Competency Gain Score Based on Selected Variables ( $n = 55$ )**

Predictor	<i>B</i>	<i>SE</i>	$\beta$	<i>p</i>	<i>sr</i>
Group <sup>a</sup>	3.17	0.94	.44	.001	.42
Years as RN	-0.05	0.09	-.08	.554	-.07
Years at clinic	0.03	0.09	.05	.730	.04
Number of in-service programs	-0.38	0.34	-.14	.271	-.14

Full Model:  $F(4, 50) = 3.45, p = .01, R^2 = .217$ .

<sup>a</sup> Group: 0 = *Reference* 1 = *Intervention*

*sr* = Semipartial correlation

Table 31 displays the linear regression model predicting total observational gain based on the four demographic variables. The overall model was significant ( $p = .01$ ), accounting for 21.7% of the variance in the dependent variable (Table 31). Being a member of the group that received training was strongly predictive of a gain in observational competency ( $\beta = 0.44; p=0.001$ ). About 18% of the variability in observational competency gain could be explained by the training ( $sr=0.42$ ; partial  $r^2 = 0.176$ ).

### ***Loss to follow up***

As shown earlier in Table 15 (p. 119), loss to follow up was a major concern for both the questionnaire and self-test. Despite this, the percentage of participants completing the observation actually increased over time.

**Table 32: Comparison of loss to follow up by group for Questionnaire and Self-Test ( $n = 162$ )**

	Questionnaire Pairs		Total	Self-Test Pairs		Total
	Available	Missing		Available	Missing	
Intervention	39	66	<b>105</b>	43	62	<b>105</b>
Reference	23	34	<b>57</b>	34	23	<b>57</b>
Total	62	100	<b>162</b>	77	85	<b>162</b>

Table 32 shows that there was no significant difference between the intervention and reference group completing both the before and after training questionnaire. ( $\chi^2 = 0.161$ ,  $df=1$ ,  $\alpha = .688$ ) Yet there was a significant difference between the groups completing both the pre and post training self-test. Reference nurses were significantly more likely to have completed both the before and after self-tests. ( $\chi^2 = 5.1781$ ,  $df=1$ ,  $\alpha = .023$ ).

Further analysis of response rate based on the variables; years as a nurse, years at the clinic and number of in-service trainings was done using Mann-Whitney (Table 34).

**Table 33: Comparison of Response Rate based on Years as a Nurse, Clinic Experience and Recent Training. Mann-Whitney Test ( $n=162$ )**

	Dropped out /		P value
	Present both times	present once	
Years as RN(mean; SD)			
▪ Questionnaire	8.47 (6.69)	7.11 (5.88)	0.237
▪ Self Test	8.70 (6.83)	6.67 (5.47)	0.043*
Years at clinic (mean; SD)			
▪ Questionnaire	5.87 (5.15)	4.38 (3.77)	0.119
▪ Self Test	5.57 (4.66)	4.45 (4.21)	0.164
Previous training (mean number of courses; SD)			
▪ Questionnaire	1.6 (1.38)	1.39 (1.35)	0.340
▪ Self Test	1.57 (1.53)	1.38 (1.16)	0.779

\*  $p < 0.05$

Table 33 shows that there was no significant difference between nurses' completion rates of the questionnaire based on years as a registered nurse, years at clinic or previous training. Yet, on completion of the self-test, years as a nurse was a significant determinant of completion rate with more experience nurses having a better response rate ( $p=0.043$ ).

### ***Focus groups***

Two trained facilitators conducted two focus group meetings. The first facilitator ran the first session with five nurses from Site 1 and the second facilitator completed the next focus group with four nurses from Site 3.

Each facilitator was briefed on the scope and nature of the core competency-training course and asked to explore the following four issues with the nurses:

1. Changes in practice
2. Changes in confidence
3. The nurse patient relationship
4. General comments about the course

Each focus group session was conducted in English, tape recorded and then transcribed. The transcriptions and initial coding by site are found in Appendix H. Table 34 shows the color-coding scheme that was used to organize the input from the transcripts. Use of color-coding of responses enabled the preparation of a taxonomy for each major code (Field & Morse, 1985).

**Table 34: Focus group transcript coding key**

Category	Color Code
Major category	<i>Probing</i>
Subordinate category	<i>Dig for information</i>
Explanatory comments	<i>Learn to go beyond what they are saying</i>

Each interview was listened to and reviewed by the focus group facilitators and the researcher. Using the proposition that core competence training leads to changes in practice, confidence, and the nurse-patient relationship, the transcripts were coded by the researcher and then categorized by major and subordinate categories. After the researcher derived the codes and categories, these were compared to the independent analysis provided by each of the two focus group facilitators.

Each facilitator provided the researcher with a summary of common themes and general impressions from each of their focus group sessions. The researcher then compared her findings to those of the two focus group facilitators. This analysis showed common impressions and findings of both the focus group facilitators and the researcher. No areas of disagreement between the facilitators and the researcher were found.

In addition to agreement between researcher and focus group facilitators' findings, the results presented below showed agreement between the two groups' responses during the focus group sessions.

**Table 35: Changes in Competence**

<b>Probing (Interviewing or taking history)</b>	<b>Treatment/ Prescribing</b>
Dig for information	Do not over prescribe
Not superficial in interview (1) Don't just take what patient is saying (1) Learn to go beyond what they are saying (1) Find out problems that contribute to main complaint (1) Take past, present and family history (1) Take history properly (2) Check for previous illness and treatment (2)	Prescribe only after history (1) Give treatment according to findings (1) Differentiate signs & symptoms (e.g. viral vs. bacterial) (1) Know non-drug management (1) Give appropriately according to findings (1)
<b>Examination</b>	<b>Diagnosis</b>
Use inspection Palpation, percussion	Differential diagnoses
No longer take just history and prescribe (1)	Viral versus bacterial infection (1) Fever versus no fever (1) Diagnose minor ailments (2) Refer to books (2)

Table 35 provides the classification for changes in competence. Four major categories were identified, including changes to interviewing techniques, treatment methods, examination, and diagnosis. One participant provided the following example of improved competence in interviewing:

*“If I may go deep in, a patient coming with a chest pain or cough or cough related to chest pain, you ask the patient for how long have you been coughing we have not been doing that previously I for one would just ask the patient when did you start coughing and then after I would just prescribe for the patient we had not been doing, today we ask what does really make you cough, when is cough aggravated? Is anybody coughing at home, is anyone at home with TB, is the pain related to cough?”*

Yet not all nurses felt that these changes in competence were adequate. As one nurse explained, “But we still lack emphasis, that when we compare ourselves with those who have done a full year course we still lack more information.”

**Table 36: Changes in Confidence**

Patient management		Nurse to nurse relationships
Autonomy	Referral	Collegiality
Could solve the problem (1,2) Manage “very ill” (1) No longer go straight to nurse who has done primary health care (1) Remain in clinic alone (2) Greater recognition of what can be managed at clinic (2)	Manage referrals independently (1) Refer appropriately, those sent were “serious” (1,2) Diagnose and refer with greater accuracy (1,2) Recognize cases which need referral (2)	Colleague very cooperative (1) Getting referrals from other nurses (1)

Table 36 provides taxonomy for changes in confidence. Focus group participants described increased self-confidence to manage patients. Nurses explained that they noticed they were able to be more independent and less reliant on the assistance of other nurses and that they could recognize when a patient needed referral. In addition, nurses noted greater confidence in their relationship with other nurses. This improved relationship included greater cooperation and appreciation from other nurses who had not done the training programme.

As one nurse explained:

*“(I) refer appropriately and that made me very confident because I used to make a follow up of my patients only to find that what I have sent is very serious.” And other nurses stated, “...When I presented that day, it was good to me, we have learned a lot. I am no longer asking those who are PHC trained to come and see what is going on.” Finally, another nurse explained her change, “even if I call PHC supervisor she will tell me exactly what I know.” Yet, other nurses’ were more tentative in their newfound assurance*

stating, "I do not think I am much confident but I am much better than before" and "We are a bit confident."

**Table 37: Changes in Nurse-Patient Relationships**

<b>Method of questioning</b>	<b>Connectedness</b>	
More in-depth	Trust	Encourage follow up
Had time to sit and talk (1) Not deterred by patients' reluctance to speak (1) Each patient presents in a unique manner (1) Give self more time (1) Take time to talk with patient's family (1) Don't worry about the queue (2)	All patients are unique (1) Patients' would request this nurse (1) Patients' demand to be seen by this nurse (2) Adolescents able to cry and reveal possible pregnancy (1) Became friends (1)	Encourage those with physical and social problems to return (1)

The focus group discussions also reviewed if and how the relationship between nurses and their patients changed. Two major categories were identified; changes in the method of questioning and feelings of connectedness (Table 37). Although one person did not feel there was a change, others remarked that the manner in which they questioned patients was more in-depth and that barriers to communicating, such as time pressures and patient's shyness, no longer deterred them. Connectedness included enhanced trust and desire to provide a continuum of care.

As one nurse explained "*...during the course we had plenty of time to do this and it improved the relationships because you talk to the patient. The patient could come back and ask to talk to nurse so and so.*" Another participant provided the following example of improved relationships:

*"With me at first, if a patient would not answer my question, I would just prescribe but now I ask another question and then probe, especially teenagers, she would start crying now I ask questions and more questions and then I would ask her if she has a boyfriend and later when she opens up I would then ask about pregnancy tests, and by then we would have become friends."*

Yet another example of improved relationship was:

*"(With) a psychiatric patient, now I usually involve the family, now I also give family therapy so that they accept the patient. If a psyche patient becomes violent or aggressive at home, the family would bring the patient to the clinic and they would say, 'nurse, here is your patient.' They did not know that they were also involved in the treatment of the patient. Previously we did not give*

*ourselves enough time to include the family and talk to them also to educate the family to accept the patient and about avoiding triggering factors.”*

### ***Comments on the Course***

#### ***Course content and duration.***

Focus group participants also provided feedback on the course. Common themes were found, such as the course was practical and relevant to daily work. Even though the course encouraged learning and “*built on what we had*” it is “*just a basic*” and a “*crash course*”. One person commented that work along with study is “very strenuous” and participants from both focus groups felt the course was too short.

#### ***Preceptors.***

Although some nurses expressed appreciation for being able to work with a trained preceptor others identified important and substantial constraints. One nurse explained that her preceptor was always busy and another said:

*“For me I can say it was a bad experience concerning my preceptor, because she did not have time for me, to show me or to maybe allow me time to demonstrate, to rectify my mistakes, maybe we can have a place where we can do that course with one preceptor who is responsible for all of us.”*

#### ***Course Materials.***

There was general agreement in the usefulness and practicality of the training materials although some had difficulty recalling their contents. One participant

expressed that the “scenarios (were) easy and understandable” yet more treatment guides would be beneficial.

### ***Course Recognition.***

Although nurses felt that all clinic nurses need such a course, refreshers are helpful and certification is important. “It must be something that is going to relieve the one year programme”

### ***Trainer Questionnaire***

To gain a better understanding of trainers’ acceptance of the primary care core competency training, 6 primary care nurse trainers completed a brief questionnaire. These trainers all came from setting 3 from which the largest number of participants and controls were drawn. Four questions were posed to the trainers.

### ***Question 1: Appeal of this training program.***

Trainers mentioned a number of things that were appealing about this core competency training program. Trainers discussed concerns about too few nurses being primary care trained and the potential this type of program has in increasing the number of nurses trained in primary care. One trainer explained: *“I am involved in PHC training. We are having difficulty with training enough nurses with the 1-year diploma. At present despite 20 years of training, only 25% of our clinic nurses have completed the diploma.”*

The materials developed and provided to participants and trainers were also attractive. Nurse trainers explained that the materials are “*user friendly*” and are

appropriate and relevant to the level of the clinic nurse. More specifically, these trainers explained that the:

- *“Instructions are clear and to the point”*

And

- *“Information is simple and straightforward, easy to understand”*

### ***Question 2: Course content and logistics.***

This question asked for details on the timeframe used, the layout, content and approach or method employed in the core competency training program.

**2a. Timeframe:** Although one person felt that the timeframe was *“adequate for an introduction”*, most trainers felt the course was too short and at least six weeks of training was needed.

**2b. Layout:** *“very well done and easy to use”*, *“easy to understand”*

**2c. Content:** Trainers felt the content was relevant and *“up to standard”* and covers what a clinic nurse wants. One trainer emphasized, *“as the nurses that participated were all experienced in district clinic work, they were more interested in learning history taking and examination skills.”*

**2d. Approach/Method:** Trainers said the approach was a logical one and that the questions were clear, and equip students’ with necessary skills and not just things that are *“nice to know.”* The use of a core competency framework was well received as was the use of reflection questions and the adult learning approach.

### ***Question 3: Adaptation of the training program.***

Trainers mentioned a few ways in which they adapted the program to meet their students’ unique needs. One trainer wrote, *“We spent more time on diagnostic skills and reasoning. The nurses wanted to discuss patients they had seen and wanted*

*to work under supervision.” Another trainer mentioned that “(We) started from known to unknown, done together with the participants using their own experience.”*

#### ***Question 4: General comments***

Trainers were asked to provide any additional comments about the course. One trainer wrote, *“I enjoyed teaching this course but feel more time should be spent on the above skills. It would be more useful if there were follow-up modules. The other skills can be picked up as one goes along.”* Another trainer added, *“The short course should continue to empower those who haven’t done PHC course with skills.”* Two people encouraged continuing such a short course saying that the course offered, *“...good quality material which should be used in this province”* and *“This was good for those who do not have time to stay here at school because they did it at their districts with their preceptors.”*

## Chapter VI

### *Discussion*

This study aimed to find a solution to the unmet primary care training needs of nurses through the development and evaluation of a training program using a core competency approach. The objectives of the study were: to identify core competencies required for primary care nurses in South Africa; to develop a core competency measurement tool and, to use this tool to evaluate the impact of competence based primary clinical care training on health worker performance.

This study attempted to address some of the limitations identified elsewhere (Rowe et al, 2005) and to explore the hypothetical construct of a “training jump”. The hypothesis that a “training jump” could be achieved through core competency training was field-tested using both qualitative and quantitative measures.

This study contributes to the existing knowledge base on core competence in nursing education and training (Alexander and Runciman; Benner, 1984, 1996; Edelstein et al.1998; Kruger & Dunning, 1999) in its practical approach and application within the constraints of an under-resourced and emerging district health system. In addition, contributions have been made to the understanding of educational materials which are well received by adult learners. The novel training program which relied heavily on the adult learning literature (Caffarella, 1994, Merriam and Caffarella, 1999) as well as the literature on reflection (Burns and Bulman, 2000) was enthusiastically received by both trainers and preceptors.

Using two reference group meetings and a Delphi study, nine core competencies for primary care nurses in South Africa were identified. This

information was then used to develop both a core-competence training program and measurement tool, which included a questionnaire, self-test, and observation. After piloting the measurement tool, field-testing of a core competency training approach was carried out.

Of the 162 nurses who participated in the training program, only 15% had been registered nurses for less than three years. Nearly 70% of nurses had worked for at least three years at the clinic level. Yet, 66% reported having attended one or no in-service training programs in the last six months (Table 13). In other words, study participants were experienced clinic nurses, yet having minimal in-service participation in the last six months. Intervention and reference nurses appeared comparable at baseline. No significant difference in years as a nurse, years at the clinic or number of in-services were found (Table 14) and no significant difference in baseline competence was found (Table 16).

Further analysis showed that there was no significant difference between nurses' completion rates of the questionnaire based on years as a registered nurse, years at clinic or previous training (Table 33). Yet, years as a nurse were an important determinant of self-test completion rate with more experienced nurses having a better response rate.

Of the three assessment methods used, pre-intervention self-tests were most likely to be completed (92%), followed by pre-intervention questionnaires (89%). Considerably fewer participants (38%) completed the lengthier observation tool pre-intervention. This may partly be due to the length of time required to complete this type of assessment and the limited access to a trained observer due to time constraints and/or distance.

However, loss to follow-up was a concern in this study with a high drop out rate for both the questionnaire and self-test (Table 15). Questionnaire completion dropped from 89% to 40% and self-test participation dropped from 92% to fewer than 50%. Interestingly though, this loss to follow up was not consistent across all three assessment measures and completion of the observation tool actually increased from 38% to 48%.

Additional investigation showed no significant difference between the groups on completion of the questionnaire, yet there were significant differences between participants completing both before and after self-test. Reference nurses and nurses with more experience were more likely to have followed through and completed this portion of the study (Tables 32 and 33). This finding is counterintuitive, yet it may be related to study design (lack of randomization) and control, since a large portion of reference group nurses came from one site. These reference nurses were also students, which made them more readily accessible to follow up than any of the other participants.

In addition to loss to follow up, the study findings may have been affected by selection bias. While over 95% of both intervention and reference participants felt that all nine competencies were needed in their job, fewer intervention nurses felt that their learning needs had been met prior to training (Table 17). This self assessed difference in need for training was significant ( $p = .04$ ).

Finally, it is important to note that less than half of all participants felt their learning needs for primary care work had been met since starting work at a clinic. Yet, as previously stated, the cohort of nurses studied was an experienced group with over two-thirds of nurses working at a clinic for more than three years (Table 13).

## *The Impact of Core Competency Training*

### *Questionnaire.*

Nurses' perceptions of their competence as measured by total score of the nine core competency ratings did not differ by group (reference or intervention) either pre or post intervention (Tables 19 & 20). Prior to the intervention, differences in perception of one's competence were noted between the two groups for some individual competencies. When asked on the questionnaire to rate their own ability, reference group nurses graded themselves higher on all nine core competencies prior to the intervention. Yet this higher self-rating was statistically significant for only two of the competencies: 1.) Management of common conditions and 2.) General clinic management ( $p < .05$ ) (Table 19).

After training, the two groups overall assessed themselves comparably. There was no significant difference in their total scores (Table 20). Interestingly, reference group nurses rated themselves significantly higher in one area; general clinic management (Table 20). Again, loss to follow up may have affected these findings since less than half of both groups completed the post-intervention questionnaire.

Although the variable group was not statistically significant for questionnaire competency gain scores, some gains in perceived competence were significantly related to two independent variables: 1.) Nurses with fewer years at the clinic gained more competence related to "a caring, confident approach" ( $r = -.26$ ) and 2.) Nurses having attended fewer in-service programs had significantly greater gains in "general clinic management" ( $r = -.28$ ) (Table 22). This may highlight that more experienced nurses (more years at the clinic or more in-service programs) are less open to learning new things, which agrees with the findings on completion rates.

Upon completion of the study, intervention nurses were given the opportunity to comment on the training program. The most helpful part of the training, according to intervention nurses, was the training on assessment and treatment of patients, including management of common conditions. This input corresponded with nurses responses wherein they feel they had changed most in the one to one care of a client.

### *Self-Test.*

On self-test, both groups improved from pre- to post test, though no significant associations were found between gains in knowledge with group, years as a nurse, years at the clinic and number of in-service programs attended (Table 25). Given that this was a test of core competence, post intervention scores were modest (79% intervention, 81% reference) and show the need for improvement beyond any gains noted in this study.

Table 26 showed that gain in self test score was related to group status in favor of the reference group nurses as well as more experienced nurses. Although not statistically significant, reference group nurses had more years as registered nurses. Given concerns of selection bias noted previously, these findings should be viewed with caution.

It is important to note that both intervention and reference group participants performed weakly in two noteworthy areas; syndromic management of STD's and responding to psychiatric suicidal ideation. The STD case presented on the self-test was a complicated case presenting with multiple symptoms. Similar weaknesses have been noted in the literature, particularly with STD services (Schneider et al. 2001, Bachmann et al. 2004). Suicidal ideation is a significant warning sign and could, with targeting training, be something that clinic nurses respond to more effectively.

### ***Observation.***

The observation tool, although completed by the least number of participants, provided important results. Prior to training, the intervention group received statistically significant higher observed ratings on only two of the nine core competencies: 1.) Management of common conditions ( $p = .017$ ) and 2.) Accessing and using information ( $p = .009$ ) (Table 27). Upon completion of the intervention, the trainees scored higher on all core competencies with seven of nine competencies rated significantly higher ( $p < .05$ ) and four of these nine higher competency ratings significant at the  $p < .001$  level (Table 28). This consistently significant finding across all core competencies supports the hypothesis of a “training jump”.

Pre to post intervention observation scores for all participants were significantly higher for all core competencies (Table 29). Table 29 also showed that while intervention nurses were more likely to increase their scores (on 6 of 9 core competencies), reference nurses gained more in two key areas; management of common conditions and accessing/using information. As the previous paragraph noted, these were the only two areas prior to training that the intervention group were rated significantly higher. This counterintuitive result of reference group nurses gaining more, may reflect a true difference in the groups prior to training and the fact that the reference group nurses had “more to gain” over this time period.

When controlling for group, the gains were less pronounced, and better performance amongst the intervention group became apparent. Nurses who completed the training showed significant improvement in general clinic management and the gain in total observational score was almost three-fold higher for nurses

receiving the training compared to controls (Table 30). Again, this is further evidence of a possible “training jump”.

Table 31 suggests that nurses with less experience seem to gain more, as do nurses who have benefited from recent in-service training. After controlling for years as a nurse, years at the clinic and number of recent in-service programs, the intervention group showed a statistically significant ( $p = .001$ ) greater gain on observation of core competency from pre to post intervention. Thus, when experience and recent training were controlled for, 17.6% of the intervention group’s gain in observed competence could be attributed to the intervention ( $\beta = .44$ , semipartial correlation = .42)

The findings from these three assessment measures (questionnaire, self-test and observation) are mixed and require further investigation. The disparity in pre-intervention results may very well reflect a mismatch between perceived and actual abilities, as explored by Kruger & Dunning with less competent people subjectively overestimating their ability. For example, the reference group assessed themselves higher on the questionnaire, yet performed less well on the pre-intervention self-test. Clear differences in observed competence pre to post intervention between groups was seen, yet findings were less clear using the other two assessment measures: questionnaire and self-test. The findings may also highlight discrepancies in the three assessment methods.

When participants’ gain scores were compared using four independent variables (group, years as nurse, years at clinic and number of in-service programs), a statistically significant negative correlation was found between years at clinic and competencies such as management of common conditions and rational drug use. This

may be attributed to gains made previously through work experience and learning “on the job.”

The trend in higher self-test results for both cases and controls would support a possible carry over effect or test-wiseness. Firstly, familiarity with the test material alone may be responsible for improved performance on the post-intervention self-test regardless of access to training. Although the period between completion of pre and post self-test may be long enough (two or more months) to have obviated direct recall, participants completing a pre-intervention self-test may have been prompted to search out information on the questions asked in the self-test, consciously or subliminally, thereby influencing follow up performance. Findings may also have been affected by contamination between trainees and the reference group. It is possible that controls came into contact with participants over the course of the study period and that training materials or new knowledge were shared.

### ***Focus group discussions***

The two focus group discussions provided further evidence of the values and limitations of this type of training. This method offered a triangulation of findings found in all of the earlier work. Nurses generally felt positive about the relevance of the course to their work, which supports findings from the reference groups and pre and post training questionnaires and the literature (Beaton, McMurdo & Wilson, 1978, Benade, 1992, Evian, 1988, Webber, 1995).

Training participants felt that their competence and confidence both increased, which was also found on the post-training questionnaire. Particular emphasis was given to improved skills in those areas most emphasized in traditional primary care programs, namely physical examination and the diagnosis and treatment of common

complaints. Nurses appreciated new skills in probing, management of common conditions and referral practices. Despite these perceived benefits, the objective observational assessments did not show a marked difference between trainees and the reference group in these areas. Both trainees and the reference groups improved in observed 1.) Problem solving and 2.) Management of common conditions.

Focus group discussions also showed that training participants felt that their confidence had improved and that their relationship with other colleagues had also changed for the better which supports findings in the literature (WHO, 1997).

Nurses appreciated the collaborative relationship they had with other primary care trained nurses, as well as the knowledge that they could manage many conditions (Petersen, 2000, Rothman et al. 2000). Nurses also felt that they were able to make the distinction if and when referral was needed. Actual referral practices were not measured in this study, yet it would appear that there could be a measurable decrease in unnecessary referrals. Further study would help to understand and measure this possible outcome. Although follow up practices were not measured in this study, the frequency of follow up may increase after core competency training. This may occur since some participants expressed greater connectedness to their patients and greater desire to see patients for review. Further study would help to understand and measure this possible outcome.

Important issues concerning the make up of such a course were revealed, including the strong desire for certification and continued access to primary care training, including eventual completion of a SANC approved diploma in the subject. The course was seen to be extremely useful, yet competing time constraints and preceptor lack of involvement weakened learning opportunities.

### ***Trainers' questionnaires***

Finally, the primary care nurse trainers involved in the study completed post-training questionnaires. Their responses offer further support (triangulation) for the relevance and need for core competency training. Their feedback on the course content and methods support those employed in this study, which showed that, on observation, the core competency training improved nurse's competence. Yet, most trainers felt the course was too short and more training time was needed.

In summary, this study found no significant difference between nurses' completion rates on the questionnaire based on years as a registered nurse, years at clinic or previous training (Table 33). Fewer training participants completed the observation prior to training, and loss to follow up on both the questionnaire and self test were concerning. After training, the intervention and reference groups rated themselves comparably. On self test both groups improved pre to post intervention although gains were modest. Upon completion of the intervention, the trainees scored higher on all observations core competency ratings with seven of nine competencies rated significantly higher ( $p < .05$ ). Since the findings from these three assessment measures are mixed, further investigation is warranted to better understand the usefulness of each.

### ***Limitations of the study***

This study aimed to apply research methods to a study group set within real world conditions. The structural limitations were many, including inadequate staffing, lack of adequate numbers of trained primary care preceptors, distance and limited communication infrastructure. This study, therefore, had to take into account the constraints and conditions of primary care service delivery. The strengths as well

as pitfalls of such research, including time and organizational constraints, have been documented elsewhere (Dahl-Jorgensen & Saksvik, 2005). Lack of direction over and reliance on preceptors to facilitate student learning and to use the training materials were seen as important limitations in the roll out of the training and its potential effectiveness. Finally, this study did not ask clients themselves what they felt were the requisite core competencies of primary care nurses in South Africa.

A number of logistical issues had to be addressed, including the desire that the training be completed within functioning health districts and that nurses would be able to continue working full time. The course also needed to be self-contained, since nurses had limited access to additional information, such as libraries and tutors. While these factors limited study control and scientific rigor, these constraints also represent the real world in which nurses' work. As such, they are also strengths of the study in that it has been conducted in an environment as close to actual conditions in the services, which therefore affords this study a higher degree of inference to programs and evaluation methods that will and will not be beneficial and feasible in actual practice.

This district-based core competency training was intended to benefit from the input, enthusiasm and experience of trained preceptors. While considerable effort was made to formally link each student with a trained preceptor, in reality, this was difficult to ensure. Preceptors competing work demands, travel distance, and inadequate communication networks within districts limited this potentially fruitful partnership.

Thus, although we cannot generalize the findings on a probabilistic basis, one can be confident that the settings under which the study was conducted are typical of rural primary care services in South Africa and that the conditions under which

implementation took place are real world conditions facing human resource planners and managers. As such, the findings provide useful insights into strategies for addressing the gaps identified in earlier chapters.

### ***Primary limitations***

Key limitations affecting the interpretation of the study results included selection bias, loss to follow up, and observer bias.

**Selection bias:** Site selection is worthy of special mention since it was a long and cumbersome process. Selection of sites was not random. Site selection was also limited by the need for multiple levels of permission and adequate staffing to carry out the study. One site was easily self-identified by a highly motivated doctor working within the district. This doctor was willing to negotiate entry and permission and to oversee training and evaluation of students. While the first group was being organized, further sites were contacted for potential participation. This was a considerable challenge, given that while many sites identified the need for such training, they lacked the authority or staffing to allow the programme to move forward.

**Loss to follow up:** The response rate for the questionnaire and self-test dropped by nearly 50% each, whereas the observation tool response rate actually increased. This may be due to the fact that completion of the observation involved considerable investment in time and energy on the part of both the trainee and observer. This investment may have enhanced both parties' desire to see the process through to completion.

The questionnaire and self-test were much shorter in comparison and did not require such a personal investment. Yet, further investigation of the potential reasons for loss to follow up was inconclusive. While no significant difference between the

groups' completion of the questionnaire was found, there were significant differences between participants completing both before and after self-test. Reference nurses and nurses with more experience were more likely to have followed through and completed this portion of the study. As mentioned earlier, this finding is counterintuitive and may be related to the lack of randomization and greater control over a large portion of reference group participants. It may also reveal that nurses with more experience are more ready or willing to assess themselves.

**Observer bias:** Since trainers also completed the observation assessment of training participants, findings are limited by the lack of blind evaluation. Although there is discussion in the literature (Love, 1991) of the advantages of internal evaluation, this methodology nevertheless limits the interpretation and generalization of this study's findings. In addition, the possibility of both Halo and Hawthorne effects on the study findings are acknowledged, since nurses knew they were being observed and tested and the preceptors (using rating scales), knew who underwent the training (Polit and Hungler; Babbie, 1998). Additionally, the reference group participants were given attention that would not normally have been the case.

**Validity and reliability of the measurement tools:** Since this study's assessment of core competency training used a new measurement tool, establishing validity and reliability of the assessment measures (questionnaire, self-test and observation) are still in their infancy. Although measures to establish validity included the initial reference group meetings, Delphi study, questionnaires and focus group discussions, work by independent investigators would add value to establishing this approach in the South African context.

Evaluation of consistency of the self-test and observation tool using Cronbach's alpha were mixed, with the self-test showing a low level of consistency,

while the observation portion was close to the accepted coefficient of .80. These findings can possibly be attributed to the multidimensional nature of the self-test, which included a variety of primary care topics as well as a variety of assessment methods. Furthermore, the results were not consistent across the three assessment measures: questionnaire, self-test and observation tool. It is concerning that while that the reference group improved more on the self-test, the results from the observation were directly opposite. On observation, the results were convincingly in favor of a training jump in the intervention group. Notably, the observation tool had the strongest internal consistency of all instruments developed for this study. While nurses who underwent the training were significantly better on only two core competencies before training, after training they were significantly better on seven of the nine (78%) of core competencies.

***Other limitations***

Other drawbacks present in this study were the lack of inter-rater reliability, lack of control for other inputs to nurses' training and competence (co-interventions), sustainability and comparison to other training programs.

**Inter-rater reliability:** One of the major limitations of the observation tool was that no formal inter-rater reliability was feasible, since the study took place in numerous settings and sub-settings. Although training materials and orientation occurred at three central locations (settings 1-3), the decentralized nature of the actual training and assessment occurred in many rural clinics and health centers. Numerous primary clinical care nurses observed participants in many widespread settings.

**Co-intervention:** Since this study took place within functioning district health systems, other training initiatives and programs continued as scheduled by the districts, region or province.

**Sustainability:** Except for the focus group discussions, all other assessment measures occurred soon after completion of the intervention. There is no evidence of long-term impact of the training or sustainability of changes in competence identified in this study.

**Comparison to other primary clinical care training:** This study compared core competency primary care training to no primary care training. Therefore, this study is limited to a comparison to no primary care training. No comparison to other primary care courses can be made.

## Conclusions

To successfully support primary health care, human resource development is required. Nurses, at the forefront of primary care service delivery need support and advancement to fulfill their role. This study aimed to investigate the impact of core competency training on primary care nurse competence and to explore whether core competence training could result in a “training jump” in competence. The five overall study objectives were met:

1. Identify core competencies required for primary care nurses in South Africa
2. Measure core competencies amongst South African nurses before and after a primary clinical care training intervention using a measurement tool.
3. Compare pre and post training competencies amongst those receiving training to controls.
4. Conduct focus group discussions with trainees to assess the perceived impact of a primary clinical care training intervention on professional practice.
5. Make recommendations for primary care nurse training based on the study results.

To begin this investigation, a framework of core competencies was generated through two reference group meetings. Agreement on the role of primary care nurses cannot be assumed and the identification of core competencies can increase role clarification and guide training and assessment. This study identified nine core competencies for primary clinical care nurses in South Africa which were well received and acknowledged as “core” by the overwhelming majority of study participants.

The use of a novel measurement tool, especially the observation assessment method, showed that core competency training is an effective way to significantly improve nurses' competence, as defined by the nine core competencies in this study. Although there was evidence of a carry over effect on the self-test, this was not supported by the statistically significant difference between groups, in favor of trainees, on observation.

This study had a number of significant limitations as outlined above, yet important lessons were learned. Not only did these nurses show great appreciation for the course content and relevance, the preceptors who facilitated this course often shared certain traits. They were energetic and felt a personal responsibility and desire to share the knowledge they had gained through primary care training with their colleagues. They were self-motivated and willing to meet and correspond with the researcher and to complete the training and evaluations. Finally, without prompting, they expressed personal satisfaction in the development and improved practice of their students.

Training participants overwhelmingly expressed need for and appreciation of this type of training. Generally, nurses working at the primary care level found training in physical examination, diagnosis and treatment of common complaints most desirable and helpful to their work. Some trainees also expressed the importance of continuing education, as well as certification, for such training.

## **Recommendations**

Nurses are the main providers of primary care services in South Africa, yet many of these nurses lack training in primary care. This study, through completion of the study objectives, has shown that core competency training can improve observed

clinical performance in the short-term and is highly valued by primary care nurses. Focusing training around core competencies should facilitate rapid expansion of the number of trained primary care nurses in South Africa. Based on completion of the study objectives and the results of this study, the author puts forth the following recommendations for research, education and training, policy and practice:

1. Continue to investigate the relevance of the nine core competencies identified and used in this study. For example, are they universal or context specific and to what extent do these competencies transcend context (rural/urban) or national boundaries? Such research is encouraged at the local (training institution) level, within primary clinical care practice as well as amongst those responsible for human resource development and policy.
2. Further refinement of the course used in this study is needed. Participants felt that more time would be useful, yet time for study is limited by work demands. A greater understanding and delineation of core knowledge and skills may prove useful as would exploring new options in distance learning to improve connectedness between trainers and students.
3. Research is needed to further explore the concept of a “training jump” and its usefulness to nurse training. Although there is some evidence of a “training jump” based on group difference in observed performance of the nine core competencies, further studies, which are able to control for the limitations identified in this study, are encouraged.
4. Preliminary evidence from this study suggests that measures of competence should focus on observational methods rather than self-test assessments. Further research, including psychometrics, would aid in the development and further refinement of these new tools. However, assessment which focuses on

observed performance has substantial human resource implications for the health services in that sufficient numbers of qualified preceptors would need to be in place to conduct such assessments.

5. Further research, which addresses this study's limitations, is needed to more fully assess the reliability of the measurement tool. Additional field-testing of the core competency measurement tool would be beneficial, as would greater statistical analysis, possibly including factor analysis.
6. Standardized assessments of competence can facilitate nurse training. Further development and application of such tools will provide better tracking of human resource capacities and may improve quality of care. Further research on the impact of core competency training on quality of care is encouraged.
7. Core competency training and evaluation should identify specific areas of weakness. Remedial support should be budgeted for as the need arises. This study identified two weak areas 1.) STD management, specifically clients presenting with multiple symptoms and 2.) Psychiatric services, specifically the care of people who are potentially suicidal. Feedback to the relevant districts will be provided.
8. Core competency training which is district based needs to accommodate the schedules and competing demands of working nurses.
9. The evaluation tool developed in this study should be regarded as groundwork. Adequate time to see appropriate clinical cases is needed and the time to administer the tool may need to increase or the assessment areas modified as new research and field-testing warrant.
10. Explore client perceptions and views of core competencies, and whether their views accord with the core competencies identified in this study.

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## **APPENDICES**

# Appendix A

## *Measurement Tool*

### STUDY ON CORE COMPETENCIES OF REGISTERED NURSES WORKING IN CLINICS-2002

#### PART 1 Observation Guide for Data Collectors

Participant number: \_\_\_\_\_

Date: \_\_\_\_\_

District: \_\_\_\_\_

Observer: \_\_\_\_\_

Time began: \_\_\_\_\_

Time ended: \_\_\_\_\_

Rating Scale for Observations

Can Teach	(5)
Can practice independently	(4)
Can do with supervision	(3)
Knows something but needs further support	(2)
Lacks basic knowledge of the topic area, needs immediate support	(1)

**1. Problem Solving:** **Overall Rating 1-5** \_\_\_\_\_  
 The consultation & health assessment skills, recognition of normal and abnormal.  
**Comments:**

**2. Management of common conditions** **Overall Rating 1-5** \_\_\_\_\_  
*[Include handling of minor injuries]*  
**Comments:**

**3. Rational Drug Use** **Overall Rating 1-5** \_\_\_\_\_  
**Comments:**

**4. Communication/Counseling** **Overall Rating 1-5** \_\_\_\_\_  
*(written and verbal)*  
**Comments:**

**5. Referral** **Overall Rating 1-5** \_\_\_\_\_  
*(When and where to refer)*  
**Comments:**

**6. Accessing and using information** **Overall Rating 1-5** \_\_\_\_\_  
*[Adequate documentation i.e. record keeping]*  
**Comments:**

**7. A caring, confident approach** **Overall Rating 1-5** \_\_\_\_\_  
**Comments:**

**8. General clinic management** **Overall Rating 1-5** \_\_\_\_\_  
*[Management of physical, human, financial resources.]*  
**Comments:**

**9. Community Orientation** **Overall Rating 1-5** \_\_\_\_\_  
*[Community change agent]*  
**Comments:**

**Strengths of this nurse:**

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**Additional Comments:**

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**Areas in need of support and development by this nurse:**

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**Additional Comments:**

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*Through direct observation*

**1.1 [CC1] Does the nurse ask...?**

- |                                   |     |    |
|-----------------------------------|-----|----|
| • about duration of illness?      | YES | NO |
| • about symptoms?                 | YES | NO |
| • about possible related symptoms | YES | NO |
| • about treatment tried at home?  | YES | NO |

COMMENTS \_\_\_\_\_

\_\_\_\_\_

**1.2 [CC1] Does the nurse assess ...**

- |  |     |    |     |    |
|--|-----|----|-----|----|
| 1. Blood Pressure (Adults only)                                    | YES | NO |     |    |
| 2. Pulse   |     |    | YES | NO |
| 3. Respiratory Rate (Children always, Adults if symptoms indicate) | YES | NO |     |    |
| 4. Temperature   |     |    | YES | NO |
| 5. The vital signs correctly?                                      |     |    | YES | NO |

COMMENTS \_\_\_\_\_

\_\_\_\_\_

**1.3 [CC1] Does the nurse...**

- |                                  |     |    |
|----------------------------------|-----|----|
| • assess symptom related area?   | YES | NO |
| • assess other relevant systems? | YES | NO |

COMMENTS \_\_\_\_\_

\_\_\_\_\_

**1.4[CC1] What technique(s) did the nurse use?**

- |                     |     |    |
|---------------------|-----|----|
| • Inspection        | YES | NO |
| • Palpation (touch) | YES | NO |
| • Percussion        | YES | NO |
| • Auscultation      | YES | NO |
| • Use of lab data   | YES | NO |

**1.5 [CC1] Is the nurse able to recognise normal signs from abnormal signs?**

YES NO

No opportunity

COMMENTS \_\_\_\_\_

\_\_\_\_\_

## 1.6 [CC2] Does the nurse...

- write down an assessment/diagnosis? YES NO
- What was the nurse's diagnosis \_\_\_\_\_
- COMMENTS \_\_\_\_\_
- 

## 1.7 [CC2] What is the quality of the diagnosis? (check one)

1. Non-specific diagnosis (symptom related) \_\_\_\_\_
  2. Specific medical diagnosis \_\_\_\_\_
  3. In your opinion, was the diagnosis accurate? YES NO
- COMMENTS \_\_\_\_\_
- 

## 1.8 [CC2] In the case of a child, does the nurse

- Assess the Road to Health Card for
  1. immunization status? YES NO
  2. weight gain? YES NO
- Ask the caregiver about the child's diet? YES NO

COMMENTS \_\_\_\_\_

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*Does the nurse ...*

- 5.1 [CC2] identify warning signs in the case observed? YES  
NO Not Applicable
- 5.2 [CC5] make a referral if needed? YES NO  
Not Applicable
- 5.3 [CC5] refer to the appropriate person/health facility? YES NO  
Not Applicable
- COMMENTS \_\_\_\_\_
- 

*Does the nurse use [CC4] ...*

- 7.1 Active listening (listening for both words and feelings)?  
YES NO  
*Use of questions such as "It sounds like..."*  
*"Did that make you sad, scared, tired, sore, worried etc?"*
- 7.2 Patience? YES NO  
*As demonstrated by giving client time to feeling comfortable, safe, allowing time to ask questions, etc.*  
*Nurse sits to take history*
- 7.3 Maintenance of privacy? YES NO  
*Room or area is free from disturbances, interruption. If client is examined only examined part is exposed, etc.*
- 7.4 Accepting body language? YES NO  
*Greets with a smile, shows openness with arms, touch or gestures, which are culturally appropriate.*

COMMENTS \_\_\_\_\_

- *Observe for the following traits;*
- *Check ( 4) box if behavior is observed*
- *Leave blank if behavior is not observed*

Positive traits [CC4/7]

- 4.1 Greets client (empathetic, respectful and honest) ⇔
- 4.2 Asks client about themselves ⇔
- 4.3 Listens actively, questions effectively ⇔
- 4.4 Helps negotiate change or treatment ⇔
- 4.5 Explains clearly and correctly ⇔
- 4.6 Return for follow up encouraged ⇔

Negative traits

- 4.7 Judgmental ⇔
- 4.8 Critical ⇔
- 4.9 Gives orders without negotiation or discussion ⇔

=====

*After the nurse has seen the patient*

*Ask the nurse...*

1.8 [CC1] How do you determine who you will perform physical exam on?

\_\_\_\_\_

\_\_\_\_\_

1.9 [CC1] How do you determine what areas you need to examine?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

*Ask the nurse...*

6.5 [CC9] What is the expected number of diarrhoea cases at your clinic per day?

\_\_\_\_\_

6.6 [CC8] What number of hypertension patients is compliant; i.e. receive monthly (or three monthly\*) checkup medicines in your clinic? (the nurse can use any available clinic data to answer this question)

*\* After a hypertensive patient is stabilised on treatment, they can be seen every three months.*

**Assess whether the nurse sees self as part of team with community**

Ask the nurse to show you a past report from a clinic committee meeting. Assess for the following;

9.1 [CC8/9] Were issues relevant/important to this community? YES NO

Explain; \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9.2 [CC8/9] Do you have the opportunity to involve people from the community in your work?

If yes, how is this done? Please explain;  
\_\_\_\_\_  
\_\_\_\_\_

**Ask the nurse;**

9.3 [CC9] Do you know how many people are served by this clinic? Please explain

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9.4 [CC8/9] How are the needs of the community assessed?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9.5 [CC8/9] Are clients' opinions of care assessed? YES NO

9.6 If YES, how is this done? [CC8/9]  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9.7 What makes it difficult for patients to get care in this area? [CC8/9]

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9.8 What resources do you have for HIV/AIDS prevention? [CC8/9]

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**[CC8]** Stock card assessment (only needs to be done once for each clinic)

For each drug check if: stock balance on card equals the stock on hand

[stock on card = stock on hand]

8.1 AMOXYCILLIN 250 MG CAP	YES	NO
8.2 CIPROFLOXACIN 250 MG TAB	YES	NO
8.3 PARACETAMOL 500MG TAB	YES	NO
8.4 METRONIDAZOLE 200 or 400 MG TAB	YES	NO
8.5 AMOXYCILLIN 125MG/5ML SUSP	YES	NO

8.6 What is the budget for your clinic per year?

8.7 Who drew (or made up) this budget?

8.7 How do you know whether you are staying in your budget?

8.8 Can you show me the budget records? YES NO

8.9 Who accounts for the expenditure of this clinic?

=====

**[CC2/3]** Choose a patient with either an STD, Chronic disease or minor ailment e.g. minor cough or cold seen by this nurse;

Diagnosis \_\_\_\_\_

3.1 How many items are written per prescription [items/Rx]

3.2 How many of the above items are on the *Essential Drugs List* [ \_\_\_ #/total # prescribed]

3.3 Did the nurse provide education about the drug(s)

(e.g. dose, frequency, side effects)

YES NO

3.4 Did the nurse provide education on non-drug treatment?

YES NO

=====

**[CC4/7]**

Exit interview, ask a client seen by the nurse the following;

7.5 Did you feel listened to today?

YES NO

7.6 Do you feel your needs were met by the nurse today?

YES NO

(Comments) \_\_\_\_\_

\_\_\_\_\_

Participant number: \_\_\_\_\_

**Part 2**  
**Self Test**

FOR THE NURSE TO COMPLETE ON HER OWN:

*A woman comes to your clinic complaining of vaginal discharge. She explains that her last menstrual period finished two days ago and that she is on oral contraceptive pills. On examination you see that she has a small ulcer on the genitalia.*

1. [CC 2.1] What drugs would you use to treat this patient?

2. [2.2] What advice (health education) would you give this patient?

3. [2.3] A man on DOTS continues to cough and lose weight. What should you do?

---



---

4. [2.4] What does syndromic management of sexually transmitted diseases (STD's) mean?

---



---

5. [2.5] What is a common side effect of chlorpromazine?

---

6. [2.6] For what condition do we give chlorpromazine?

---

7. [CC 4.10] A nurse has spent some time counseling a man with an STD. He says he is not doing well these days. He lost his job two weeks ago and is fed up with everything. He feels like he wants to die. What would be an essential question that he would need to be asked at this point?

---



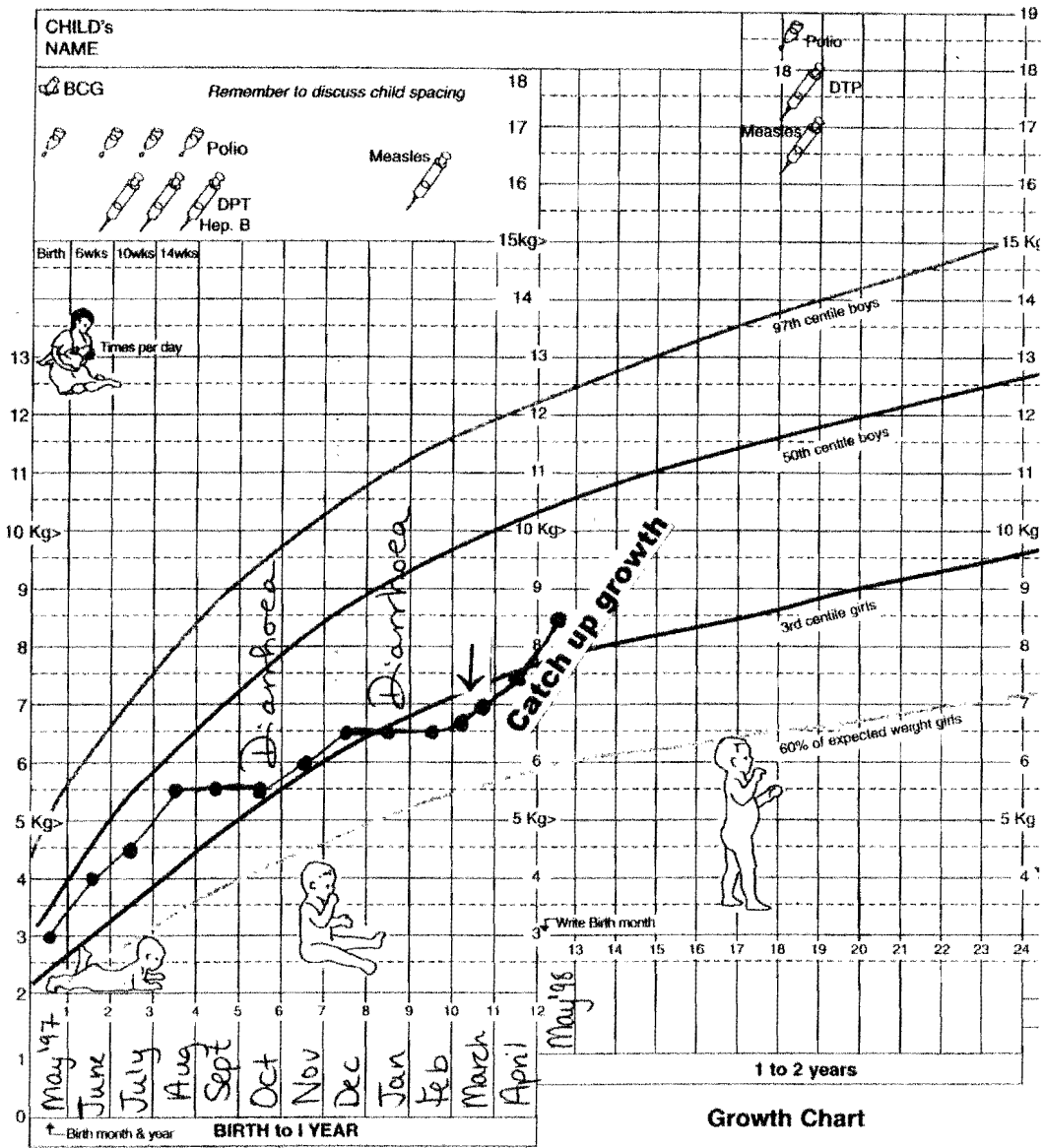
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*Which of the following patients would you refer?*

- |   |       |
|---|-------|
| 8. [CC 5.3] A pregnant women with diabetes                                | REFER |
| NOT REFER   |       |
| 9. [5.4] A pregnant woman with mild eczema                                | REFER |
| NOT REFER   |       |
| 10. [5.5] A pregnant woman with a repeat BP of greater than 160/100 mm Hg | REFER |
| NOT REFER   |       |
| 11. [5.6] A pregnant women with a history of a previous caesarean section | REFER |
| NOT REFER   |       |
| 12. [5.7] A women seen at 6 weeks post natal whose speech is confused     | REFER |
| NOT REFER   |       |

- 13. [5.8] A child who has diarrhoea and mild headache REFER  
NOT REFER
- 14. [5.9] A child who has diarrhoea, is lethargic and has sunken eyes REFER  
NOT REFER
- 15. [5.10] A child who is very low weight for age REFER  
NOT REFER
- 16. [5.11] A child with cough and chest in-drawing (recessions) REFER  
NOT REFER

Complete the following question using this Road to Health Card;



17. [CC 6.10]  
Comment on the growth curve of this child

---



---



---



---

18. [6.7] When you have a question, which relates to your work, where do you get the answers?

---

---

19. [6.8] Do you refer to books, manuals or another source of information to answer a clinical problem?

YES NO

20. [6.9] What books or manuals do you refer to?

---

---

---

Read the case below and then refer to the National Standard Treatment Guidelines and Essential Drugs List to answer the following questions.

*A client comes to the clinic after 3 months of trying to manage his blood pressure through lifestyle changes. No medications were prescribed at the last visit for his BP of 160/94. His blood pressure is now 164/96.*

21. [6.10] What is the next step in his treatment?

---

---

---

22. [6.11] When should he return for follow up?

---

---

---

Use of the Daily "tick" register,

23. [6.1] What is exclusive breastfeeding?

---

---

24 [6.2] Should all children under five be weighed at every visit?

YES NO

Answer the following;

25. [CC 8.6] What would you do if your baunometer broke today?

---

---

---

26. [8.7] Your otoscope was sent for repairs a month ago and hasn't come back. What is your next step? (e.g. phone call, fill in another form, etc)

---

---

---

27. [CC 9.9] If you saw two cases of bloody diarrhoea on Monday and then saw three more cases of bloody diarrhoea on Wednesday, what would you do?

---

---

---

THE END

***Thank you for taking the time to complete this questionnaire  
We hope you found it a good learning experience***

References:

- *Standard Treatment Guidelines and Essential Drugs List 1998*. Essential Drugs Programme Pretoria: National Department of Health
- *Using Stock Cards to Improve Drug Management* (Kwik-Skwiz #13)
- *Collecting and Using Drug Use Indicators in Districts* (Kwik-Skwiz #19)
- *Report on an assessment of stock card use and prescribing indicators* (Durban Metro, District Drugs Task team)
- *KwaZulu-Natal Midwives Handbook for use in District Clinics*; KwaZulu-Natal Department of Health April 1997
- *Integrated Management of Childhood Illness: South African Generic Guidelines*
- *The Quality of Supervisor-Provider Interactions in Zimbabwe*: Center for Human Services, Bethesda: USAID

## Appendix B

### *Pilot Study Results*

The pilot study was conducted in Impendle Pholela Underberg located in a rural health district west of Pietermaritzburg, kwa Zulu Natal.

This ISDS site was chosen as the pilot site because district based PHC training has recently taken place there amongst all clinic staff but no formal follow up evaluation was done. This pilot would serve a dual purpose of piloting the measurement tool as well as providing a formal evaluation for this district's recent training.

The pilot study conducted in early 2001, was coordinated by the ISDS facilitator for this district. There were two evaluators who collected the data for the pilot, one was a nurse training from the local nursing college and the second was a nurse trainer within the ISDS programme.

The number of nurses evaluated in the pilot was nine (n=9). On average, each evaluation took one and one half hours to complete. The evaluators said that their time was lengthened by the nurse's need to verbalise frustrations as well as time taken to teach or exchange information. This was particularly the case if the nurse "might be a danger to the client". This initial sample took three days to complete.

After completion of the pilot evaluations, a meeting was arranged to obtain formal feedback from the evaluators and pilot study coordinator. The feedback focused on necessary changes that would need to be made to the tool. The most common reasons for changes were question ambiguity and logistic constraints.

#### Findings:

- The nurses' overall competency rating was 3 "Can do with supervision"
- Many areas were difficult to make clear statements on. Similar numbers of nurses did things correctly and incorrectly.  
This agrees with Grace's statement that some nurses were strong and some weak despite same training.
- Almost all nurses are able to recognize normal from abnormal signs.
- The quality of diagnosis needs to be improved. Use of non-specific diagnoses is still common. Some nurses recognised chronic conditions but missed other diagnoses in the same patients.
- Most nurses assess the road to health card for immunisation status but not for weight gain or ask mother about diet. Also, there were not enough children to be assessed, since 4 out of 9 nurses did not have a child to see when the evaluator was there.
- Nurses maintain privacy, show patience and accepting body language but need to improve active listening
- Quality of STD syndromic management could not be assessed because no STD patients were available at the times of evaluation

- Many positive communication/counseling traits were identified such as greeting the client, showing empathy, respect and honesty as well as listening actively and questioning effectively. Yet, active listening was given a low rating earlier. No negative traits were identified. (Judgmental, critical or giving orders)
- Community involvement was rated high
- Stock card assessment needs to be improved. One essential drug was out of stock and stock on card did not equal stock on hand 16 times.
- Nurses averaged 2 items per prescription and all items were on the EDL. Great news.
- Most nurses were able to tell the difference between normal and abnormal child growth, only one nurse showed a concerning lack of knowledge in this area.
- Exit interviews with clients were very positive. All clients available said they felt listened to and felt their needs were met.

The pilot made it clear that the evaluators would need detailed instruction before conducting the evaluation as well as time to reach consensus on what to expect as a minimum standard. In addition to suggested changes, a list of instructions for the next study evaluators was drawn.

#### Instructions for evaluators

- Evaluators need to know what to expect as a minimum
- Evaluators need to know that they can question the nurse along with direct observation
- Evaluators need to do questions 7.5 and 7.6 (exit interview with a client) first to reduce the chance of missing a person who was seen by this nurse. It proved difficult to find the patient after finishing up with the nurse.
- Question 8.7 Evaluators may have to check what would be the correct answer first for this clinic/district.
- Arrange with district coordinator before arrival so that clinic nurses know you are coming and what to expect.

## Appendix C

### *Pre-training questionnaire*

Participant number \_\_\_\_\_

***Tell us about yourself*** (you do **not** need to put your name on this form)

- How many years have you been a registered nurse? \_\_\_\_\_
  - Where did you complete your general nursing? \_\_\_\_\_ (Nursing college, university)
  - How many years have you worked in a clinic? \_\_\_\_\_
  - Where did you work before this clinic?
- 
- 

Please list any advanced diplomas or certificates you have after general nursing

- 1.
- 2.
- 3.
- 4.
- 5.

In the last 6 months, what in-service programmes have you attended?

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Below is a boxed diagram that has been developed as part of a Ph.D. study on nurse training and core competencies. It outlines the main areas a clinic nurse should be good at.

We would like to hear what you think about this.

<b>1. Problem Solving:</b> The consultation & health assessment skills; recognition of normal and abnormal.
<b>2. Management of common conditions</b>
<b>3. Rational Drug Use</b>
<b>4. Communication/Counseling</b>
<b>5. Referral</b> (When <i>and where</i> to refer)
<b>6. Accessing and using information</b>
<b>7. A caring, confident approach</b>
<b>8. General clinic management</b>
<b>9. Community Orientation</b>

*Let us know what you think...*

1. Are there any competencies that need to be added in addition to the eight listed above? Please list them,

---



---



---



---



---



---

2. Using the scale below; to what extent do you feel your basic training prepared you to achieve these competencies?

**Problem Solving:**

**The consultation & health assessment skills; recognition of normal and abnormal.**

I knew Nothing 1	I knew something 2	I could do with supervision 3	I could practice independently 4	I could teach to others 5
------------------------	--------------------------	-------------------------------------	--	---------------------------------

**Management of common conditions**

I knew Nothing 1	I knew something 2	I could do with supervision 3	I could practice independently 4	I could teach to others 5
------------------------	--------------------------	-------------------------------------	--	---------------------------------

**Rational Drug Use**

I knew Nothing 1	I knew something 2	I could do with supervision 3	I could practice independently 4	I could teach to others 5
------------------------	--------------------------	-------------------------------------	--	---------------------------------

**Communication/Counselling**

I knew Nothing 1	I knew something 2	I could do with supervision 3	I could practice independently 4	I could teach to others 5
------------------------	--------------------------	-------------------------------------	--	---------------------------------

**Referral (When and where to refer)**

I knew Nothing 1	I knew something 2	I could do with supervision 3	I could practice independently 4	I could teach to others 5
------------------------	--------------------------	-------------------------------------	--	---------------------------------

**Accessing and using information**

I knew Nothing 1	I knew something 2	I could do with supervision 3	I could practice independently 4	I could teach to others 5
------------------------	--------------------------	-------------------------------------	--	---------------------------------

**A caring, confident approach**

I knew Nothing 1	I knew something 2	I could do with supervision 3	I could practice independently 4	I could teach to others 5
------------------------	--------------------------	-------------------------------------	--	---------------------------------

**General clinic management**

I knew Nothing 1	I knew something 2	I could do with supervision 3	I could practice independently 4	I could teach to others 5
------------------------	--------------------------	-------------------------------------	--	---------------------------------

**Community Orientation**

I knew Nothing 1	I knew something 2	I could do with supervision 3	I could practice independently 4	I could teach to others 5
------------------------	--------------------------	-------------------------------------	--	---------------------------------

3. After completing post basic study, how prepared were you in these competencies?

List the post-basic courses you are referring to:

---



---

**Problem Solving:**

**The consultation & health assessment skills; recognition of normal and abnormal.**

I knew Nothing 1	I knew something 2	I could do with supervision 3	I could practice independently 4	I could teach to others 5
------------------------	--------------------------	-------------------------------------	--	---------------------------------

**Management of common conditions**

I knew Nothing 1	I knew something 2	I could do with supervision 3	I could practice independently 4	I could teach to others 5
------------------------	--------------------------	-------------------------------------	--	---------------------------------

**Rational Drug Use**

I knew Nothing 1	I knew something 2	I could do with supervision 3	I could practice independently 4	I could teach to others 5
------------------------	--------------------------	-------------------------------------	--	---------------------------------

**Communication/Counselling**

I knew Nothing 1	I knew something 2	I could do with supervision 3	I could practice independently 4	I could teach to others 5
------------------------	--------------------------	-------------------------------------	--	---------------------------------

**Referral (When and where to refer)**

I knew Nothing 1	I knew something 2	I could do with supervision 3	I could practice independently 4	I could teach to others 5
------------------------	--------------------------	-------------------------------------	--	---------------------------------

**Accessing and using information**

I knew Nothing 1	I knew something 2	I could do with supervision 3	I could practice independently 4	I could teach to others 5
------------------------	--------------------------	-------------------------------------	--	---------------------------------

**A caring, confident approach**

I knew Nothing 1	I knew something 2	I could do with supervision 3	I could practice independently 4	I could teach to others 5
------------------------	--------------------------	-------------------------------------	--	---------------------------------

**General clinic management**

I knew Nothing 1	I knew something 2	I could do with supervision 3	I could practice independently 4	I could teach to others 5
------------------------	--------------------------	-------------------------------------	--	---------------------------------

**Community Orientation**

I knew Nothing 1	I knew something 2	I could do with supervision 3	I could practice independently 4	I could teach to others 5
------------------------	--------------------------	-------------------------------------	--	---------------------------------

## 4. Where are you now in each competency?

**Problem Solving:**

**The consultation & health assessment skills; recognition of normal and abnormal.**

I know Nothing 1	I know something 2	I can do with supervision 3	I can practice independently 4	I can teach to others 5
------------------------	--------------------------	-----------------------------------	--------------------------------------	-------------------------------

**Management of common conditions**

I know Nothing 1	I know something 2	I can do with supervision 3	I can practice independently 4	I can teach to others 5
------------------------	--------------------------	-----------------------------------	--------------------------------------	-------------------------------

**Rational Drug Use**

I know Nothing 1	I know something 2	I can do with supervision 3	I can practice independently 4	I can teach to others 5
------------------------	--------------------------	-----------------------------------	--------------------------------------	-------------------------------

**Communication/Counselling**

I know Nothing 1	I know something 2	I can do with supervision 3	I can practice independently 4	I can teach to others 5
------------------------	--------------------------	-----------------------------------	--------------------------------------	-------------------------------

**Referral (When *and where* to refer)**

I know Nothing 1	I know something 2	I can do with supervision 3	I can practice independently 4	I can teach to others 5
------------------------	--------------------------	-----------------------------------	--------------------------------------	-------------------------------

**Accessing and using information**

I know Nothing 1	I know something 2	I can do with supervision 3	I can practice independently 4	I can teach to others 5
------------------------	--------------------------	-----------------------------------	--------------------------------------	-------------------------------

**A caring, confident approach**

I know Nothing 1	I know something 2	I can do with supervision 3	I can practice independently 4	I can teach to others 5
------------------------	--------------------------	-----------------------------------	--------------------------------------	-------------------------------



- What programme(s), if any, would you remove from this list of your main work areas?
8. When you started working in a clinic, you had specific new learning needs.
- What were these?
  - Have they been met?

*We appreciate your input to this evaluation. Thank you for your time.*

*Sincerely,*

*Susan Strasser RN, MSN, MPH  
Ph.D. student UCT*

## **Appendix D**

*Core Competency Training Manual*

### **Empowerment through Education**



**A District Level Primary Care  
Orientation Programme**

**For the Clinic Nurse**  
(VERSION 1.2)

**S. Strasser**

*"Nurses are the Backbone of Primary Care"*

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## About This Programme

*“We train for certainty and educate for uncertainty”*

### **Goals of the training programme:**

1. To review essential knowledge and skills (9 core competencies) for your work as a clinic nurse
2. To encourage you to develop your own support group with other clinic nurses, which promotes continued learning
3. To provide resources and information which encourage your own “life long” learning

(These learning goals will be addressed through a variety of teaching styles specific to the learning needs of registered nurses as experienced adult learners)

This programme is a beginning step in improving PHC practices. Nurses are the backbone of this system. This training programme aims to work with registered nurses working in clinics to identify, discuss and practice the most essential skills and abilities they need to work at the clinic level. The success of this programme requires the support and encouragement of clinic supervisors, the district management team and district medical staff.

This training programme is practical and developed to run with the needs and restraints of district health workers in mind. This programme does not replace formal courses in primary health care or clinical skills. This programme can best be described as a short, intensive orientation programme for registered nurses who have not yet had the opportunity to complete a “PHC course” or nurses who have recently completed such a course and who are just beginning their work in a clinic.

You should benefit from this programme. It speaks to the competencies of all clinic nurses. The unique needs and concerns within your community and district health system are also addressed.

This programme is student centred. It emphasises discovery for oneself and uses adult learning principles. There are no formal lectures. Exercises and practice sessions are available to guide and focus learning, discussion and reflection. This programme encourages simulating real experiences, doing the “real thing” and reflecting on this process.

### **People generally remember**

**10% of what they read**

**20% of what they hear**

**30% of what they see**

**50% of what they hear and see**

**70% of what they say and write**

**90 % of what they say as they do something**

Adapted from: Centre for Human Development, PEP programme, Pleasant Hill, CA.

## Format of Each Module

This training programme covers nine core competencies of clinic nurses. These are divided into eight modules. (Two competencies are combined in one module)

The modules include learner outcomes required readings, a list of key terms, required readings as well as activities and practice session ideas. Small group work is encouraged through case studies, role plays and exercises.

To evaluate your progress, refer back to the learner outcomes at the end of each module. Reflection questions are included to encourage you to think more critically about the work you do and what you are learning.

## Tips for working in small groups and on your own:

When you work on these materials with other nurses,

1. Establish Ground Rules for your small group
  - A. Active listening (listening with all your senses; eyes, ears, heart)  
“We all agree to listen with our eyes, ears and heart”
  - B. Share the time (provide space for quieter people, avoid one person “taking over”)  
“We will work to see that everyone has a chance to speak and participate”
  - C. Right to Pass (no one should feel pressured to share or do something they feel uncomfortable with)
  - D. No put downs (only words of encouragement and constructive questions should be allowed)
  - E. No names, No gossip (what is shared in the group stays there, confidentiality helps to create a safe space for participants)
  - F. Feel free to add other ground rules
  
2. Take time to reflect on what you are learning. Ask yourself;
  - Is this helpful?
  - What worked well? What did not work well?
  - What makes me excited to learn more?

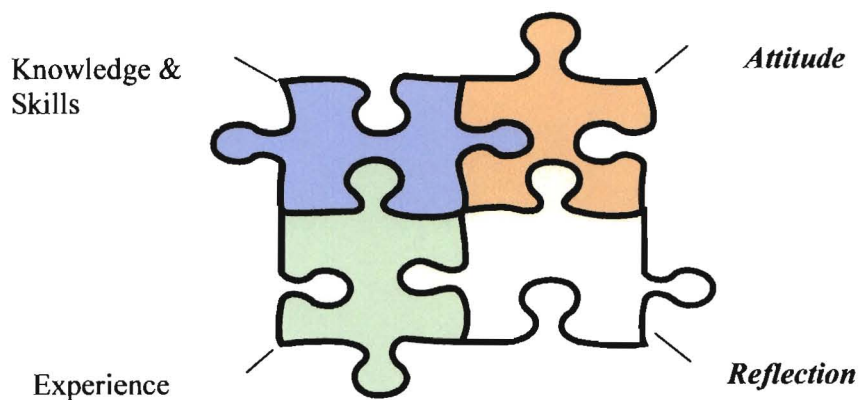
Reflection questions are provided with each session (module). Take time to discuss at least some of these questions with your co-workers/clinic supervisors. Reflection time is a valuable part of learning, and will help you to integrate new information and ideas.

3. Pace yourself. Set a timeline for when you want to complete each module and try to stick to it. Make agreements with others to work together and motivate each other.

## The Importance of Reflection

To uncover barriers to change and to move towards greater understanding and improved care takes not only new knowledge or new skills. As shown in the diagram below, *reflection* is needed. **In fact, reflection is the glue that holds the puzzle together.**

This manual will help facilitators and trainees to reflect on barriers to change in their real work setting but also to brainstorm possible solutions.



*"Reflection is the glue that holds the puzzle together"*

**Source: Centre for Human Development, PEP programme, Pleasant Hill, CA.**

4. Encourage clinic supervisors and programme coordinators to be a part of this programme. Remember that training and development programmes are not an end in themselves, but one part of your life long learning. You will continue to learn, reflect on new information and adapt this in your work. To achieve maximum benefit from this time together, support and motivation are essential! Support each other.

## Ideas for facilitators

### *What does it mean to be a facilitator of learning?*

**“The ideal learning companion is someone who gives the learner a chance to talk about what he or she has learned, and who can bring kindness and creativity to help the learner find solutions when stuck. By being a good listener and an encourager, you can make a very big difference”**

#### *1. Be a good listener, supporter and reflector*

You help him or her learn from experience; you invite more thinking. Good listeners often say things like:

“So you feel...(motivated, confused, excited, etc.)?”

“I know what you mean.”

“I’d like to understand more about how you feel. Would you tell me more?”

#### **Celebrate progress,**

“You have really learned a lot.”

“It looks to me as if you are making real progress.”

“What have you learned?”

“What do you think you are doing better at?”

**Be a reflector.** You may sense what the learner is feeling or experiencing.

“You seem very worried about being able to...”

“You wish you know the answer.”

“You are really trying hard, aren’t you.”

#### *2. Help the person review what he or she has learned.*

Ask questions like:

“What did you learn from this activity?”

“Were there specific ideas that seemed especially helpful?”

“Did you write anything you would like to share?”

#### *3. Help the person get unstuck*

If the learner says he or she can’t make something work, ask questions like:

“What have you already tried?”

“Has anything worked?”

“What else might you try?”

You can then suggest additional ideas that may be helpful in guiding the learner.

Share what you are learning as well.

**Adapted from: S. Covey (1998). Things That Matter Most, Applying the 7 Habits at Home Franklin Covey**

**Preparation**

The time needed to complete this programme will vary depending on your experience with primary clinic care and background knowledge. The expected (estimated) time needed to complete each task is provided. The manual including group activities and practical sessions, should be able to be completed in 10 full days. The manual is meant to be flexible and easily adapted to the needs of your group and district. Time spent on practical sessions will prove valuable and are worth the effort and time.

You will need:

A training manual

An Essential Drug List and Standard Treatment Guideline Booklet

Copies of required reading and text

Pens, pencils and writing paper

Designated time to work on materials alone and with others

The opportunity and time for practical sessions

### *Evaluation*

After each unit, take time to review the learner outcomes. Review any areas which remain unclear. Seek help from others as is needed.

After each session of working on the manual ask, "*how can I put into practice what I have learned?*" Think about one or two changes you could make.

### Outline of the Curriculum

<b>Core Competency</b>	<b>Area(s) of emphasis</b>	<b>Time frame</b>
1. Health assessment skills; history taking and physical examination	History Taking Evaluation of a complaint Recognition of normal and abnormal findings	2 days (16 hours)
2. Management of Common Conditions	Developing a diagnosis Use of standard treatment guidelines and the EDL	2 days
3. Rational Drug Use	Essential Drugs Rational Prescribing Drug and Non-Drug Treatment	1 day
4. Communication & Counselling	Communication Techniques Blocks to Communication	½ day then integrated in cases and practical training
5. Referral & when and where to refer	Warning signs Critical pathways of care in the DHS and beyond	½ day
6. Accessing and using information	EDL District information Provincial information National Updates “What questions do you have, where can you get the answers?”	½ day
7. Caring/Confident Approach	Develop district’s code of conduct Review patient rights, Discuss rights of health workers Discussion of role and responsibility Chain of command Dealing with stress, Team building	Included in #4 above
8. Clinic Management	General principles which can then be applied to a target need of the district	1 day
9. Community Orientation	General principles which are then applied in ongoing case studies and practical setting	1 day

### ***Core Competency #1***

Health assessment skills; history taking and physical examination  
Recognition of normal and abnormal findings

***Learner Outcomes:***

***When you have completed this unit, including required reading, activities, practice and reflection, you should be able to:***

- State the principles of taking a health history in both adults and children
- Perform a general physical examination of an adult
- Perform a general physical examination of a child
- Complete a health history and physical examination for common signs & symptoms in your health district (e.g. fever, back ache, vomiting and abdominal pain)

***Required Reading:***

ZEDAP module: History Taking and Examination (This should be given to participants before the training begins. Participants are expected to read it before the first session.)

***Activities:***

1.) Read the History Taking and Examination book.

- As you read it, write down any terms which you need to look up. Take time to look these new terms up and become comfortable with them. If they are in this book, they are used often and worthwhile to learn.
- Also, as you read it, write down any assessment techniques which you have not yet learned or need practice on. (For example, listening to heart sounds, looking in the ear with an otoscope, feeling for the liver, etc.) Ask a PHC nurse to help you learn these assessment techniques. Remember to focus on the common signs, not things that you will rarely see.

2.) After reading the History Taking and Examination book, work through the following pages.

## THE ESSENTIALS OF... History taking and physical examination

### **The Importance of Interviewing**

- ✓ Interviewing is the key to an accurate diagnosis
  - *Good history taking is extremely important.*
    - *It can provide a majority of the information needed to make an accurate diagnosis*
  - *A good history can be more informative than a physical exam!*
- ✓ Some experts' say that 80% of data needed to make a diagnosis comes from the interview!
- ✓ Good interviewing skills build confidence and trust between the nurse and patient

#### Discussion questions:

- ✓ From your experience, why do you think interviewing might be so important?
- ✓ Would you ever not bother to take a health history? When? Why?
- ✓ In what situations might you take even more time to discuss something with a client?

### **Confidentiality**

**Confidentiality is keeping what is shared between the patient and health worker private.**

**Trust and honesty between a patient and a nurse are important for an accurate diagnosis as well as successful treatment**

#### Discussion questions:

- If confidentiality is so important, why might you be forced to break it?
- How do you encourage honesty when you are working with a patient?
- When might it be difficult to remain confidential? How does this make you feel?

### In Summary;

- History taking can provide as much (and even more) information than a physical exam.
- It is worth the time and effort to hear the person's story and to take a health history and to evaluate the complaint fully.
- Rushing to examine someone without talking first is poor health care practice.
- Rushing to a diagnosis without first taking a history and exam is an inadequate health care practice.

#### ***How do I encourage discussion with a patient?***

- Provide a private and caring environment
- Welcome and sit with the patient
- Then, start the discussion using open-ended questions

*"Tell me about..."*

*"What does the pain feel like?"*

Discussion questions:

Write down some things you can do to make a patient comfortable.

#### **Encourage discussion!**

Starting with open-ended questions encourages the patient to talk. ***Open-ended questions*** cannot be answered with a simple "yes" or "no".

Examples of open-ended questions include; "Tell me about the headache?" "Please describe the stomach pain".

***Closed questions*** encourage "yes" or "no" answers and specific responses.

Examples of closed questions include, "Do you have any blood in your urine?" or "Do you feel like this only in the morning?" or "How many days have you had diarrhoea?" Closed questions are helpful and appropriate to use only after you have allowed the patient time to tell their concerns/complaints in their own words.

**WHY NOW?**

Ask yourself if the timing of the patient's visit makes sense.

Ask, "*What made you come now?*"

This can be a very helpful question since there are many possible reasons a person comes to your clinic. For example, the problem may have just started or the problem may have started quite a long time ago. A person may come to the clinic with a long-standing physical problem, which has just become overwhelming. Or, social problems may be making something worse or intolerable.

For example, if a person says they have had a headache or backache for two years, think about what may be different now. The pain may have changed, become suddenly worse or psychosocial issues may be underlying the initial complaint. Maybe he or she has lost their job, or home.

Always remember, the presenting symptom may not be the reason for the visit.

**I hear it but can I see it???****Subjective vs. Objective**

- Subjective Information: This is something that is felt or experienced by the patient. For example, pain on the right side or a headache.
- Objective Information: This is information that you get from direct examination (observing, feeling, listening as well as through lab data and x-rays)

*In other words;*

**Sign vs. Symptom**

- Sign: An objective finding
- Symptom: A subjective indication of disease

One of the challenges for nurses in primary health care is to look for signs, which accompany symptoms. For example, move beyond just treating a symptom. Assess for signs which accompany the symptom and which help to narrow the possible diagnoses. Don't be afraid to refer to your books or notes, even the experts do!

## Getting started with Adults

### General Outline of the Adult Health History

1. History of the Present Illness
2. Treatment already given for this illness
3. Past Illnesses
4. Family History
5. Social History (include drug/alcohol use)

Reference: History Taking and Examination Manual pp. 5,6

Review the five areas of the health history in your History Taking and Examination Manual.

You should be very familiar with these five areas.

Become comfortable asking a variety of questions for each of the five areas.

Practice by going through the information on pages 5 and 6 of the History Taking and Examination Manual.

### **Reflection Questions:**

- ✓ What is the hardest part of taking a health history for you?
- ✓ What parts are you especially good at?
- ✓ Do any of these five areas surprise you?
- ✓ Which one do you think is the most important?
- ✓ Which key area(s) do you usually ask about at your clinic?
- ✓ Which one might you forget to ask about and why?
- ✓ Are there any areas that you usually do not bother to ask about? (e.g. social history)
  - What information might you be missing?

Could the sign or symptom be related to the person's work or an exposure?

If you think it might, ask the person about their

- Job history and current job
- Exposure to harmful substances (e.g. silica, asbestos, lead, mercury, chemicals, infectious agents, excessive noise, etc.)
- Where they live. Is it near an industrial site or waste dump?
- What is their Smoking/ Alcohol History (If they say they only drink or smoke a little, ask them what they mean by a little!)

Adapted from: Rogers, B. (1994). Occupational Health Nursing: Concepts and Practice. Philadelphia: Saunders.



## Getting started with Children

### General Outline of the Health History for a Child

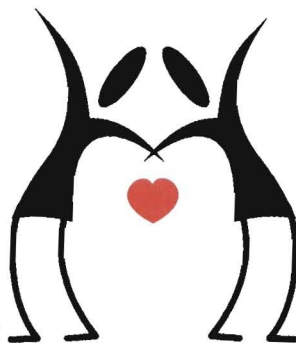
1. History of the Present Illness
2. Past Illnesses and Road to Health Card
3. Treatment already given for this illness
4. Feeding
5. Birth History
6. Development History
7. Family and Social History

Reference: History Taking and Examination Manual pp. 25,26

Review the details of the child's health history on pages 25 and 26 of the History Taking and Examination Manual.

**Reflection Questions:**

- How is the child's history different from an adult health history?
- Why is it necessary to always check the Road to Health Card in children under five years of age?
- Did any of the parts of the child's health history surprise you?
- Are there certain areas you would like to work on? What are they?
  - What are you going to do to improve in these areas?

**Getting started with Teens**

*Children are not just little adults and teens are not just big kids!  
All are unique and special.*

**Adolescent Health Considerations**

- Confidentiality is **essential**.
- Being non-judgemental and open are really important. Yelling and scolding don't help build trust.
- Teens may take their time to ask for what they want
  - Don't expect to get all of the information on the first visit.
  - Teens may return many times with minor complaints until they feel they can trust you.

For example, a young lady looking for oral contraceptives, may come a few times with headache or stomach ache before she is ready to trust you and ask for birth control.

**“Tell me more about your:  
 headache,  
 or leg pain  
 or difficulty breathing  
 or diarrhoea  
 or well just tell me more!....”**

### General Outline for Evaluating a Complaint

- Location
- Quality/Quantity
- When did it start? Pattern? Getting better or worse? Seasonal?
- Context: What were they doing when it happened?
- What makes it better? / What makes it worse?
- Associated Signs & Symptoms

Then always ask about

- Past medical history (remember to include LMP and allergies)
- Contacts/Recent Travel
- History of similar symptoms

### What does it take to evaluate a complaint?

Ask about:

- Location
  - Does it change/move? Does it radiate?
  - Referred Pain? E.g. Gallbladder problems can lead to shoulder pain  
 A hip problem can be referred to the knee
- Quality (Sharp? Dull? Aching? Burning? Crampy? Throbbing?)
- Quantity (To what extent is the person weakened?)
- When did it start? Pattern? Getting better or worse? Seasonal?
  - Was it sudden? Gradual?
  - Is it continuous? Does it come and go?
- Context
  - What were they doing when it happened?
- What makes it better? / What makes it worse?
  - Explore all types of treatment (Traditional, Western, etc.)
- Associated Signs & Symptoms

Then always ask about

- Past medical history (remember to include LMP and allergies)
- Contacts/Recent Travel
  - Anybody sick at home, work, crèche/school?
- History of similar symptoms

**Reflection Questions:**

- Did any of the parts of evaluating a complaint surprise you?
- If yes, which ones?
- How will you remember the outline for evaluating a complaint?
- Why is it important to ask about recent travel?
- Why is it important to ask women about their last menstrual period (LMP)?

NOTES:

## “What did you say?”

Take time to check what you have heard

### Always Review and Summarise

- Review

Ask questions such as;

- *“I want to be sure I have the information correct, let me review it with you...”*
- *“It sounds like...”*

- Summarise

Ask questions such as;

- *“You have had a headache for three days, but no nausea or vomiting, is that correct?”*
- *“Is there anything else you would like to tell me?”*

Reviewing and summarising the history shows the patient that you are listening and that you want to be sure you heard everything correctly. It helps to reduce miscommunication. Also, it provides the patient a chance to add anything to the interview including psychosocial issues, which may be difficult to bring up at the very beginning.

### *Practice Taking a Health History*

With another nurse, practice taking a full health history from each other. This role play should be done twice, so that each person has a chance to be the nurse and the patient. Remember this is a role-play, you do **not** have to share personal information!

You can choose to role-play a man, a woman, a teen or a woman with a child. Have fun with this!

Take time to do this role-play. It is a worthwhile learning experience. Even though you will not always need to nor will you have the time to take a full health history, it is important to know it for times when it will be helpful in making a diagnosis.

Role-play a common or typical patient. Make sure to go through all of the parts of a full health history. If you are eager, try fooling your partner with a “difficult” patient! Again, Have fun with this!

**Practice Evaluating a Complaint:**

In pairs or alone, practice what questions you would ask the following clients:

- A 26 year old woman with abdominal pain
- An elderly man with backache
- An 8 month old child with diarrhoea
- A young man with cough

**AVOID LEADING QUESTIONS**

**REMEMBER TO BEGIN WITH OPEN-ENDED QUESTIONS!**

The **History Taking and Examination Manual** provides sample questions for a number of common complaints. These begin on page 9 of the manual.

Feel free to adapt this exercise and use symptoms, which are of importance to your community.

**Reflection Questions:**

- What were some of the questions you asked for each symptom;
  - Abdominal pain
  - Backache
  - Diarrhoea
  - Cough

Have you thought of many conditions, some that are common and some uncommon, some minor illnesses and some serious conditions? For example, abdominal pain could be related to many things such as menstruation, indigestion, pelvic inflammatory disease or acute appendicitis.

- Why is it important to always ask a woman about her LMP and possibility of pregnancy?
- Are there new things you have learned about evaluating complaints (symptoms)?
- What did you find surprising?
- Do you feel you could teach another nurse about the various parts of evaluating a complaint?

## Enough Talking!

**"The most important thing about examining patients is actually bothering to do it!"**

Always do a quick general examination as well as examining the part of the body where the problem seems to be.

The more you practice examining patients the more you will learn to recognise what is normal and what is not. The most important parts of the examination involve looking with your eyes, listening with your ears and feeling with your hands - do these things carefully before you start using a stethoscope! Learn to **observe** the way the patient walks in to the Consultation Room, the way they sit, the way they talk, the way they are breathing - this may give you useful information before you even start to examine the patient.

You cannot properly examine a fully clothed patient! One of the reasons for arranging the consulting room to allow privacy is so that the patient can undress for examination as necessary.

Make the patient comfortable. Explain what you are going to do before you do it.

Be gentle. Always look at the patient's face if you are feeling a part of the body that is painful. Remember that people may feel very embarrassed about being examined: you must be understanding about this but must not let your own feelings of embarrassment stop you from doing a necessary examination.

You do not need to do a complete examination on each patient - learn which parts of the examination are important for the different problems that people come with - but **ALWAYS DO THE GENERAL EXAMINATION.**

(Reference: History Taking and Examination Manual pp. 7,8)

## Take a Look

### The General Examination

Check...

1. Vital Signs (include the weight in children under 5 years)
2. General Appearance

Look for...

3. **J** aundice
4. **A** naemia
5. **C** yanosis
6. **C** lubbing
7. **O** edema
8. **L** ymph Nodes that are enlarged
9. **D** ehydration

**Vital Signs**

Pulse Rate	adult: 60-80 beats per minute child: 80-100 beats per minute
Blood pressure	90-140 systolic 60-90 diastolic
Respiratory Rate	adult: 12-20 breaths per minute Child 15-30 breaths per minute
Body Temperature	average: 36.6 – 37.2 degrees C

**Study Questions:**

- Why would it be important to check the temperature of a newborn that has just arrived at your clinic following a home delivery?
- When might it be critical to check the respiratory rate of a young child?
- List possible causes for fast breathing (increased respiratory rate)
- Why do we routinely check the blood pressure of adults?
- What else do we check about the pulse besides the rate?

**Heart sounds**

- The movement of the heart valves causes heart sounds.
- This movement produces the classic *lub dup* sound

*Lub* = S1 This sound corresponds with the radial pulse at the wrist. It signifies the closure of the tricuspid and mitral valves

*Dup* = S2 This sound signifies the closure of the aortic and pulmonic valves.

***Lub***= a dull prolonged sound

***Dup***= a short sharp sound

➤ **Lub** = S1

This sound corresponds with the radial pulse at the wrist. It signifies the closure of the tricuspid and mitral valves

➤ **Dup** = S2

This sound signifies the closure of the aortic and pulmonic valves

- When listening to the heart ensure that you hear two heart sounds. If you hear more than two heart sounds, this may be a sign of pathology.
- Murmurs are abnormal sounds caused by difficult blood flow.


A detailed review of murmurs and extra heart sounds is beyond the scope of this programme. If you pick up any abnormal sounds or more than a simple *lub dup*, refer this patient to an experienced PHC nurse or to a medical doctor. Very simply, murmurs can be normal or abnormal. Some murmurs signify pathology especially if they are heard during diastole. It is best to be careful and refer.

- The role of a clinic nurse is **NOT** to differentiate heart murmurs.
- A clinic nurse's role is to recognise a problem and refer it on.

### Study Questions:

Discuss the following questions:

- Why is it important to check the heart rate?
- Name some conditions which cause tachycardia?



**Lung sounds-**

- To listen to the lungs ask the patient to breath with his or her mouth open.
- Compare the sounds from side to side
- Listen to both the front and back of the chest
- Listen in the intercostals spaces, don't place the stethoscope over the scapula
- ❖ Always check the respiratory rate. This is an excellent way to assess for disease!

The lung sounds are produced by air moving though both the air passages and lungs.

The quality of the sounds changes as you move from the apex to the bases on the lungs.

Diseases of the respiratory system cause changes in the lung sounds. These changes include both increased and decreased amounts of sound as well as additional sounds

such as wheezing and stridor. Some additional sounds can be described as *crackling, popping, coarse, musical, bubbling, or gurgling*.

*Bronchial breath sounds* refers to abnormal lung sounds, which produce loud, high-pitched sounds on expiration and inspiration.

Listening to lung sounds takes practice. While you are listening, also take the opportunity to observe how the patient is breathing. This can be as helpful as listening for sounds.

Signs or respiratory problems include flaring of the nostrils and recessions.

- ❖ Most importantly, **ALWAYS** check the respiratory rate. This is an excellent way to assess for disease!

### **Study Questions:**

Discuss the following questions:

- What does chest in drawing (recessions) indicate?
- What does flaring of the nostrils tell us?
- What conditions cause increased respiratory rate?

### **Putting it all together**

*In pairs, work through the following case study; Check your work with an experienced PHC nurse.*

A.) Naniwe, a young mother of one child brings her 12-month-old daughter to your clinic. She states that her daughter has had “flu” for the past 4 days.

1. What further information would you want to get from Naniwe?
2. What will you look for on the Road to Health Card?
3. How would you examine this child?

B.) Through history taking and physical you learn the following,

- Naniwe was breastfed up to nine months of age. She is an only child.
- Her road to health card shows that she has not gained weight for one month and she is behind on her immunisations.
- Her respiratory rate is 36 breaths per minute
- She has no signs of ear infection or diarrhoea

1. How will you manage this child?
2. What other questions about her social situation might you ask?

**Practical Sessions:**

These practical sessions should allow you to see, hear and feel common signs.

At the clinic or hospital practice objectively assessing the following;

1. General Inspection
2. Normal and Abnormal Heart Sounds
  - a. S1 S2
  - b. Extra sounds
  - c. Murmurs
3. Signs of Heart Failure: Oedema, Hepatomegaly (Enlarged Liver)
4. Normal and Abnormal Lung Sounds
  - a. Clear lungs bilaterally
  - b. Wheezing
  - c. Crackles
  - d. Bronchial Breathing
5. Tachypnoea (Increased Respiratory Rate)
  - a. In an adult
  - b. In an infant or young child
6. Dehydration
  - a. Mild, Moderate, Severe (practice assessing degree of dehydration)
7. Common skin conditions
  - a. Impetigo
  - b. Scabies
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_

Remember, it is most important to know what is **normal as well as minor and common**. This then allows you to begin to know if something is out of the ordinary and is beyond the role of a clinic nurse.

GREAT JOB. YOU completed core competency 1

Take a few moments to think about the following:

***Reflection questions:***

- ❖ Did anything about this first module surprise you?
- ❖ What is the hardest part of history taking?
- ❖ What is the hardest part of the physical exam for you?
- ❖ What parts are you especially good at?
- ❖ One thing I learned from this module, which is important to my work is ...
- ❖ I will need to continue to practice...

## **Core Competency #2**

### **Management of Common Conditions**

#### ***Learner Outcomes:***

*When you have completed this unit, including required reading, activities, practice and reflection, you should be able to:*

- *Identify the most common conditions in your health district*
- *Outline a treatment plan for these common conditions including drug and non-drug treatment.*
- *Explain health education priorities for both the individual and community*
- *Identify and successfully use your available resources such as the EDL.*

#### ***Materials needed***

EDL and Standard Treatment Guidelines

Smith, S. (1997). An Introduction To The Curative Aspects of Primary Health Care. Glenstantia: S. Smith.

#### ***Activities:***

1. Small group activity: **Group presentation of common symptoms**
2. Small group activity: **The use of laboratory data**
3. Homework or small group activity: **Learning about Pattern Recognition**

#### **Practical Session:**

Day visit to the district hospital

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This module is meant to be largely student led. Facilitators (PHC trained nurses) should be available to provide support and advice.

### **Activity #1**

Participants should be divided into small groups of 4-6. These groups should be evenly balanced with both strong, experienced nurses and less experienced participants if possible.

Using the book; An Introduction To The Curative Aspects of Primary Health Care, each group should choose one condition to present. There are 30 examples in the book and the facilitator's and district clinic supervisors should choose which conditions are in need of study. *These choices should be based on the priority needs of the district.*

Although participants will not have the time to go through the entire book as a group, they will learn a helpful approach to understanding both disease patterns and treatment options. The South African EDL should be used to complete treatment options.

Each group should have 1 hour to prepare their presentation and ½ hour to present their work, including 5-10 minutes for questions and discussion.

Participants should use the following format to present their talk:

- 1. Common presenting symptom(s)**
- 2. Possible diagnoses (differential diagnoses)**  
**Signs and Symptoms of possible problems**
- 3. Treatment Options**
  - a. Drug treatment**
  - b. Non-drug treatment**
  - c. Referral**
- 4. Patient Education**
- 5. Follow up (when and why to return)**

**Activity #2: The use of laboratory data**

Two important laboratory tests that can be done at the clinic level are **urinalysis** and assessment of **Haemoglobin**. Both of these tests can be used to assist you in making a diagnosis and for screening for disease.

**Urinalysis:** This test is helpful in detecting liver disease, kidney disease, heart disease and metabolic diseases.

**Parameter****Normal Findings**

Urine Colour and consistency:	Yellow & Clear
Nitrites	None
Protein	None
pH	5-6
Glucose	0-0.8 mmol/l (0-15 mg/dl)
Ketones	None
Urobilinogen	< 17 mmol/l (<1 mg/dl)
Bilirubin	up to 3 mmol/l (up to .2 mg/dl)
Blood	<3 ery/ml

**Parameter  
Causes****Abnormal Findings & Some Common**

Urine Colour and consistency:	Color: Pale (diabetes) Dark (dehydration) Pink-Red or Brown-Black (blood) Consistency: Cloudy (yeast, blood cells, bacteria, sperm, kidney stones)
Nitrites	Infection in the urinary tract
Protein	Frequent but non-specific of renal disease
pH	>6 UTI's, vomiting <6 Diarrhoea, dehydration, fever
Glucose	Diabetes Mellitus
Ketones	Diabetic ketoacidosis (not enough insulin) Vomiting/diarrhoea, eclampsia
Urobilinogen	Viral Hepatitis, Chronic Hepatitis, Liver cirrhosis
Bilirubin	Acute/chronic hepatitis, cirrhosis
Blood	Kidney or renal tract infections, Bilharzia

**Haemoglobin**

A Haemoglobinometer measures the amount of haemoglobin in the blood.

Haemoglobin is a protein-iron compound in the blood that carries oxygen. Checking the haemoglobin level in the blood is a basic but helpful way to check for anaemia. There are many types of and reasons for anaemia.

Iron deficiency is the most common cause of anaemia.

High-risk groups include younger children (hookworm) and women of child-bearing age.

**Anaemia** is present if:

- Hb is less than 11 g/dL in women and children 1-5 years
- Hb is less than 12 g/dL in males.

Reference: EDL p. 112

**Study Questions:**

1. A young girl complains of pain on passing urine. What might you expect to find on urinalysis? If the urine comes back normal, what other types of questions might you ask?
2. An infant has had severe diarrhoea for two days. Name at least two changes you might observe in the urine? Why would it be very important to ask the mother about changes in the urine?
3. A woman who is 32 weeks pregnant says she is feeling tired and out of breath. You check her Hb and find that it is 10.5 g/dl. What questions should you ask her? When would you want to see her again?

**Activity #3: Learning about Pattern Recognition**

In groups of three or four have people discuss and come up with a possible diagnosis for each of the following patterns:

- Shortness of breath and swollen feet
- Chest pain, cold sweats, dizziness, shortness of breath, nausea and vomiting
- Cough, wheeze, shortness of breath, urine clear, no protein
- Hyperinflation of the chest, decreased movement of the chest, cough, shortness of breath, wheeze, breathing out through pursed lips
- Chronic cough, weight loss, tiredness, night sweats, chest pain
- Smoker, chronic cough, weight loss, blood tinged sputum, painful bones and spine
- Tender, rigid abdomen, guarding, rebound tenderness, distended abdomen, high pitched or no bowel sounds, rapid pulse, low blood pressure
- Sudden lower abdominal pain in one iliac fossa, usually a missed period, dizziness, fainting, sometimes slight vaginal bleeding
- Severe sudden pain which refers to both testis and cord
- Female with frequency, dysuria and Hb of 11.5 g/dl
- Frequency, dysuria, (high) fever, CVA tenderness
- Severe headache, nausea, vomiting, photophobia, possible confusion
- Unilateral headache, anorexia, nausea, vomiting, aura

***Practical session:******Plan to visit your district hospital and work with the medical staff for a day.******Keep a diary of the days events. Make notes on the following things;***

During rounds with ward staff at the district hospital,

- ✓ Discuss common cases
- ✓ Discuss cases that were picked up late or missed.
  - What “warning signs” were missed?
  - How might you work to improve this?
  - What is the role of the clinic nurse in picking up such cases sooner?
- ✓ Assess children with dehydration, pneumonia, and malnutrition.
  - Make notes on the signs you want to remember to observe which explain when to treat and when to REFER.
- ✓ Write up the patterns (signs and symptoms) as well as history of presenting illness for 3 patient illnesses or conditions, which you observe. Include both adults and children.
  - Prepare one of the above cases to present to a group of nurses for discussion.

The clinic nurse can use the following table to keep a record of the types of in-service training she has attended. This will help both the nurse as well as the clinic supervisor to keep track of training needs in the district.

<b>Record of In-service Training for Common Conditions</b>		
<i>Programme</i>	<i>Topics Covered</i>	<i>Date Completed</i>
1. Syndromic Management of STD's		
2. HIV Counselling		
3. Tuberculosis (DOTS)		
4. Family Planning		
5. IMCI		
6. Growth Monitoring and Promotion		
7. Rational Drug Use		

GREAT JOB. YOU completed core competency 2

Take a few moments to think about the following;

**Reflection questions :**

- ❖ What conditions do you feel most comfortable handling?
- ❖ What conditions worry you the most?
- ❖ What conditions would you like to learn more about soon?
- ❖ How might you go about this?

**Core Competency #3****Rational Drug Use*****Learner Outcomes:***

***When you have completed this unit, including required reading, activities, practice and reflection, you should be able to:***

- ***Explain key rational drug use terms:***
  - Essential Drugs
  - Standard treatment Guidelines
  - P-treatment
  - P-drug
  - Safety
  - High Risk Patient

Efficacy  
Therapeutic range  
Contraindications  
Interactions  
Side effects  
Adverse effects

- *Develop a list of P-drugs for clinic practice*
- *Explain the clinic nurse's role in health education as it relates to both drug and non-drug therapies*
- *Encourage ongoing education for drug therapy and rational drug use through self-study or small group work at the clinic or sub district or district level.*

***Required Reading:***

Orrell, C. and Kishuna, A. (1997). Rational Drug Prescribing Training Course; Training Manual. Durban: Health Systems Trust

Moller, H and Donohue, S. 1995). Primary Health Care Formulary. Medunsa: Medicos. Pages 1-24

- **Key concepts in primary care pharmacology**

**Essential Drugs:** Essential drugs are drugs that are safe and effective and satisfy the needs of the majority of the population.

**Standard treatment Guidelines:** Protocols for treating common conditions which are based on the effectiveness, safety and cost of the treatment.

**P-treatment:** Your personal first choice treatment for common conditions. (Remember some conditions can be treated without drugs).

**P-drug:** Your personal first choice drug treatment for common conditions (not necessarily for specific patients). Your P drug will often be based on national standard treatment guidelines which have been developed by experts to treat many common conditions.

**Safety:** Drug prescribing has inherent risks and responsibilities for the prescriber. Some points to always consider include therapeutic dose, contraindications, interactions, high-risk patients and allergies.

*If you don't know, look it up \*Don't be afraid to ask questions\*  
It is better to go slowly than to make a mistake!*

**High Risk Patient:** Patients are considered high risk if they are in the following categories: children, the elderly, pregnant or breastfeeding, liver or renal disease, history of drug allergy, Diabetes Mellitus or Porphyria.

**Efficacy:** The ability of a drug or treatment to produce a result.

**Therapeutic range:** The range within which a drug produces a positive effect. Toxicity occurs above the therapeutic range and ineffective therapy occurs below the therapeutic range.

**Contraindications:** Factors that prevent the safe use of a drug (for example, tetracycline is contraindicated in pregnancy).

**Interactions:** Negative effects from two or more drugs being given together. The effects are either additive (increased effects) or reduced. Drug interactions can also occur with food, alcohol and over the counter drugs such as aspirin, antacids, decongestants and some vitamins.

**Side effects:** Mild often anticipated and usually unavoidable, undesirable drug effects such as drowsiness, dry mouth, nausea, and loss of appetite.

**Adverse effects:** More serious and sometimes unexpected reactions to drugs such as allergic reactions and anaphylactic shock, kidney dysfunction and skin reactions.

References:

Orrell, C. and Kishuna, A. (1997). Rational Drug Prescribing Training Course; Training Manual. Durban: Health Systems Trust

Moller, H and Donohue, S. 1995). Primary Health Care Formulary. Medunsa: Medicos  
Treadwell, I. (1999). Medicine Management in Primary Health Care.  
WHO (1995). Guide to Good Prescribing: A Practical Manual. Geneva: WHO

### **Treatment Options**

1. Information and advice only
2. Treatment without drugs and Information and Advice
3. Treatment with a drug and Information and Advice
4. Referral

### **Process of rational treatment**

- Step 1: Define the patient's problem
- Step 2: Specify the treatment objective  
*What do you want to achieve?*
- Step 3: Check the suitability of your P-treatment  
*Check effectiveness and safety*
- Step 4: Start the treatment
- Step 5: Give information, instructions and warnings
- Step 6: Monitor (and possibly stop) treatment

(Source: WHO: Guide To Good Prescribing)

**What does the patient need to know?****Patient Teaching Guide**

- ✓ The name of your drug is .....
- ✓ You will need to take (this much)
- ✓ The drug should be taken \_\_\_\_\_ times per day.
- ✓ The best time to take your drug is \_\_\_\_\_, \_\_\_\_\_ etc.
- ✓ The drug should (or should not) be taken with meals, because food will affect the way the drug is used by your body.
- ✓ Special activities that should be considered when taking this drug;
  - E.g. driving a car
  - Finish the antibiotic course even if you are feeling fine
- ✓ Be aware that the following side effects may occur:
  -
- ✓ Do not take this drug with other drugs, even over the counter drugs without checking with the nurse or chemist first.
- ✓ If you see another health worker, let them know you are taking this drug
- ✓ Keep this and all medicines out of the reach of children.
- ✓ Importance of non drug treatment
  - E.g. sugar-salt solution with diarrhoea, ice a sprain, soothing teas
- ✓ When to call or return
  - Specific dangerous side effects or signs of toxicity
  - When they stop a medicine abruptly
    - E.g. antidepressants
  - When they stop a medicine before they should because of side effects
    - E.g. anti-tuberculosis drugs, contraceptives, etc.

Adapted from: Karch, A. (1997). 1997 Lippincott's Nursing Drug Guide. Philadelphia: Lippincott.

*After reading the required readings work through the following;*

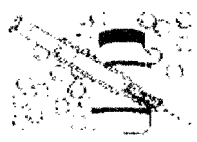
*Discussion Questions*

- From a pharmacological point of view, why is it important to check if a person has a history of liver or kidney disease?
- Read pages iii and iv of the new EDL. Summarise for the whole group, what is meant by "Essential drugs". Why isn't cough mixture an essential drug?
- Use the index to help you find information on hypertension. Briefly summarise the management of hypertension.
- What is the difference between drug and non-drug therapy?
- How can a clinic nurse help to prevent antibiotic resistance?
- What is polypharmacy and how can you avoid this dangerous practice?
- What are some of the drugs which make OCP's less effective?
- Name commonly used drugs contraindicated in pregnancy.
- Give examples of Standard Treatment Guidelines used in clinics in South Africa
- What factors increase the risk of drug interactions?

NOTES:

**Activities**

- Select P(ersonal) drugs for 10 common conditions in your district.



**Selecting a P-drug**

1. Define the diagnosis
2. State the therapeutic objective
3. List the effective drug groups
4. Choose a group based on efficacy, safety, suitability and cost
5. From this group choose a P-drug based on efficacy, safety, suitability and cost

- Using note cards, make a record of your P drugs using the following format
  - P drug:
    - Generic Name
    - Active substance
    - Dosage form
    - Standard dosage schedule
    - Standard duration
    - Contraindications
    - Side effects
    - Health education
- Outline a plan to improve compliance among hypertensive patients.
- Complete the Clinical Cases on pp 52-54 of the training manual.
- Brainstorm where to get more information on drugs/drug therapy.



### Case Study for Clinic Management and Rational Drug Use

You open a clinic today after being off duty for one week, you find that there are only ten tablets of a commonly used antibiotic in stock and you are out of polio vaccine (or another one that is most out of stock)

- ✓ What management issues does this situation raise?
- ✓ What clinical care issues are you concerned about?
- ✓ What strategies would you use to deal with this problem? (Include both short term and long term strategies.)
- ✓ What is at stake here, for the clinic? for the community?

*GREAT JOB. YOU Completed Core Competency 3*

*Take a few moments to think about the following;*

#### ***Reflection questions:***

- ❖ What new information did you find most helpful?
- ❖ What concerns do you still have about rational drug use?
- ❖ What would you like to learn more about?
- ❖ How might you go about this?

**Core Competency #4 & 7**

Core Competency #4 Communication & Counselling and  
Core Competency #7 Caring/Confident Approach

***Learner Outcomes:***

*When you have completed this unit, including activities, practice and reflection, you should be able to:*

- Explain effective listening skills
- Discuss ways to improve as well as block communication
- Use “I” statements
- Develop key messages for health priorities for your clinic
- Discuss your rights as a health worker.
- Discuss your role and responsibilities as a clinic nurse
- Explore how you are dealing with stress and burnout and areas to improve.
- Identify ways you are working to improve cooperation and team work with your co-workers

***Required Reading***

“Home Based Care for the Child Affected by HIV/AIDS”

***Activities***

1. Listening Exercise
2. Effective communication techniques
3. Blocks to communication
4. Practice using “I” statements
5. Key Messages

## Good communication and counselling require good listening skills

### Listening requires:

- Letting go of the need to come up with answers while the patient is speaking.
- Letting go of judgement to hear what is said.
- Actively listening; listening with all of your senses (ears, eyes and heart) and observing body language.
- Valuing the person and the person's feelings.
  - E.g. "That must be hard.", "You have been through a lot."

Adapted from: Centre for Human Development, PEP programme, Pleasant Hill, CA.

### Some Examples of Listening Skills

- Attending: Listening silently with full attention
- Non-verbal Communication: nodding "uh-huh", smiling, encouraging more
- Paraphrasing: When you put into your own words what you have just heard
  - *"What I hear you saying is that the headache is worse and now you are having diarrhoea. Is that correct?"*
- Encourage more information: Ask open-ended questions such as
  - "How did that make you feel?"
  - "Describe the pain"
- Reflect feelings
  - *"You sound sad, frightened, tired etc."*

Adapted from: Centre for Human Development, PEP programme, Pleasant Hill, CA.

### Practice LISTENING.

1. When you next see a patient in the clinic focus on attending and non-verbal communication. In other words, try not to speak until it is absolutely necessary.

Afterwards ask yourself;

- ✓ How did it feel to remain quiet?
- ✓ How did the person respond to your non-verbal communication?
- ✓ How was this the same or different than how you usually speak with a client?

**Effective Communication Includes:**

- Empathy (understanding)
- Sensitivity (warmth and feeling)
- Avoiding the use of medical words
- Speaking clearly
- Using both verbal and non verbal communication (body language)
- Using education materials (e.g. posters, a road to health card, etc.)
- Using demonstrations or models
- A Willingness to compromise
- Not judging
- Repeating key points
- Taking time to ask if there are any questions or if anything is unclear
- Encouraging feedback

Questions on effective communication techniques

- ✓ What things from this list are your strengths?
  
- ✓ What areas do you need to work on and improve?

**Blocks to Communication**

Diagnosing	"You need to ..."	"Why don't you just..."
Prying	"Why...?"	"What..."
Lecturing	"You are wrong because..."	
Excusing	"Don't worry about it..."	"It is not that bad..."
Ordering	"You must..."	
Preaching	"You should..."	
Judging	"Why did you do...?"	
Threatening	"If you don't..."	
Providing Answers	"What I would do is..."	

Questions on communication blocks

- ✓ Do you find yourself using any of these blocks to communication? Which ones?
  
- ✓ Discuss how you might replace a block to communication with a more effective communication method?

- ✓ Identify one way you are working to improve communication with your co-workers

Successful Clinic Nurses communicate well with their co-workers and superiors (clinic supervisors, doctors etc.).

To do this:

- Make your needs known (assertiveness training).
  - Pick your issues (priorities).
  - Do your homework.
- AND
- Use “I” statements.

### “I” Statements

*I (name the feeling) when (name the behaviour); I need (say what you want to happen).*

I statements identify your feelings. They also focus on behaviour (not a person) and state a specific expectation.

Some examples,

I feel frustrated when the drug stock is not checked; I need the drug stock to be checked everyday.

I feel hurt when you don't listen to me and just complain about our clinic; I need you to listen to our situation and try to see some of the good things we are doing here.

### **Practice using “I” statements**

1. One of the nurses in your clinic has been reporting to work late a lot. What could you say to her?
2. A man comes to the clinic demanding to be seen right away. Five people are already waiting on the benches.
3. Your clinic supervisor comes to visit and says she is happy with all of your efforts and that she has heard good things about your clinic.

## **FOCUS ON KEY MESSAGES**

Key (or prime) messages are messages, which tell **essential** information for primary health care. This includes prevention and early treatment. Key messages are simple and uncomplicated. They do not give more information than necessary. These messages focus on factors that will most likely promote health and prevent disease.

Key messages include “information which every family and community ought to know”. [Facts for Life; A Communication Challenge]

### *Safe Motherhood Key Messages*

1. The risks of childbirth can be drastically reduced by going to the nearest health worker for regular check-ups during pregnancy
2. A trained person should assist at every birth.
3. To reduce the dangers of pregnancy and childbirth, all families should know the warning signs.
4. All women need more food during pregnancy. All pregnant women need more rest.
5. Spacing pregnancies at least two years apart and avoiding pregnancies below the age of 18 or above the age of 35 drastically reduces the dangers of childbearing.
6. Girls who are healthy and well fed during their own childhood and teenage years have fewer problems in pregnancy and childbirth.
7. If a woman who is pregnancy smokes or takes alcohol or drugs, her child may be damaged in the womb.

[Facts for Life; A Communication Challenge]

### *Child Growth Key Messages*

1. Children from birth to the age of three years should be weighed every month. If there is no weight gain for two months, something is wrong.
2. Breast milk alone is the best possible food for about the first six months of a child's life.
3. By the age of about six months, the child needs other food in addition to breast milk.
4. A child under three years of age needs food five or six times a day.
5. A child under three years of age needs a small amount of extra fat or oil added to the family's ordinary food.
6. All children need foods rich in vitamin A-breast milk, green leafy vegetables, and orange-coloured fruits and vegetables.
7. After an illness, a child needs one extra meal every day for at least a week.

[Facts for Life; A Communication Challenge]



## ***STRESS & BURNOUT: What Every Clinic Nurse Should Know!***

Stress is a natural part of clinic work. Dealing with patients, often in isolated and poorly resourced situations, only increases the pressure of this type of nursing. The following section provides a brief review of stress, burnout and how to deal with these common concerns.

### ***Understanding Stress***

#### ***What is stress, and what can cause it?***

Stress can be defined as that which stimulates you and increases your level of alertness.

“Life without stimulus would be incredibly dull and boring. Life with too much stimulus becomes unpleasant and tiring, and may ultimately damage your health or well-being. Too much stress can seriously interfere with your ability to perform effectively.

The art of stress management is to keep yourself at a level of stimulation that is healthy and enjoyable.”

Sources of stress include:

- *Survival Stress*: this occurs where your survival or health is threatened, where you are put under pressure, or where you experience some unpleasant or challenging event. Adrenaline is released and the 'fight or flight' response is felt.
- *Internally generated stress*: this comes from worrying about events outside your control. Examples include being generally tense and rushed or from behaviours which stress relationships.
- *Environmental and Job stress*: The general living or working environment causes stress. Factors include noise, crowding, pollution and events at work.
- *Fatigue and overwork*: This stress takes a long time to build up. Trying to achieve too much in too little time, or using poor time management strategies can lead to this stress.

Your response to stress will depend on the source of stress.

#### ***What happens if stress gets out of control***

Performance can be reduced but these experiences can provide insight and learning.

The effects of long-term stress can be severe. Long term stress can lead to:

- Fatigue and Exhaustion
- Depression
- Burn Out, or
- Breakdown

To complete this section, we will focus a common issue to health workers, Burn Out.

#### ***What is Burn-Out?***

Burn-Out is said to occur where normally committed people lose interest and motivation.

The typical person is hard working and hard driven. Over time, they become emotionally, psychologically or physically exhausted. Risks for burn-out are increased if:

- you find it difficult to say 'no' to additional commitments or responsibilities
- you have been under intense and sustained pressure for some time
- your high standards make it difficult to delegate to assistants
- you have been trying to achieve too much for too long
- you have been giving too much emotional support for too long

People with burn-out show less motivation and a decreased performance, are dissatisfied and may even leave the work.

#### ***Symptoms of Burn-Out***

Burn-out usually occurs slowly, over a long time. Physical and mental symptoms include:

- A feeling of lack of control over commitments
- An incorrect belief that you are accomplishing less
- A growing tendency to think negatively
- Loss of a sense of purpose and energy
- Increasing detachment from relationships. This may cause further conflict and stress, adding to the problem.

#### ***Avoiding Burn-Out***

Respect your limits. As you get better at what you do, people may want increasing amounts of your time, and will rely on you more and more. It is easy for commitments to get bigger: You must learn to say 'No' to commitments that you do not want to take on - otherwise you will be in severe danger of burning out as you become unhappy with your situation.

***If you are in Danger of Burning Out...***

- Remind yourself of your goals and priorities. (Are the demands on you priorities?)
- If you are too busy, reduce your commitments.
- Seek out friends/ family / co-workers who are supportive. You are most likely not alone in how you feel.
- Follow a healthy lifestyle:
  - Get adequate sleep and rest.
  - Eat a healthy, balanced diet.
  - Get regular aerobic exercise.
  - Limit caffeine and alcohol.
- Take time for a relaxing hobby.
- Remember that you have a right to be treated fairly and with respect. You can't help others if you don't first take care of yourself!

If you feel deeply demotivated and disenchanted with your job, get help from a good psychologist.

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(source: [www.mindtools.com.smundstr.html](http://www.mindtools.com.smundstr.html))

GREAT JOB. YOU completed Core Competencies 4 and 7

Take a few moments to think about the following;

***Reflection Questions:***

Ask yourself

“What can I expect from my clients, their families and the community?”

“What can I expect from my nursing supervisors and the district management team?”

“How can I work to see that my rights are maintained?”

“What am I doing for myself, to care for myself?”



## ***Core Competency #5***

**Referral; when and where to refer**

### ***Learner Outcomes:***

***When you have completed this unit, including activities, practice and reflection, you should be able to:***

- Discuss factors which effect referral
- Explain the *when, where, how and why* of referral for your clinic
- Talk about community resources in your immediate area

### ***Activites:***

1. Factors which effect referral
2. Deciding on referral
3. Writing a referral note
4. Where to refer to
5. When to refer
6. Mapping out referral routes
7. Referral to traditional healers
8. Barriers to care

<u>Factors which effect referral practices</u>	
<u>Caregiver</u> <ul style="list-style-type: none"> <li>▪ Beliefs about illness and treatment</li> <li>▪ Resources available (services, medicine and transport)</li> <li>▪ Other responsibilities (work, children)</li> <li>▪ Previous experience with health system</li> </ul>	<u>Health worker</u> <ul style="list-style-type: none"> <li>▪ Knowledge and skills</li> <li>▪ Availability of drugs and other supplies</li> <li>▪ Perceived need for referral</li> <li>▪ Confidence in own ability</li> <li>▪ Confidence in the referral system</li> <li>▪ Confidence in caregivers ability or willingness to complete the referral</li> <li>▪ Availability of communication and transport</li> </ul>
<u>Community</u> <ul style="list-style-type: none"> <li>▪ Availability of health care (traditional, Western etc.)</li> <li>▪ Care seeking values and practices</li> <li>▪ Reputation of health workers and health facilities</li> </ul>	<u>Health System</u> <ul style="list-style-type: none"> <li>▪ Cost</li> <li>▪ Availability of drugs &amp; supplies</li> <li>▪ Communication between levels of the health system</li> <li>▪ Ability to triage cases</li> </ul>

[Adapted from: Child Health Dialogue December 1999, Issue #17, Patrick Kachur, Healthlink Worldwide, UK.]

## Exercises

**Work through the following questions on your own or in a small group**

### 1.) Factors which effect referral

- ✓ Think of other factors to add to the table
- ✓ Put a plus sign [+] next to strengths in your district's system
- ✓ Put a minus sign [-] next to weaknesses in your district's system
  - Be sure to address all four areas; caregiver, health worker, community and health system.

### 2.) Deciding on referral...

- ✓ What does the caregiver think about?
- ✓ What do you as the health worker think about?
- ✓ What are the issues in the community?
- ✓ What are the health system issues?



### 3.) Sample Referral Note

- ✓ Write a referral note for an adult with tuberculosis that is not getting better on standard first line treatment.
- ✓ Write a referral note for a woman with acute abdominal pain.
- ✓ Write a referral note for a child with severe malnutrition.

**Outline of a referral note [Check to see if there is a specific format for referral notes in your district. Below is an example of one.]**

<u>"Super Care" Clinic</u>	
Patient's Name	Age
Address	
Past medical history	
Current condition and what has been tried	
Reason for referral	
Request for information	

#### 4.) *Where to refer*

Make a list of the community resources in your area. Include both medical and non-medical referral agencies.

It helps to be aware of other agencies such as the home affairs (for birth certificates), religious leaders, police, teachers and local community projects. Also, social workers can be a valuable resource. Contact a local NGO. One example is FAMSA, which provides training on how to deal with rape, abuse, and maintenance.

#### 5.) *When to refer*

In small groups brainstorm the many reasons you may need to refer a patient to another professional.

#### 6.) *Mapping out referral routes*

Map out the route a patient takes when referred from home to clinic and from clinic to district hospital. Remember to think about distance, cost (not just money), facilities available, personnel available and services available.

- ✓ Indicate obstacles a person would face as they are referred through the health system.
- ✓ Where might the system breakdown?
- ✓ Why would it break down?

#### 7.) *Referral to traditional healers*

Brainstorm a community's use of traditional healers (Include both positive and negative uses)

#### 8.) *Barriers to care*

Brainstorm barriers to care at home, in the community and in the health system

Congratulations!. YOU completed Core Competency 5. You are making real progress.

Take a few moments to think about the following:

***Reflection questions***

- Did anything you learn surprise you?
- Name a few things you learned by doing these exercises.
- How did your work experience help you with these exercises? How does this make you feel?

**Core Competency #6**  
Accessing and using information

***Learner Outcomes:***

***When you have completed this unit, including activities, practice and reflection, you should be able to:***

- Explain the following terms: frequency, average, incidence, prevalence, ratio, proportion, percentage and rate.
- Use data to explain issues in your community and at your clinic

***Key terms***

***Frequency***

***Average***

***Incidence***

***Prevalence***

***Ratio***

***Proportion***

***Percentage***

***Rate***

***Activities***

Health into Mathematics

The daily clinic register

Nutrition in children under 5 years

District Health Information Checklist

**KEY TERMS**

Frequency	The number of times an occurrence is repeated
Average	The mean values of a series of numbers. Simply divide the sum by their number. For e.g. The average of 2, 6, 10, 12 and 18 is $\frac{2 + 6 + 10 + 14 + 18}{5} = \frac{50}{5}$ (sum) $= 10$
Incidence	The number of NEW cases of a disease or condition in a given period of time
Prevalence	The number of cases of a disease or condition in a population at a specific point in time
Ratio	A fraction which shows the relationship between two numbers. (x:y) e.g. 8/10 (8 out of 10) nurses are female 6/10 (6 out of 10) children like school
Proportion	A type of ratio in which the numerator is included in the denominator and then made into a percentage. e.g. $\frac{\text{numerator}}{\text{denominator}} = \frac{\text{TB \& HIV}}{\text{TB \& HIV + TB only}} = \frac{80}{80 + 20}$  $= \frac{80}{100} = 80\%$  $= 80\%$ of people with HIV also have TB
Percentage	Rate or proportion per 100 e.g. 1 in 10 = $\frac{1}{10}$ $= .1$ therefore, $.1 \times 100 = 10\%$ or 10 in 100  e.g. 5 in 20 = $\frac{5}{20}$ $= .25$ therefore $.25 \times 100 = 25\%$ or 1 in 4

Rate A proportion that includes a certain time period. Rates are the basic measure of disease occurrence.

e.g.:

$$\text{Infant Mortality Rate} = \frac{\text{Number of children under 1 year who die in first year of life}}{\text{Number of live births during same year}} \times 1000$$

e.g.

$$\frac{4}{1000} \times 1000$$

=

References:

Harkness, G. (1995). Epidemiology in Nursing Practice. St. Louis: Mosby.  
 Mausner, J. & Kramer, S (1985). Mausner & Bahn Epidemiology- An Introductory Text. W.B. Philadelphia: Saunders.  
 Gibbs, W. & Mutunga, P. (1991). Health into Mathematics. Essex: Longman.

In small groups work through the following;

**A. Health into Mathematics Exercises**

1.) Frequency Survey

- a. Begin by naming 5 energy foods
- b. Conduct a mini survey of nurses' favourite energy foods

Nurses' Responses										
Energy Food	Nurse #1	Nurse #2	Nurse #3	Nurse #4	Nurse #5	Nurse #6	Nurse #7	Nurse #8	Nurse #9	Nurse #10

c. Calculate which energy food had the most votes, which had the least (frequency)

2.) Ten children from the local crèche were weighed at your clinic today. They are all three years old. Their weights are given below.

- 14 kg
- 16 kg
- 15 kg
- 13 kg
- 10 kg
- 16 kg
- 14 kg
- 14kg
- 15 kg
- 17 kg

a. Calculate the average weight for these children.

b. Using a Road to Health Card, assess what is the frequency of children below the 3<sup>rd</sup> centile line for a three year old.

c. What information could you report back to the crèche teachers regarding the nutrition status at their crèche?

3.) Calculate the percentage

7/10 people have had measles	What is the percentage?
10/10 had a cough/cold	What is the percentage?
4/5 people have had a fever in the last year	What is the percentage?
6/8 women have had two or more babies	What is the percentage?

4.) Breast or Bottle?

The proportion of breast fed babies dying in the first year = 8/10

The proportion of bottle-fed babies dying in the first year = 18/60

a. Calculate the percentage for breast and bottle fed babies who died.

b. Based on these statistics alone, which is better for a baby, breast or bottle?

5.) You would like to begin a DOTS (directly observed therapy) programme at your clinic but you aren't convinced that it is worth the extra effort. You need data to help convince the other health workers that it is worth the effort.

Using the following data, decide whether it is worth it to implement DOTS at your clinic.

<u>TB patient</u>	<u>On DOTS</u>	<u>Completed TB treatment</u>
1	Yes	Yes
2	No	No
3	No	Yes
4	Yes	No
5	Yes	Yes
6	No	No
7	Yes	Yes
8	No	No
9	No	No
10	No	No

## B.) Daily clinic register

Using the daily clinic register from your district, circle those items which you do not fully understand. Assist each other in trying to come up with a definition for each item which is not clear.

## C.) Nutrition in the Under 5's

At a crèche or in the waiting area of a well baby clinic, using pre-measured string, Measure the mid upper arm circumference (MUAC) of ten children aged 1 to 5 years

*A mid upper arm circumference of less than 12.5 cm's means the child is very thin and severely undernourished*

Reference: Savage King, F & Burgess, A (1972). Nutrition for Developing Countries, 2<sup>nd</sup> ed. Oxford: Oxford University Press

- Record the arm circumferences
- Find the average arm circumference
- How many are 12.5 cm's or less
- What percentage of children has a 12.5 cm's or less MUAC?
- What does this say about nutrition among young children in your community?

**D.) District Health Information Checklist** (adapted from Vaughan, J.P. & Morrow, R.H. Manual of Epidemiology for District Health Management. Geneva: WHO)

1. Does your clinic record non-specific symptoms (e.g. cough) or diagnosis?  
Why does this type of record give us limited information?
2. Does your clinic try to analyse data specific to your clinic?
3. Do you receive feedback on the health information you collect?
4. Does your clinic have a way of checking the incidence of diseases during different seasons?
5. Have you made a list of the 10 most common diseases seen at your clinic in the last year? Why or why not? Why might this be a helpful thing to do?

GREAT JOB. YOU completed Core Competency 6, only two more to go!

Take a few moments to think about the following;

- How did you find this module helpful?
- What did you learn that surprised you?

## ***Core Competency #8***

### **General Clinic Management**

This section is adapted from Health Centre Administration and Management by Dr. C. Todd University of Zimbabwe, School of Medicine, 1987 ZEDAP training Unit

#### ***Learner Outcomes:***

***When you have completed this unit, including activities, practice and reflection, you should be able to:***

- Discuss your clinic's catchment area.
- Explain the common health problems in your community and goals of your clinic.
- Explain an action plan for one clinic issue.

#### ***Activities***

- ***The Planning Cycle***
  1. ***Where are you now?***
  2. ***Where do you want to go?***
  3. ***How will you get there?***
  4. ***How will you know when you have reached this goal?***
- ***Nutrition***
- ***Time Management***
- ***Safe Motherhood***

## ***THE PLANNING CYCLE***

### **Question 1: *Where are you now?***

#### **Activity**

- Who are the people that your clinic serves? (What is your clinic's catchment area?)

Look in your clinic to see if there is a map of your catchment area. If there is one, review it and make sure the following are included on it; clinic, the main villages, roads, schools, business centres, rivers, mountains, bridges, police, churches, etc. If there is not one, work with the other workers in your clinic to map out the clinic, main villages, roads, schools, business centres, rivers, mountains, bridges, police, churches, etc.

- What is the estimated number of people served by your clinic?
- Which age group is the largest? In other words are there mostly little children, children and teens, adults, or elderly? Also, what does this say about your community?
  - Under 5's
  - 5 to 15 year olds
  - Women aged 15-45 (child bearing age)
  - Men aged 15-45
  - Population over 45
- What are the special characteristics of the people in your clinic's catchment area?

To answer this question, review the information you have already gathered in the above questions as well as your daily register and monthly reports.

- What are the common health problems that you see?

### **Question 2: *Where do you want to go?***

- Does your clinic have written goals for this year? Are they clearly written, achievable, easily measured?

Examples

- ✓ To train at least two staff members in HIV counselling by the end of the year
- ✓ To have no months where EDL drugs are out of stock from April to July

If your clinic does not have any written goals for this year, try to develop two or three based on the information you have already gathered.

**Question 3: How will you get there?****Make an action plan**

- 1.) Examine the goals you have set. Choose one and develop an action plan for it.
- 2.) List the resources you will need to succeed. (Example, specific equipment or training)
- 3.) What actions need to happen to reach this goal?
- 4.) Who will be responsible for each action?
- 5.) How will you measure progress?
- 6.) Set a date for each action to be finished.

Goal	Resources	Actions	Person Responsible	Measures	Due Date
1.	1.) 2.) 3.)	1.) 2.) 3.)	1.) 2.) 3.)	1.) 2.) 3.)	1.) 2.) 3.)

**Question 4: How will you know you have reached this goal?**

What can you measure?

Examples

Daily clinic register

Drug Stock Cards

Patient Cards

Explain or draw how you could display your results (graph or chart) for all to see.

**Practical activities****A. Nutrition**

Complete a master card of children under 5 weights for age for one day. (A master card is made by simply filling in one Road to Health Card with the weights of many children taken during a period of time, e.g. during one clinic day or one week.)

- ✓ What number of children is below the 3<sup>rd</sup> centile line for weight for age?
- ✓ What percentage of children is this?
- ✓ What could this tell you about nutrition in your community?

**B. Time Management**

Discuss the following case with other nurses:

A nurse explains;

*"I'm so busy, I never have enough time to get everything done. When I come to the clinic there is already a long queue of people waiting to be seen. The clinic needs to be tidied up and I start to see everyone. Although I know I should weigh all under 5's I simply don't have the time. We ran out of measles vaccine yesterday and I need to get the clinic supervisor to bring more when she visits. The clinic supervisor, on her last visit said we need to do more health education but I don't know how she expects me to see everyone and do this as well. And I haven't even mentioned taking stock of all the equipment and drug supplies"*

- ✓ What do you think of this example? Is it realistic?
- ✓ List the various tasks the nurse mentioned she must do.
- ✓ Put a \* next to those tasks the nurse must do.
- ✓ Put a # next to those task she could delegate to nursing assistants.

### C. Focus on a Safe Motherhood

Read through the elements of a safe motherhood programme as described in the following box.

- ✓ Put a + sign next to those elements which are managed well at your clinic/district.
- ✓ Put a - sign next to those elements, which need to be improved at your clinic/district.
- ✓ Choose one problem area to focus on.

#### Elements of a Safe Motherhood Programme

Effective referral with:

- communication between clinic and district hospital (e.g., telephones, radios);
- available transport for complicated obstetrical cases;
- coordination of care between the various levels of the DHS including case management protocols.

Information/Education and Communication strategy aimed at:

- increasing use of services- family planning, prenatal, deliver and postpartum care;
- increasing awareness of danger signs during the maternal period, and
- organizing communities for transport of women with obstetrical complications.

Community-based family planning and obstetrics, which provides:

- family planning and safe abortion management;
- case detection of complications or present medical problems;
- normal delivery; and
- obstetric first aid (e.g. initial treatment of eclampsia, skills for manual removal of placenta).

Source: Campbell et al, (1995b). . Off to a rapid start: appraising maternal mortality and services. *International Journal of Gynaecology and Obstetrics*, 48 Suppl: S33-S52. in Campbell et al, (1997, August) *Lessons Learnt: A decade of measuring the impact of safe motherhood programmes*. London: London School of Hygiene and Tropical

Use the following framework to guide your development of an action plan.

1. Examine the problem: Do you need to improve something or make something completely new?
2. List the resources you need: Equipment, transport, etc.
3. Decide who will do what: What are the tasks that need to be done and who has the skills to make it happen?
4. Decide how you will measure progress
5. Write a timetable: Arrival of equipment, necessary training, date of implementation etc.

6. Discuss your plans with the community and other relevant authorities. Avoid false promises but don't be afraid to initiate change.

(Adapted from: Todd, C. (1987). Health Centre Administration & Management: Zimbabwe: ZEDAP Training Unit.)

*EXCELLENT. YOU completed Core Competency 8, YOU are nearly finished!*

Take a few moments to think about the following:

- What did you like about this module?
- Do you feel like you could be a force for change in your clinic? you're your community?
- What parts of managing a clinic would you like to know more about?

**Core Competency #9****Community Orientation*****Learner Outcomes:***

***When you have completed this unit, including required reading, activities, practice and reflection, you should be able to:***

- Discuss common conditions in your community.
- List barriers to care in your community.
- Explain practical ways to promote home based care.
- Identify warnings signs of infectious diseases which may affect the community.

***Required Reading***

“Home Based Care for the Child Affected by HIV/AIDS”

WHO Fact Sheet: Tuberculosis

DOTS: Directly Observed Treatment Short Course

The DOTS Strategy

## ***Case studies***

*The following case studies should be completed in small groups.*

### **1.) THE POWER OF ONE**

The following case study is based on a real example of one community nurse's ability to promote positive health changes in her community.

A community health nursing student developed a community involvement project in a peri-urban area. The objectives of the project were:

1. To ensure that the community has more water sources.
2. To ensure that the community uses water wisely.
3. To ensure that the community is aware of the importance of water.

By reviewing health statistics, the nurse found that the children from this community were over-represented in area clinics and hospitals with diseases such as lice infestation and dehydration. The nurse also found out that the main water supply for the township was three kilometres from the homes. Parents and children spent large parts of their day walking there and waiting in a queue to collect water.

The nurse initially motivated for a tanker service for the township. This idea failed because most people were not at home during business hours and therefore were unable to collect water from the tanker. She then decided to organize for more taps to be installed in the area although she first thought that this would be too much money. Appropriate government and local businesses were contacted such as the Department of Water Works, the local community nursing sister and an environmental health officer.

The community agreed to work on getting more water taps installed. The community organized to have one person from every house assist in digging trenches for the new water pipes and taps. Construction sites were then arranged so that one new tap would be available for every five houses. Four community members were chosen to accompany the nurse to the Department of Water Works.

After two meetings with the Department, it was agreed that the Department would provide all of the necessary equipment and staff to construct the taps IF the community would arrange sites and dig the trenches. Within one week, the community came together and had the trenches dug. Two days later, the Department completed construction on four new water taps!

Since the nurse could not remain so involved in this one project, a community member was chosen to lead the programme. Two months later the community was "surrounded by water taps" and the Water Department arranged to provide education on the relationship between water and health and tips on how to save water.

- ✓ How did this nurse identify a community wide problem?
- ✓ In what ways was she “creative” and resourceful?
- ✓ Explain how the community members were empowered to “own” this project?

## **2.) Dealing with the unknown**

Two weeks ago, you treated a young man for bloody diarrhoea. You did not hear back from him and assumed he was getting better. Yesterday you treated two more people for bloody diarrhoea, a young child and his granny. Today, you see two people with complaints of diarrhoea.

- ✓ What are the issues here?
- ✓ What other information would you like to get?
- ✓ What individual concerns do you have for these patients?
- ✓ Who else might be at risk here?

## **3.) Home care for people with AIDS**

After reading the article on home based care, work through the following case;

You would like to support a home care programme in your health district. A local church has agreed to support the training of lay volunteers to offer support to affected families and orphans. You have been asked to come and speak about the health issues of which lay volunteers need to be aware.

- ✓ Outline the health issues you would want to discuss with the lay volunteers.
- ✓ What social barriers might this home care programme face?
- ✓ Make a list of key messages you would want all people living with HIV/AIDS to know.

## **4.) Perinatal mortality**

- ✓ Map out how women get to a place of delivery in your district.
- ✓ List all possible barriers a pregnant woman would face getting to this place.
- ✓ Explain how a clinic nurse might remove one barrier.

## **5.) Pick an issue**

Develop a case which discusses an important issue in your community. Possible topics include; improving TB control and reducing the incidence of teen pregnancy. Discuss these questions with the other nurses and aides in your clinic.

- ✓ What reasons make this a problem (e.g. Tuberculosis, Teen Pregnancy) for our community?

- ✓ What is outside our role as clinic nurses to change? How does this make you feel?
- ✓ What is within our ability to change?

CONGRATULATIONS! YOU completed all of the modules.



After working through each core competency in the training manual use this guide to review your work and to facilitate group discussion.

### *Evaluation*

After each unit, take time to review the learner outcomes. Review any areas which remain unclear. Seek help from others as is needed.

### *Reflection*

After each session of working on the manual asks, "*How can I put into practice what I have learned?*" Think about one or two changes you could make.

### **Core Competency #1**

**Health assessment skills; history taking and physical examination  
Recognition of normal and abnormal findings**

**Would you ever not bother to take a health history? When? Why?**

No, even in an emergency, you need to ask what has happened as well as a quick past medical history. Even if the patient is unconscious, such basic information should be collected from others there if at all possible.

**In what situations might you take even more time to discuss something with a client?**

More time is needed if a patient seems particularly upset or distressed.

**If confidentiality is so important, why might you be forced to break it?**

If a patient is at risk of hurting himself or herself or someone else, confidentiality can and should be broken.

**How do you encourage honesty when you are working with a patient?**

Provide a safe place, encourage communication through active listening, reflecting back what you heard said and being honest and non-judgmental

**Write down some things you can do to make a patient comfortable.**

Ensure privacy	smile
Avoid interruptions	respect patient's modesty
Avoid excess noise	keep the room clean and ready for the patient

**How is the child's history different from an adult health history?**

Focus on development, growth and diet very important as well as prenatal and birth history, history of siblings can also be very informative

**Why is it necessary to always check the Road to Health Card in children under five years of age?**

Growth parallels health; if a child is healthy he will grow and if he is not healthy, he will not grow so well.

The greatest risk of death is in young children, especially infants under 1 year

The Road to Health card has lots of valuable information besides growth such as immunisation status and birth history.

**Evaluation of a complaint**

**Why is it important to ask about recent travel?**

It is important to think about illness related to environment such as malaria, cholera, even Ebola!

**Why is it important to ask women about their last menstrual period (LMP)?**

It is important because of possible pregnancy. This is especially true because some medicines are dangerous to the unborn child. Also, general body malaise, which is hard to diagnose, may be related to pregnancy.

**Practice Evaluating a Complaint:**

- **A 26 year old woman with abdominal pain**

Tell me more about your pain (open ended question)

Can you describe it for me?

Show me where it hurts.

How often do you have this pain? All of the time, some of the time, after meals?

When did it start? Would you say it is getting better, worse, staying the same?

What have you tried? Has this helped?

Have you ever had this type of pain before? When?

How is your general health? Are you on any medications?

Are you allergic to any medications? Foods?

**Study Questions:**

**Why would it be important to check the temperature of a newborn that has just arrived at your clinic following a home delivery?**

This child would be at increased risk of hypothermia and it would be important to check for this.

**When might it be critical to check the respiratory rate of a young child?**

When there is complaint of fever, cough, and difficulty breathing or eating. In fact, increased respiratory rate is a good indicator for more serious illness such as pneumonia. Therefore, always take the time to check the respiratory rate.

**List possible causes for fast breathing (increased respiratory rate)**

Possible causes include exercise, anxiety, fever, pneumonia, heart failure and metabolic acidosis. Some reasons for metabolic acidosis include severe diarrhea and uncontrolled diabetes.

**Why do we routinely check the blood pressure of adults?**

Hypertension or high blood pressure is often called the "silent killer". This is because a person can have high blood pressure and be unaware of this. The person does not

have symptoms and may otherwise feel good. Therefore the best way to find out if a person has hypertension is to routinely check every person you see.

**What else do we check about the pulse besides the rate?**

The other important thing to check is the rhythm. Check to see if it is regular or irregular?

**Why is it important to check the heart rate?**

The rate of the heartbeat can tell you a lot about how well a person is.

**Name some conditions which cause tachycardia?**

Possible causes of tachycardia are many. For example, exercise (or physical exertion) anxiety, fever, blood loss, anaemia, congestive heart failure, and shock can all cause the heart to beat faster.

**What does chest in drawing (recessions) indicate?**

Recessions are caused by increased efforts to breathe.

**What does flaring of the nostrils tell us?**

Like recessions, nostril flaring is a sign of increased respiratory effort.

**What conditions cause increased respiratory rate?**

Possible causes include exercise, anxiety, fever, pneumonia, heart failure and metabolic acidosis. Some reasons for metabolic acidosis include severe diarrhea and uncontrolled diabetes.

**A.) Naniwe, a young mother of one child brings her 12-month-old daughter to your clinic. She states that her daughter has had “flu” for the past 4 days.**

**4. What further information would you want to get from Naniwe?**

Begin with an open ended question such as “Tell me more about the flu.” What does she mean by flu.

Ask specific questions about fever, cough, and eating and sleeping patterns

**5. What will you look for on the Road to Health Card?**

Look at the child’s growth. Is this a child who is well nourished or poorly nourished? The common cold can be minor to a well-nourished child but become something more severe in a poorly nourished child.

Also take a moment to look at the immunization status (remember no “missed opportunities”).

**6. How would you examine this child?**

Begin with a general impression of the child. Ask yourself, does this child “look sick”. Does he have a runny nose but is still playful, eating and alert or does this child look tired, stress? This general impression can tell a lot.

The next most important thing is the respiratory rate. If it is elevated think of a chest infection or metabolic changes related to (severe) diarrhea.

B.) Through history taking and physical you learn the following,

- Naniwe was breastfed up to nine months of age. She is an only child.
- Her road to health card shows that she has not gained weight for one month and she is behind on her immunizations.
- Her respiratory rate is 36 breaths per minute
- She has no signs of ear infection or diarrhea

**3. How will you manage this child?**

Discuss diet with the mother. Ask what she is eating and what she has eaten in the last 24 hours. Review the types of food, which a child of this age needs, encourage frequent feeding and adding oil to food to make it energy dense. Also, she will need to catch up on the immunizations.

This child’s weight should be rechecked in two weeks to a month to make sure she is back on the “Road to Health”

**4. What other questions about her social situation might you ask?**

What kind of income she has, who supports her, does she have a garden, animals, what kind of water supply etc. Why did she stop breastfeeding?

References:

Bates, B. A Guide to Physical Examination Lippincott

***Core Competency #2***

**Management of Common Conditions**

6. Common presenting symptom(s)
7. Possible diagnoses (differential diagnoses)
  - Signs and Symptoms of possible problems
8. Treatment Options
  - a. Drug treatment
  - b. Non-drug treatment
  - c. Referral
9. Patient Education
10. Follow up (when and why to return)

**Study Questions:**

**4. A young girl complains of pain on passing urine. What might you expect to find on urinalysis?**

Cloudy urine, nitrites if you suspect at urinary tract infection

**If the urine comes back normal, what other types of questions might you ask?**

Ask about hygiene practices. Vulvovaginitis is possible. Possible infections are many, remember to think about the possibility of sexual abuse and sexually transmitted disease.

**5. An infant has had severe diarrhoea for two days. Name at least two changes you might observe in the urine?**

Concentrated (dark) urine and less urine output

Why would it be very important to ask the mother about changes in the urine?

These are important changes which help to assess level (severity) of dehydration

**6. A woman who is 32 weeks pregnant says she is feeling tired and out of breath. You check her Hb and find that it is 10.5 g/dl. What questions should you ask her? When would you want to see her again?**

Ask about prenatal care, prenatal iron and folic acid supplements. Also ask about any bleeding, past history of anaemia, haemorrhoids, and weight changes.

You would want to recheck her Hb in 2 weeks. When she is 34 weeks you do not want to see it going any lower. If it goes lower, this would be cause for referral. Remember to provide education about iron supplementation. Iron should be taken with food to avoid nausea. Taking iron with vitamin C rich foods will increase absorption. Also, iron can be constipating. Encourage lots of fluids and a high fibre diet to avoid constipation.

**Activity #3: Learning about Pattern Recognition**

In groups of three or four have people discuss and come up with a possible diagnosis for each of the following patterns:

- Shortness of breath and swollen feet  
Congestive cardiac failure
- Chest pain, cold sweats, dizziness, shortness of breath, nausea and vomiting  
Myocardial infarction
- Cough, wheeze, shortness of breath, urine clear, no protein  
Asthma
- Hyperinflation of the chest, decreased movement of the chest, cough, shortness of breath, wheeze, breathing out through pursed lips  
Chronic Obstructive Airway Disease
- Chronic cough, weight loss, tiredness, night sweats, chest pain

**Tuberculosis**

- Smoker, chronic cough, weight loss, blood tinged sputum, painful bones and spine

**Lung Cancer**

- Tender, rigid abdomen, guarding, rebound tenderness, distended abdomen, high pitched or no bowel sounds, rapid pulse, low blood pressure

**Acute abdomen**

- Sudden lower abdominal pain in one iliac fossa, usually a missed period, dizziness, fainting, sometimes slight vaginal bleeding

**Ectopic pregnancy**

- Severe sudden pain which refers to both testis and cord

**Torsion of the testis**

- Female with frequency, dysuria and Hb of 11.5 g/dl

**UTI, cystitis**

- Frequency, dysuria, (high) fever, renal angle (CVA) tenderness

**Pyleonephritis**

- Severe headache, nausea, vomiting, photophobia, possible confusion

**Meningitis**

- Unilateral headache, anorexia, nausea, vomiting, aura

**Migraine**

**Words to the Wise**

- ✓ Don't run for the injection!
- ✓ Take time to educate and arrange follow up
- ✓ Always take a moment to offer advice and guidance
- ✓ Look for horses, not zebras
- ✓ Be ready for the "foot out of the door" question
- ✓ Remember that the initial complaint may not be real reason for the visit
- ✓ Treat the patient not a lab test (Redo the test if the results don't make sense with what you see clinically)

**Core Competency #3****Rational Drug Use****Discussion Questions**

- From a pharmacological point of view, why is it important to check if a person has a history of liver or kidney disease?

Liver and kidney changes can affect the way the body responds to a drug.

- Read pages iii and iv of the new EDL. Summarise for the whole group, what is meant by "Essential drugs". Why isn't cough mixture an essential drug?

Essential drugs are the medicines chosen as most useful to manage the most common and important conditions in South Africa. Cough mixture is not considered an essential drug because it is not necessary for the treatment of illness. It is for symptomatic relief not treatment.

- Use the index to help you find information on hypertension. Briefly summarise the management of hypertension.

See pages 10 to 14 of the Standard Treatment Guidelines and Essential drugs list

- What is the difference between drug and non-drug therapy?

Drug therapy is treatment with a medicine either prescription or non-prescription to produce a beneficial change to the body.

Non drug therapy includes any treatment which is not drug related such as counselling, physical therapy, counselling, diet changes, etc.

- How can a clinic nurse help to prevent antibiotic resistance?

A clinic nurse can help by encouraging patients to complete their course of antibiotics and other treatments such as anti tuberculosis drugs through activities such as health education and DOTS. Also, it is important to not over prescribe antibiotics but use them only when necessary.

- What is polypharmacy and how can you avoid this dangerous practice?

Polypharmacy is the use of many drugs at one time to treat one or more conditions

This can be avoided through rational drug prescribing. Remember to review all medications a patient is currently taking and why.

- What are some of the drugs, which make OCP's less effective?

Rifampicin, some antibiotics, anticonvulsants and others. See page 79 of the Primary Health Care Formulary by Moller and Donohue.

- Name commonly used drugs contraindicated in pregnancy.

Two examples are Tetracycline and high dose Vitamin A  
Drugs to avoid include aspirin, chloramphenicol, cotrimoxazole, metronidazole and the sulfonamides.

- Give examples of Standard Treatment Guidelines used in clinics in South Africa

Syndromic Management of STDs, National Tuberculosis treatment guidelines and IMCI

- What factors increase the risk of drug interactions?

Factors include using a number of drugs at one time, mixing prescription and over the counter medications, as well as inadequate history taking. Also, remember to review the list of high-risk patients in the Rational Drug Use Training Manual.



### Case Study for Clinic Management and Rational Drug Use

You open a clinic today after being off duty for one week, you find that there are only ten tablets of a commonly used antibiotic in stock and you are out of polio vaccine (or another one that is most out of stock)

- ✓ What management issues does this situation raise?

Stock control is a problem. All drugs on your essential drug list should always be available.

- ✓ What clinical care issues are you concerned about?

If essential drugs are not available, there may be missed opportunities for immunization as well as ineffective or more expensive treatment with other antibiotics.

- ✓ What strategies would you use to deal with this problem? (Include both short term and long-term strategies.)

Try to find out where the problem is. Was not enough of the drug ordered? Was more than expected used and why? Were you unable to get the supply even though you requested it? The answers to these questions will help you decide where you need to make changes.

- ✓ What is at stake here, for the clinic? For the community?

If essential drugs are not available, there may be missed opportunities for immunization as well as ineffective or more expensive treatment with other antibiotics.

Missed opportunities can lead to poor immunization coverage and an increased risk of disease outbreak.

Also, if people make the effort to come to the clinic and are unable to get the necessary medication, they may lose faith in the clinic and seek care elsewhere.

***Core Competency #4 & 7***

**Core Competency #4 Communication & Counselling and  
Core Competency #7 Caring/Confident Approach**

**Practice using “I” statements**

1. One of the nurses in your clinic has been reporting to work late a lot. What could you say to her?

I feel frustrated when you come to work late so often. I need you to try coming on time.

2. A man comes to the clinic demanding to be seen right away. Five people are already waiting on the benches.

I feel pushed around when people do not wait their turn. I need you to join the queue and respect that the others have been waiting.

3. Your clinic supervisor comes to visit and says she is happy with all of your efforts and that she has heard good things about your clinic.

I feel happy when you recognize the work we are doing and the effort we are putting in. Thank you!



### ***Core Competency #5***

Referral; when and where to refer



#### 3.) *Sample Referral Note*

- ✓ Write a referral note for an adult with tuberculosis that is not getting better on standard first line treatment.
- ✓ Write a referral note for a woman with acute abdominal pain.
- ✓ Write a referral note for a child with severe malnutrition.

**Outline of a referral note [Check to see if there is a specific format for referral notes in your district. Below is an example of one.]**

<u><i>"Super Care' Clinic</i></u>	
Patient's Name	Age
Address	
Past medical history	
Current condition and what has been tried	
Reason for referral	
Request for information	

"Super Care' ClinicPatient's Name Age

Address

Past medical history

Current condition and what has been tried

Reason for referral

Request for information

"Super Care' ClinicPatient's Name Age

Address

Past medical history

Current condition and what has been tried

Reason for referral

Request for information

"Super Care' Clinic

Patient's Name

Age

Address

Past medical history

Current condition and what has been tried

Reason for referral

Request for information

#### *4.) Where to refer*

Make a list of the community resources in your area. Include both medical and non-medical referral agencies.

It helps to be aware of other agencies in your community. For example consider;

- home affairs (for birth certificates)
- religious leaders,
- police, teachers and local community organisations.

Also, social workers can be a valuable resource. Contact a local NGO. One example is FAMSA, which provides training on how to deal with rape, abuse, and maintenance.

#### *5.) When to refer*

In small groups brainstorm the many reasons you may need to refer a patient to another professional.

Possible reasons include concern about abuse, inadequate response to treatment, need for psychosocial support which you can not provide etc.

**Core Competency #6**  
Accessing and using information

In small groups work through the following;

**A. Health into Mathematics Exercises**

1.) Frequency Survey

a. Begin by naming 5 energy foods

b. Conduct a mini survey of nurses' favourite energy foods

Energy Food	Nurses' Responses									
	Nurse #1	Nurse #2	Nurse #3	Nurse #4	Nurse #5	Nurse #6	Nurse #7	Nurse #8	Nurse #9	Nurse #10

c. Calculate which energy food had the most votes, which had the least (frequency)

2.) Ten children from the local crèche were weighed at your clinic today. They are all three years old. Their weights are given below.

14 kg	16 kg
16 kg	14 kg
15 kg	14kg
13 kg	15 kg
10 kg	17 kg

a. Calculate the average weight for these children.

b. Using a Road to Health Card, assess what is the frequency of children below the 3<sup>rd</sup> centile line for a three year old.

c. What information could you report back to the crèche teachers regarding the nutrition status at their crèche?

[Healthy children's weights are between the 3<sup>rd</sup> and 97<sup>th</sup> centile lines. A few healthy children will be either above or below these line but they will not be too far above or below these lines. If a child is far below the 3<sup>rd</sup> centile line think malnutrition.]

## 3.) Calculate the percentage

7/10 people have had measles	What is the percentage?	70%
10/10 had a cough/cold	What is the percentage?	100%
4/5 people have had a fever in the last year	What is the percentage?	
6/8 women have had two or more babies	What is the percentage?	

## 4.) Breast or Bottle?

The proportion of breast fed babies dying in the first year =  $1/10$  This =  $0.1 \times 100 = 10\%$

The proportion of bottle-fed babies dying in the first year =  $18/60$  This =  $0.3 \times 100 = 30\%$

a. Calculate the percentage for breast and bottle fed babies who died.

b. Based on these statistics alone, which is better for a baby, breast or bottle?

5.) You would like to begin a DOTS (directly observed therapy) programme at your clinic but you aren't convinced that it is worth the extra effort. You need data to help convince the other health workers that it is worth the effort.

Using the following data, decide whether it is worth it to implement DOTS at your clinic.

<u>TB patient</u>	<u>On DOTS</u>	<u>Completed TB treatment</u>
1	Yes	Yes
2	No	No
3	No	Yes
4	Yes	No
5	Yes	Yes
6	No	No
7	Yes	Yes
8	No	No
9	No	No
10	No	No

*Yes DOTS* = 4      *YES and complete* = 3      *3 out of 4* =  $\frac{3}{4} \times 100 = 75\%$   
*No DOTS* = 6      *NO and complete* = 1      *1 out of 6* =  $\frac{1}{6} \times 100 =$

## ***Core Competency #9***

### Community Orientation

### ***Case studies***

*The following case studies should be completed in small groups.*

#### **1.) THE POWER OF ONE**

The following case study is based on a real example of one community nurse's ability to promote positive health changes in her community.

A community health nursing student developed a community involvement project in a peri-urban area. The objectives of the project were:

4. To ensure that the community has more water sources.
5. To ensure that the community uses water wisely.
6. To ensure that the community is aware of the importance of water.

By reviewing health statistics, the nurse found that the children from this community were over-represented in area clinics and hospitals with diseases such as lice infestation and dehydration. The nurse also found out that the main water supply for the township was three kilometers from the homes. Parents and children spent large parts of their day walking there and waiting in a queue to collect water.

The nurse initially motivated for a tanker service for the township. This idea failed because most people were not at home during business hours and therefore were unable to collect water from the tanker. She then decided to organize for more taps to be installed in the area although she first thought that this would be too much money. Appropriate government and local businesses were contacted such as the Department of Water Works, the local community nursing sister and an environmental health officer.

The community agreed to work on getting more water taps installed. The community organized to have one person from every house assist in digging trenches for the new water pipes and taps. Construction sites were then arranged so that one new tap would be available for every five houses. Four community members were chosen to accompany the nurse to the Department of Water Works.

After two meetings with the Department, it was agreed that the Department would provide all of the necessary equipment and staff to construct the taps IF the community would arrange sites and dig the trenches. Within one week, the community came together and had the trenches dug. Two days later, the Department completed construction on four new water taps!

Since the nurse could not remain so involved in this one project, a community member was chosen to lead the programme. Two months later the community was “surrounded by water taps” and the Water Department arranged to provide education on the relationship between water and health and tips on how to save water.

✓ How did this nurse identify a community wide problem?

By reviewing health statistics and the rate of common childhood problems such as lice and diarrhea and dehydration as well as the inadequate access to water.

✓ In what ways was she “creative” and resourceful?

She did not give up after the tanker service failed, She organized for water tap installation, She contacted appropriate agencies, businesses and key people in the health services.

✓ Explain how the community members were empowered to “own” this project?

People from the community were involved in leadership roles. They also worked together to dig the trenches and ensured that the taps were equally spaced for all households.

## **2.) Dealing with the unknown**

Two weeks ago, you treated a young man for bloody diarrhea. You did not hear back from him and assumed he was getting better. Yesterday you treated two more people for bloody diarrhea, a young child and his granny. Today, you see two people with complaints of diarrhea.

✓ What are the issues here?

Concern about the many cases of bloody diarrhea (dysentery)

✓ What other information would you like to get?

Where do these people stay? Do they live near to each other? Do they share a common water source? How is the first man doing?

✓ What individual concerns do you have for these patients?

They have dysentery and need to be treated and follow ups made.

✓ Who else might be at risk here?

Other people in their families and community are at risk.

## **3.) Home care for people with AIDS**

After reading the article on home based care, work through the following case;

You would like to support a home care programme in your health district. A local church has agreed to support the training of lay volunteers to offer support to affected families and orphans. You have been asked to come and speak about the health issues of which lay volunteers need to be aware.

- ✓ Outline the health issues you would want to discuss with the lay volunteers.

Basics of HIV infection, transmission, and prevention

What is the difference between HIV infection and AIDS?

Common symptoms and appropriate home management

Nutrition, comfort measures, basic counselling and support

Warning signs and need for referral to clinic or hospital

- ✓ What social barriers might this home care programme face?

Stigma and concerns about privacy, lack of support from community, fear, denial etc.

## Appendix F

### *Informed Consent Form*

#### ***Evaluating the Impact of Core Competency Training for Registered Nurses against Delphi developed core competencies for clinic work.***

The aim of this research is to identify core competencies needed in PHC nursing and to evaluate the impact of a shortened training programme against pre-established competency criteria. Susan Strasser is conducting this study in conjunction with health workers from the Health Systems Trust, Initiative for Sub-district Support and selected district health systems. The research will form part of her PhD research.

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#### INFORMED CONSENT FORM

If I agree to participate in the study, a primary health care nurse or a medical doctor will observe me before and after training. Also, I will be asked to complete a baseline test before and after training. The time to complete this test will be approximately one hour. I will have the opportunity to participate in focus group discussions within 6 months after the completion of training. These focus group discussions will be conducted by an independent social scientist.

Potential benefits for me include an opportunity to be a part of essential skills training for clinic nurses. I will receive educational materials, classroom time as well as practical guidance. I will have time to ask questions regarding concerns in my current practice as a nurse and I will potentially improve my knowledge and skills in this area.

Potential risks include frustration at time spent in training, which does not lead to a certificate or diploma as well as heightened awareness of the diverse role and responsibilities of the clinic nurse. I have been advised that this programme would be a good introduction to clinic nursing and primary health care.

I understand that my name will not be recorded on any forms or released in anyway related to this programme. I will be given an identification number at the beginning of the study, which will be used instead of a name for evaluation purposes. The identification number will not be linked to my name and no one will know it except the principal investigator and myself. I have been advised that personal evaluation is part of this study but that my identity will remain confidential by the use of an identification number.

The research will only be done if I consent. If I choose to participate, I am aware that I can refuse to answer questions I do not want to answer and can withdraw myself from the study, without penalty, at any time.

I understand that the results of this study will be given to me if I ask for them and that my questions will be answered in a timely manner. If there are any questions, anyone can refer to the ISDS nurse trainer or the principal investigator at any time.

*Participant:* \_\_\_\_\_ *Researcher:* \_\_\_\_\_  
*Principal Investigator:* Susan Stasser RN, MSN, MPH  
**Tel:** 021 447 6330 **Fax:** 021 447 6302 **Email:** strasser@oslc.net

## Appendix G

### *Delphi Round #1*

#### Call for Expert Opinion on Competence in Primary Clinical Care Nurse Training

Dear Colleague:

I would like to request your participation in this Delphi questionnaire to assist in research to investigate core competencies for primary clinical care nurse training in South Africa. You are part of an international panel of 12 experts in the field of nurse training to whom the questionnaire has been sent. The research comprises part of my doctoral work, which builds on my previous role as nurse training coordinator to the Initiative for Sub-District Support (ISDS) of the Health Systems Trust (HST). I hope you will help in this regard as I believe the research could have major benefits for the South African health care system.

For those of you who are not familiar with the method, the Delphi technique is used to obtain input from a panel of experts. Opinions, predictions, and/or judgments are requested on a subject; these are then synthesized and a revised set of questions/statements are circulated to the panel for further feedback. A series of three to four cycles of the questionnaire/statement is used to gain consensus. Feedback is provided back to the panel after each questionnaire and further input is requested.

This study investigates the issue of **competency attainment in primary level nursing**.

South African health services are faced with two important challenges:

- The need for high quality primary clinical care services.
- The shortage of nurses with the adequate skills mix to run and provide such services.

It is clear that nurses are providing advanced practice services often without additional training. Considerable discussion has taken place at the National level, as recently shown at the National Nursing Summit (August 1999), to look at the core functions of primary nurses and key training needs. Although a number of training programmes have been developed within the country to meet these training needs, such as IMCI, and a variety of formal and informal PHC courses, a serious shortage in adequately trained staff exists.

In the long term, a number of solutions are probable, such as the inclusion of some advanced practice competencies into basic nurse training as well as expanding the availability of post basic primary health care training to more nurses, especially those

in rural areas. Currently, post basic primary health care training is provided over months to one year.

Yet these solutions will take time and will not necessarily address immediate needs to adequately staff existing primary clinical services. Also, there is a risk that two distinct types of nurses will remain, those with access to this advanced training and those who will not have access to such training.

Currently, shortened training programmes are being implemented and evaluated, such as the screening course developed in the Free State. The challenge of adequately training primary clinical nurses is increased for rural nurses who currently work alone or with few other colleagues and who must provide a broad spectrum of PHC services in what is commonly known as the "supermarket approach".

The aim of this PhD is to identify core competencies needed in PHC nursing and to evaluate the impact of a shortened training programme against pre-established competency criteria.

You, as one of a few people with unique experience and expertise, are being asked to participate in a questionnaire to gain consensus on defining competence. A number of reference groups have previously looked at the issue of core competencies and this investigator held two such meetings with 18 nurse educators, primary health care trainers and working nurses. Out of these discussions a matrix of competence and services has been developed which is in general agreement with similar work done at universities and at the national level.

As part of the Delphi process used in this study, additional clarifying questions will be sent to you two more times in order to provide feedback to you and to help build consensus. It should take approximately 30 minutes to complete this questionnaire. Please return it within one week. Your participation is valuable and appreciated. Thank you in advance for your time and input.

### **Definition**

1. Primary Clinical Care Nursing: Nursing services that are provided at the first point of contact with the western health system and which include health promotive, disease prevention and curative services.
2. Competence: Possessing a range of skills, abilities, knowledge and an attitude, which are adequate for the purpose.
3. Core competence: Possessing the most essential primary care competencies to yield a "safe" practitioner.

The following diagram is used to describe the study's hypothesis.

**Hypothesis:** Core competency training, i.e. truncated training which is provided to registered general nurses and which is practical and focused on *essential* primary care areas can yield a safe practitioner.



This diagram supports the idea that to become an "expert practitioner" requires extensive training and experience, which may not always be necessary or available. The diagonal straight line in Figure 3 illustrates traditional assumptions about training. That is, there exists a linear relationship between training and competence i.e. double the training time, double the competence. However, the curved line in Figure 3 illustrates the argument that by training around key functions (core competencies), we can more quickly achieve "safe practitioner" competencies than by traditional training. IMCI, the 12-day integrated management of childhood illness course, could be an example of evidence based core competency training.

1. Please comment on this diagram and the hypothesis used.
2. Debate continues on how nursing balances the demands of clinical service and the broader community based needs of the populations they serve. Should a truncated training programme look at both?
3. In one sentence, define a competent primary clinical care nurse.

4. A Durban based reference group has developed the following matrix for measuring competence. It defines the major programmes and core competencies for primary clinical care nursing. On the horizontal axis is a list of the major programme areas in South Africa. On the vertical axis is a list of core competencies, which were identified by the Durban reference group. These competencies would each include knowledge, attitude and skills.

A. Do you feel that the competencies listed on the vertical axis are "core" competencies? Please modify, add or delete as necessary.

B. The Durban group felt the chart could be used to measure competence. They proposed that we choose one or two programs which would best measure each core competence. Do you feel such a framework could be a helpful way of assessing competence?

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CORE COMPETENCY	SPECIFIC PROGRAMME									
	Child Health	Nutrition	Women's Health (ANC,FP)	Chronic Disease	Rational Drug Use	HAST HIV/AIDS STD's TB	Mental Health	Health Promotion	Drug Management	HIS
Problem Solving: The consultation & health assessment skills, recognition of normal and abnormal.										
Management of common conditions										
Communication/ Counselling										
Referral (When to refer)										
Accessing and using information										
A caring, confident approach										
General clinic management- e.g. record keeping										
Community Orientation										

ANC-Antenatal care

STD's- Sexually Transmitted Diseases

FP- Family Planning

TB- Tuberculosis

HIS-Health Information Systems

- C. If you answered YES to B, please identify one or two programmes for measuring each competence as listed below.

E.g. clinic management- drug management and HIS

- 1.) Problem Solving: The consultation & health assessment skills, recognition of normal and abnormal.
- 2.) Management of common conditions
- 3.) Communication/counselling
- 4.) Referral (When to refer)
- 5.) Accessing and using information
- 6.) A caring and confident approach
- 7.) Clinic management
- 8.) Community orientation

5. Do you feel that the use of proxy indicators would be a worthwhile way to assess competence before and after an in-service training programme?

If you answered yes, please comment on the use of the following as proxy indicators of competence for primary clinical care nursing.

Major Service Area	Proxy Indicator
Curative child care	Ability to manage ARI using the EDL and STG's
Health Promotive Child Care	Ability to complete and interpret a Road to Health card and convey findings to mother
Women's Health	Counseling on Family Planning using a recognized tool such as GATHER
Chronic Disease Care	Ability to manage hypertension using the EDL and STG's
HAST (HIV/AIDS, STD, TB services)	Ability to treat STDs using the syndromic approach
Clinic Management	Ability to manage the clinic drug supply

Thank you in advance for your time.

Susan Strasser RN, MS, MPH

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**\*Reference:**

Polit, D. and Hungler, B. (1991). Nursing Research, Principles and Methods. 4<sup>th</sup> ed. Philadelphia: J.B. Lippincott.

## *Delphi Round #2*

### Call for Expert Opinion on Competence in Primary Clinical Care Nurse Training

#### Purpose:

To assist in research to investigate core competencies for primary clinical care nurse training in South Africa. This investigation focused on the definition of core competencies as well as how best to measure them.

The first questionnaire was sent to an international panel of 13 people in South Africa, the United States and Canada who were seen as experts in the field of nurse training and primary health care. These people with unique experience and expertise were being asked to participate in a questionnaire to gain consensus on defining competence.

Six people responded to this first questionnaire including an employee of the South African Nursing Council, lecturers at the University of Cape Town, University of the Orange Free State and the University of Natal, Durban, McMaster University (Canada) and director of a PHC training programme. Numerous attempts were made to increase the response rate including the use of email, fax and mailing the questionnaire.

There were five topic areas with a total of 8 questions.

A number of reference groups have previously looked at the issue of core competencies and this investigator held two such meetings with 18 nurse educators, primary health care trainers and working nurses, which informed the development of this questionnaire. Out of these discussions a matrix of competence and services was developed (which is in general agreement with similar work done at universities and at the national level) and which the experts were asked to respond to.

#### Definitions used:

4. Primary Clinical Care Nursing: Nursing services that are provided at the first point of contact with the western health system and which include health promotive, disease prevention and curative services.
5. Competence: Possessing a range of skills, abilities, knowledge and an attitude, which are adequate for the purpose.

Core competence: Possessing the most essential primary care competencies to yield a "safe" practitioner.

This letter is a follow up to a questionnaire you received earlier this year.

Questionnaires were sent out to thirteen people and six responded to the first questionnaire. Thank you to all who responded to the first round of questions on

measuring competence in primary care nurses. Your time and input are appreciated. The comments were both thoughtful and thought provoking. Thank you!

**If you were unable to comment on the first round, your input would still be welcome and appreciated on this second questionnaire.**

A review of the responses produced considerable agreement in a number of areas. A summary of the results from round 1 is provided below..

Yet, some of the comments have warranted further clarifying questions. Below are questions asked to either clarify or develop an issue related to competence of nurses. These questions are put in boxes for your convenience.

The following diagram has been used to describe the study's hypothesis.

**Hypothesis:** Core competency training, i.e. truncated training which is provided to registered general nurses and which is practical and focused on *essential* primary care areas can yield a safe practitioner.



This diagram supports the idea that to become an "expert practitioner" requires extensive training and experience, which may not always be necessary or available. The diagonal straight line in Figure 3 illustrates traditional assumptions about training. That is, there exists a linear relationship between training and competence i.e. double the training time, double the competency. However, the curved line in Figure 3 illustrates the argument that by training around key functions (core competencies), we can more quickly achieve "safe practitioner" competencies than by traditional training. IMCI, the 12-day integrated management of childhood illness course, could be an example of evidence based core competency training.

### Results of Delphi Questionnaire

**Question 1: Participants were asked to comment on the above diagram and the hypothesis used.**

Respondent 1 "curved line clearly illustrated the essence of the hypothesis" illustrates" traditional misconception that extensive training leads to an expert practitioner"

Respondent 2 "Training per se, devoid of an understanding of the active role required by (adult) learners remains a mechanistic concept..."

Respondent #3 Accepted the diagram and hypothesis

Respondent #4 Accepted the diagram's idea, *"But, it has to be borne in mind that in order to yield safe practitioners, training should encompass: Intensive training on core competencies, continuous practice in a PHC setting, previous experience"*

Respondent #5 *"I agree with the premise that training around key functions/core competencies will be a quicker way of attaining a safe practitioner. But, to achieve this outcome, the training approach must be assessed. Perhaps, training needs to move away from the "standing orders" approach of the IMCI course to a more professional development type of approach, where the practitioner is taught to be an innovative thinker, who is able to function as an independent practitioner"*

Respondent #6

*"It is a difficult question, depends on how well nurse's baseline knowledge-core education on PHC(which) will make her safe"*

#### **SUMMARY**

**There was general agreement with the basic premise of the diagram. Important ideas were contributed to the development of the diagram such as the need to assess the training approach and concern about a mechanistic "standing orders" type of training. Because of this, there is a desire by some to move toward what is seen as more "professional development". This is linked to the input, which says that the question is not an easy one because it is dependent on the baseline knowledge (and perhaps even the potential and readiness to learn) of each nurse.**

#### **Question 2: Should a truncated training programme look at both clinical service and community based needs?**

#### **SUMMARY**

**This question clearly showed consensus for the need to address both clinical and community based needs in a proposed truncated training programme.**

Question 3:

The question was, "In one sentence, define a competent primary clinical care nurse."

*"This is a nurse who has the appropriate knowledge, skills and attitude to tender comprehensive health care in a primary health care setting."*

*"One who not only has knowledge but who exhibits critical thinking and who applies judgement appropriately with a caring attitude"*

*"(A) person who acts as change agent to enhance responsibility for own health, family health and community health by enhancing self-care on all levels of nursing care"*

*"A competent PCN is an independent practitioner who knows her/his own scope of practice and is capable of assessing the clients needs, diagnosing and treating common conditions and through the interaction assists the clients to attain optimal health."*

*"Able to identify, plan implement and evaluate a client within his/her environment at first time contact"*

### **SUMMARY**

Many descriptors were provided in the definitions of a competent primary clinical care nurse as shown above. These descriptors are in general agreement with those provided in the two previous reference group meetings. One (advocacy) has been added to the list below.

#### **\* New Question**

- 1. Please rank, in order of importance, the key descriptors used in the definition of a primary clinical care nurse. This will help to prioritise the content of training.**

**[1=most important**

**14=least important]**

<input type="checkbox"/>	<input type="checkbox"/>	Critical thinking	<input type="checkbox"/>	<input type="checkbox"/>	Knowledge
<input type="checkbox"/>	<input type="checkbox"/>	Judgement	<input type="checkbox"/>	<input type="checkbox"/>	Caring attitude
<input type="checkbox"/>	<input type="checkbox"/>	Change agent	<input type="checkbox"/>	<input type="checkbox"/>	Promotes self-care
<input type="checkbox"/>	<input type="checkbox"/>	Independent practitioner	<input type="checkbox"/>	<input type="checkbox"/>	(Works) within scope of practice
<input type="checkbox"/>	<input type="checkbox"/>	Assesses needs	<input type="checkbox"/>	<input type="checkbox"/>	Diagnoses common conditions
<input type="checkbox"/>	<input type="checkbox"/>	Treats common conditions	<input type="checkbox"/>	<input type="checkbox"/>	Assists client to attain optimum health
<input type="checkbox"/>	<input type="checkbox"/>	Advocacy			
<input type="checkbox"/>	<input type="checkbox"/>	<b>Knowledge, Attitudes and Skills to provide comprehensive primary health care</b>			

A Durban based reference group has developed the following matrix for measuring competence. It defines the major programmes and core competencies for primary clinical care nursing. On the horizontal axis is a list of the major programme areas in South Africa. On the vertical axis is a list of core competencies, which were identified by the Durban reference group. These competencies would each include knowledge, attitude and skills.

**Question 4a.** Do you feel that the competencies listed on the vertical axis are "core" competencies? Please modify, add or delete as necessary.

#### **SUMMARY**

**There was general agreement with the matrix as presented. Some amendments were made which are shown in Italics. Also there was questioning of the need to separate out referral as a separate competency. Secondly, the question was raised whether a "caring and confident approach" and community orientation can be defined as competencies.**

**Question 4b.** The Durban group felt the chart could be used to measure competence. They proposed that we choose one or two programmes, which would best measure each core competence. Do you feel such a framework could be a helpful way of assessing competence?

#### **SUMMARY**

**There was considerable variability in the responses as well as questioning of the practicality of using such a matrix to measure competence. The matrix provided a useful framework but does not present the specific criteria for competence. As one respondent suggested, we would need to specify knowledge, attitudes and skills for each competence (in each programme).**

**Question 4c.** If you answered YES to B, please identify one or two programmes for measuring each competence as listed below.

E.g. clinic management- drug management and HIS

- 9.) Problem Solving: The consultation & health assessment skills, recognition of normal and abnormal.
- 10.) Management of common conditions
- 11.) Communication/counselling
- 12.) Referral (When to refer)
- 13.) Accessing and using information
- 14.) A caring and confident approach
- 15.) Clinic management
- 16.) Community orientation

#### **SUMMARY**

**Three people attempted to answer this question by listing specific programmes for each competence. There was little commonality in the responses. Two of these people chose more than two programmes for most of the competency areas. It is clear that there is a lack of agreement or ability to pick one programme over another. Indeed, an argument could be made for the need to be competent in all domains to be able to manage each programme well.**

**One respondent felt the question was not clear and another felt that *"One programme can fall under more than one competence (and) more than two programmes can fall under one competence"*.**

**Another respondent further explained, *"I do not think that one or two programmes would best measure each core competency. However, it is my opinion that all the core competencies given will be needed to some degree in all of the listed programmes. The chart could therefore be used as the basis of an instrument which will need to be developed to measure competency in each given programme."***



<i>professionals and clients</i>										
--------------------------------------	--	--	--	--	--	--	--	--	--	--

ANC-Antenatal care      FP- Family Planning      STD's- Sexually Transmitted  
Diseases  
TB- Tuberculosis      HIS-Health Information Systems

**\* New Question**

2. Although it is widely recognised that you need to be proficient in all areas to be defined as a “competent practitioner”, do you think it is possible to pick one or at most two *indicators* of competence per programme where that competence will best be measured?

[YES]

[NO]

3. If yes, which indicator would you choose?

To answer this, please mark one or two competencies with an X per (column) programme.

4. To make these core competencies measurable, they will need to be defined within programmes.

a. Do you think they should be made measurable?

[YES]

[NO]

b. Do you think it is possible to make each competency measurable?

[YES]

[NO]

c. In your opinion, how should this be done?

{For example, one way to measure competence would be to establish minimum competency standards, which are relevant to all programmes. The most elaborate way would be to define specific competencies for each and every programme, i.e. child’s health, women’s health etc.}

**Question 5a**

Do you feel that the use of proxy indicators would be a worthwhile way to assess competence before and after an in-service training programme?

**SUMMARY**

The majority of respondents affirmed the use of proxy indicators. No one disagreed with the use of proxy indicators. Some amendments were made as shown below. One person felt there was the need to be more specific in the area of clinic management—management of clinic drug supply. Also, concern was raised that proxy indicators can be limited in their usefulness.

Finally, one person identified the importance of semantics and the message this conveys. The addition of “*children who have*” and “*patients who have*” were added to emphasise the need to beware of the medical model of treating a disease rather than a person who has the disease since compliance (and ultimately health outcomes) are all about changing health behaviour.

**Question 5b**

If you answered yes, please comment on the use of the following as proxy indicators of competence for primary clinical care nursing.

Major Service Area	Proxy Indicator
Curative child care	Ability to manage [ <i>children who have</i> ]ARI using the EDL and STG's
Health Promotive Child Care	Ability to complete and interpret a Road to Health card and convey findings to mother [ <i>and teacher</i> ]
Women's Health	Counselling on Family Planning using a recognised tool such as GATHER <i>Too limiting, add for example, PAP smears, conducting deliveries etc. Or reproductive health</i>
Chronic Disease Care	Ability to manage [ <i>patients who have</i> ]hypertension using the EDL and STG's
HAST (HIV/AIDS, STD, TB services)	Ability to treat [ <i>patients who have</i> ] STDs using the syndromic approach
Clinic Management	Ability to manage the clinic [ <i>resources</i> ] drug supply <i>[Too limiting and non-specific]</i>

## Question #5B

## Proxy Indicators

***"Useful and simple, practical methods of assessing knowledge, specific programmes and core competencies needed to treat them."***

***"More skills have to be added under proxy indicators e.g. women's health and counselling on FP. s Women's health does not comprise only FP, one can add, for example, PAP smears, conducting deliveries etc."***

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**\* New Question**

This is a different approach to measuring competence. Instead of assessing core competencies, this approach picks proxy (i.e. substitute) indicators of competence. These would serve as surrogate markers of ability.

Do you feel this approach is valid?      [YES]                      [NO]

In your opinion would this approach be more useful?  
   [YES]                      [NO]

   more practical?  
   [YES]                      [NO]

Please explain:

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**Thank you again for your time.**

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## Appendix H

### *Focus Group Transcriptions*

#### *Focus group transcript coding key*

Category	Color Code
Major category	Prescribing
Subordinate category	Do not over-prescribe
Additional comments	
a. Typical	a. prescribe only after history
b. Atypical	b.
c. Negative	c.

10 March 2004

Focus group transcription (Site #1)

The first question is just for us to generate discussion on your perceived changes to competency after the training and what ever you tell me please give me an example of what ever you think changed after the training.

The course has helped me so much, and today I know how to prescribe to a patient and before the training every time the patient complained about pain I used to give them Panado, and every patients, that leaves the consulting room was having Panado. But after the training I started probing the patients sometimes you give Panado psychological or social problems and not just prescribe. Sometimes even with headaches I used to prescribe Panado now I dig for information and not just prescribe especially Panado.

Anybody else with a different experience?

Okay, basically I am not involved with patients because for when I was but I was taken into the course, but I am not using it, I am sorry to say that I have not used it. I am sorry to say that I have not used it at all because I am not involved in health care, but then taking the course, you learn even if you are not using it, there is something that you come out with so probing was the main thing that helped me through, even go through a shift and now that you don't just do things superficially and (don't just) take what the patient is telling you, but its going deep down the bottom of the problem and probe to make sure you get the real problem. Normally what happens is that with patients you might find that they are hiding something behind, but not necessarily hiding but they don't just put things straight and you learn to go beyond what they are saying.

So are you saying in your case you are not directly involved with patient care, but can you give us an example of how you use probing where you work, patient care?

When a person comes with a problem because normally I do come in contact maybe with clients or patients and I now know that you don't just take a face thing of a thing that a person is telling you but you just might find out other problems that might contribute to the real problem.

In this course we learnt a lot about interviewing a patient, history taking, examining the patient, diagnosing the patient and treatment giving, so compared to previously when we didn't do this course and we gained a lot, because we now know how to inspect a patient and to take history and in history taking we know that we have to take the past, the present and the medical history of the family, then in have to interview the patient and with diagnosis we know there is different diagnosis and we go according to the history of the patient and assessment of patient and some test so I gained.

So are you saying before you went through this course you were not doing, I just want to see the difference, are you saying you are using different techniques in interviews, what exactly do you do differently now compared to before, you were interviewing client when they come in, but maybe what is it that you are doing differently, just give me a clear example for a person who doesn't know your work, were you not interviewing them at all or what is the difference?

Before we just asked names and the condition of the patient, now we know that if you interview a patient as the sister said, you have to probe the patient and ask the questions.

If I may go deep in, a patient coming with a chest pain or cough or cough related to chest pain, you ask the patient for how long have you been coughing we have not been doing that previously I for one would just ask the patient when did you start coughing and then after I would just prescribe for the patient we had not been doing, today we ask what does really make you cough, when is cough aggravated? Is anybody coughing at home, is anyone at home with TB, is the pain related to cough?

More to examination, previously we only took history from patients and prescribe, after taking history, but after the course we know that maybe when a patient complained for a period of two weeks or more we had to do physical examination of the patient, so we learned.

We had to do physical inspection, palpation, percussion then we have been implementing and give appropriately according to findings. So we only took history and give treatment, and now we use stethoscope.

At least since we have undertaken the course I realize I have improved at first I never had light that patients must be examined, we usually asked patients their problems and then we would just prescribe, but since then we know about inspection, at least we can examine the patient's chest, and we know if it's a child what is required and what to consider, what to check, at least there is much improvement, but we still lack emphasis, that when we compare ourselves with those who have done a full year course we still lack more information.

Have you improved; are there any other examples that you can give?

Maybe just to add on that part of treatment, when you examine a patient, this is my own view even if I am not involved with patients normally I thought if a patient comes in you just think and OK let me give prescription and then you just give antibiotics, but then through this learning we learnt that you don't just give antibiotics in each and every patient that comes with a cough, you have to differentiate between a cough that is viral or bacterial then you know when to give antibiotics, if patient is feverish, I didn't know that there is a thing of having to take into consideration the fever on the patient that that could be an indication of a bacterial infection that needs antibiotics because cough at times can be viral.

Also with medication I know that there is a thing called non-drug management, I also used drugs always, I think maybe non-drug management is given maybe when there is cough you say they must make lemon and water but with other systems, I don't know, but now I know you exercise and run, they help.

In terms of your confidence level after going through the training how was your confidence, did it improve: confidence as in being sure of what you are doing, that type of confidence do you want to share examples of how that was affected by the training?

It has improve, previously before the course when admitting a very ill patient I would take the patient's history then go to a nurse who has done primary health care course, to proceed with the patients so since I have done the course, I am doing everything and when the patient need referral, I proceed with referrals, so meaning that the course has improved my confidence. I am confident of what I am doing.

That is one good example, any other examples?

At the clinic I work there was no primary health care sisters, but after the training it was like I was a primary health care sister because even my colleague I worked with she was very cooperative and when she had a problem, she would send her patients to me would call me and we would discuss the patient and she would say what did the doctor say about this and this, and you know I could solve the problem, and sometimes maybe refer appropriately and that made me very confident cause I used to make a follow up of my patients only to find that what I have sent is very serious.

So, there was more appropriate type of referral and with almost the correct diagnosis so almost build your confidence, any other examples?

So. I remember one time I had referred a patient who I thought had a liver problem she was sent to (name deleted) hospital where they found that she had some gallstones, at least I was quite close with the diagnosis.

Any other examples around confidence, maybe did everybody experience some changes in the levels of confidence, or you cannot say?

**I do not think I am much confident but I am much better than before.  
We are a bit confident.**

I was told that there are nine core competencies included in the manual; please list them for me. It is not a test, just what you remember.

**Yes they are;  
Taking history, interview,  
Examination, physical and psychological  
Probing  
Diagnosing  
Prescribing including non-drug treatment  
Referrals**

In all this competencies, you feel you have improved? Do you want to tell me about gaps that you might still have in terms of taking history or you are ok with that?

Can we talk about reflection questions in the manual?

**Cannot remember, are you talking of a scenario, you ask a patient, what is the problem? They were scenario type.**

**Did they give us manuals?**

**Yes, they did give us manuals**

**Did we take them home?**

**Yes, we did.**

**They were scenario type, maybe a patient has a chest pain you have to diagnose and you have to confirm at a certain stage that what ever you have diagnosed is correct.**

Coming to nurse-client relations, did the course influence your relations with the clients in any way? If it did please, give me examples of how.

**I mentioned that fact that I am not directly involved in the patients, there was some changes based on patient and nurse interaction cause the way we asked a question is different from previously and we could now go deeper down the problem and it gives a patient and nurse time sit and talk during the course we had plenty of time to do this and it improved the relationships because you could talk to the patient, the patient could come back and ask to talk to nurse so and so.**

I would like people to share their own personal experiences.

**With me at first, if a patient would not answer my question, I would just prescribe but now I ask question and then probe, especially teenagers, she would start crying now I ask questions and more questions and then I would ask her if she has a boyfriend and later when she open up I would then ask about pregnancy tests, and by then we would have become friends.**

I learnt that all people are unique, don't compare a patient with the other patient, they **present their complaints in a unique manner**. Before, it was just to say, maybe a patient would come with a cough and some cough have other social problems before it was treating cough, but now it's cough and other

So you are saying now you are not only treating cough as the coughs differ.

**The manner of approach has not yet changed but at least I give myself more time to attend the patients, I do not think there is any change.**

I have seen changes in her!

She is saying there is no change, and if it's not self confirmed unfortunately I won't take it she has to see it herself, but she is saying she is giving herself more time with patients. Anything else on how the training has influenced you?

**Previously, I used to tell only those with high BP's and high temperatures to come for follow ups. Now, I encourage everybody some with physical and social problems, to come for follow up and now I am taking full history of patients. Previously I only referred those with high BP's and high temperatures for follow-up.**

Was it because you never identified any problems except physical problems?

**It was because previously I only concentrated on seeing the high temperatures and the high BP and not taking full history of the patient, but the course I could differentiate.**

Give an example of a case you have asked to come for follow-up.

**A psychiatric patient, now I usually involve the family, now I also give family therapy so that they accept the patient. If a psyche patient becomes violent or aggressive at home the family would bring the patient to the clinic and they would say nurse here is your patient, they did not know that they were also involved in the treatment of the patient. Previously we did not give ourselves enough time to include the family and talk to them also to educate the family to accept the patient and about avoiding triggering factors.**

Are you saying you only did this after training?

**What, teaching the family?**

This example, you have just given of a psychiatric patient and how you

**Previously, we did not give our self enough time to talk to the family.**

Let us discuss your experiences, observation, opinions and views of the course; I would like us to discuss the course.

Length of the course, how long was it?

**10 weeks, 3 months, 3 weeks, 10 days, 10 days in three months.**

What do you think of the course, too short, too long or...?

**It was too short.**

Why?

**Because, it was interesting and we still needed to learn and develop skills if there was more time.**

What would you recommend?

**One year, maybe it be done two times a year for twenty days.**

**I was thinking of once a week for the whole year equaling forty days.**

**Maybe a week block system for ten weeks equaling fifty days**

**Two months is OK since it's a crash course, it's just basic course.**

**It must be something that is going to relieve the one-year programme.**

**It should not be regarded as a crash course, that we are not going to do anything about it, another recommendation is that it should be certificated, there is no point if not certificated.**

Content of the course, what did you like most about the course?

**I do not remember**

**From the course what do you think should be left out, what was not necessary?**

**Everything was necessary**

Was it difficult, easy or OK?

**It was OK, because we grabbed a lot.**

What made it OK?

**It was because of the facilitators, and we also come with background knowledge, the course built on what we had.**

How relevant is it for your current work?

**It's very relevant, because it's things that we do on daily basis.**

So, it's exactly what you needed in terms of your daily work?

**Yes**

Did it influence attitudes towards learning?

**It encouraged us to learn more especially to learn the primary health care course.**

What other factors influenced your learning, regarding time, family factors or work situation?

**It was very strenuous as sometimes we got home late after a 7 pm shift and we would still be expected to read for the following day.**

Training manuals how were they, were they OK, thought provoking or what?

**They were easy to follow with pictures and interesting with guides like pictures**

**Scenarios were understandable and easy**

**I enjoyed reading the manual.**

**I like the way they wrote about the physical examination because I like the way they wrote about physical examination they were practical.**

**I don't remember.**

When was the course?

**2002 June or July**

Any changes recommended to the manual?

**More treatment guides to improve the manual.**

Ability to manage situations or things better, did it contribute positively?

**Yes, it did.**

How, please give examples.

**In prescribing treatment**

**We can manage our patients better than before and that makes us happy, if patients come back and say sister (inaudible) in good, it makes us proud.**

Usefulness of course?

**Very useful because it gave me skill of taking history, examining, diagnosing and treatment.**

**For me it's not useful because I'm not applying it. (Not working directly with patients)**

**It's useful we can manage our patients we need a refresher course before we take it for granted.**

**It was only done in 2002 and nothing now; follow up course might be useful.**

Problem Solving

**Yes**

**Yes**

**Increased**

**Yes, improved skills**

**No**

Management of common conditions

**Yes**

Communication and counseling

**Yes**

**Need to learn more about counseling**

*[Others disagree]*

Rational drug use

**No problem**

Referrals

**Complete**

Accessing and using information

**Don't remember specifics**

A caring and confident approach

**Fine.**

General clinic management

**Yes**

**No**

**Not yet**

**Still need something more**

Community orientation

**Not exactly**

**Yes**

**It should be part of the program**

**Can't remember exactly what it was**

**All nurses at clinic without primary health care should also attend, staff should alternate those who done this course should be allowed to do a primary health care or maybe a course on its own with a certificate. Should be a course on its own and certificated.**

**Our understanding was that it was a research course and we recommend that it's a stand-alone course.**

24 August 2004

Focus group transcription (Site #3)

**The first thing I would like to know is how you felt about the course comments, criticisms: General comments concerning the course**

The course has taught me a lot because I know about primary health care, I just had a little general knowledge when I was at the clinic, the course helped me a lot. The course, we were taught how to examine, history taking and then were taught by PHC nurses.

\*\*\*\*\* I went to PHC clinic., So I can see it helped me a lot because I then know how to **take history properly and know how to examine a patient and from there I even know how to diagnose minor ailments and to treat using this book, The PHC nurses** \*\*\*\*\* What I can say it was a good thing, which has made me happy, could have knowledge about PHC. Because we used to think it would be done by those who were trained and we were not interested, even now I have a bit of knowledge, **I can even remain in a PHC clinic alone and able refer cases for doctor**, I can say it opened my eyes (sounds of affirmation from others) Even now **I am referring to the books.**

Ok, with me, what she said is almost what I want to say, it has helped, gained a lot, improve knowledge concerning what we have taking history, diagnosing, and referring where necessary and have a **\*\*\*for the patient and refer to a previous history and treatment to be able to give patient proper nursing care or treat correctly**. A wonderful course to, I think even in future implemented to other nurses who are still behind and who are in clinic. It will be helpful, because sometime in clinic lacking because sometime you find that others are not doing it as should but as from now it is a great improvement.

**Thank you,**

We have the knowledge we are not referring to the doctor, the problems are managed we **don't refer minor cases to doctor, only refer those who also need doctor** before we had knowledge everything we were referring, those that we are referring because there is a need to refer, not like before, so I can say it was a good course, Maybe they can just improve the period.

**[Knock at door, 2 more participants enter ] Come in, hi [tape off]**

**Good ok, welcome to our two more participants, continued with referral no longer refer unnecessarily. Thought, feelings experiencing about the course**

I found the course a bit ok, moreover that I am working with a PHC sister, she was assisting me is teaching me, to pick up some conditions some were treated and some were referred, but it is good to continue so that I can gain knowledge. Working with a PHC sister helped me.

**How did you find it helpful?** I was able **to diagnose correctly**, she was teaching me.

Another nurse,

We were two and when the other is off, the other is on duty.

**So there were two of you clinics, always one on and one off. No one to supervise you just read the books. Any comments on that?**

It was difficult, some things I have to ask someone.

**So, when you had questions; there was no one to ask. Any other additions**

We were far away from each other.\*\*\*

Myself, I want to add that maybe next time they can arrange a place where you can be lectured and specific person to follow up with the practical. Where we have some problems, we can ask, she can guide us, when we are alone it is difficult. I had the problem where I was stationed that the one who was responsible to help me always said she was busy.

**So you felt you needed more teaching at a central place and someone to follow you up?**

Yes, one person who is responsible. Then she give us some evaluation and questions, which we answer whereby it would be a good thing.

It would be a good thing for us, she would tell me to read if the clinic is not busy but when ask her, and she says she is busy or hungry. So, it is difficult, but the course is good, because when you read, you get something.

**Anything to add?**

**So, your challenge you were really alone, your preceptor wasn't available, you were reading the manuals, but no one to ask.**

It would be help if someone to be allocated for that specific course, to follow up when we have a problem, we can ask. It would be better next time if it could be conducted like that.

I think another problem is because of short staff, she says she is hungry; she does not have enough time. I think because most of the clinics are short staff.

**Because it is so busy, you don't have time to learn more.**

Need a separate place, time to study

**Just need time to study?**

Also one more thing, we don't have a clinic doctor to ask, that will help us with the feedback, because once we have do a referral to the hospital there is no feedback so we don't know what happened to the patient.

**How would you relate this to the course?**

If the doctor is at the clinic we would refer the patient, and the doctor could teach us.

And, since you did this course, you said that you referred less to doctors and could work at PHC clinic on you own? Maybe we can talk about how this course has changed our confidence as nurse practitioners?

**This book, \*\*\*\*even though are short staff we got this book that go and prepare for a lecture, on that day they said this and this and we even do examinations, they laughed but after when do practical myself when I examined, and presented I had some problems but when I presented that day, I was good to me we have learned a lot. I am no longer asking those who are PHC trained to come and see what is going on.**

So your improvement in confidence was because of practice

**Only enough chance to practice.**

**Refer minor things but from now, I don't have problems.**

Anything else about how the course affected your confidence?

So, was there any change in your confidence?

**when I presented that day, I was good to me we have learned a lot. I am no longer asking those who are PHC trained to come and see what is going on.**

**A little bit, I can diagnose some conditions even if call PHC supervisor she will tell me exactly what I know, and treat patients and refer**

**SO you are able to diagnose and treat?**

**Yes**

**Any additions?**

**How would you say the course has changed the way you practice as a clinical nurse?**

Now, we are able to **examine the patient correctly and take history correctly** the way it is supposed to be done and before it was not like that maybe, because we did not have

knowledge concerning that, **even checking for previous illness and treatment**, this has helped a lot to manage the patient correctly, so we have improved a lot.

**So, it has changed the way you examine and also able to take history better?**

Yes.

**I also know the conditions, which need referral and which I can treat and can recognize these better** than before.

**Anyone else, noticed how his or her practice has changed your nurse-patient relationship?**

It is different; you **find some patients demand to be seen by me.**

**Why is that?**

**Because I think it is the examination and time I give the patient because now, I don't mind about the queue because at least you have to examine correctly, refer to the books and give correct medication.**

**That's great,**

SO, because you are examining and know how to refer and you are not as rushed, not worried about the queue, the patients want to see you.

Yes.

Now, we are not rushing to another patient because of time or anything doing exactly what the course related to taking time to treat patient correctly.

**How do you feel about the course length? Wish it could be ongoing. Too short?**

\*\*\*\*

The course was too short.

**Why?**

Because it was for the first time, it would be better to come once per month, it was just an orientation, we had to read the books which is of course good, but for us to practice and (inaudible)

The course is finished but get a problem that could have been worked out (**problems with supervisors**)

**A number of problems with your preceptors? They were too busy or not there at all. You said it was a good experience. They were interested to teach you.**

At first we were not happy \*\*\* but after we started to enjoy being with them, examining patients, taking history, \*\*\*some things they tell you this and this and this it is helpful, it helped us a lot

For me I can say it was a bad experience concerning my preceptor, because she did not have time for me, to show me or to maybe allow me time to demonstrate, to rectify my mistakes, maybe we can have a place where we can do that course with one preceptor who is responsible for all of us.

**How did you feel about these manuals?**

They are clear

**They are so helpful!**

Helpful.

**Tell me more about that**

The information is clear

**What else?**

Treatment for conditions useful

Liked that they were free [laughter]

**Do you remember the 9 core competencies?**

Silence

Not really hey? I'm not testing you just wonder what you remember about the course materials

**Anything else about the course, how it has changed you?**

Anything else?

Have a specific place and a specific person, who is responsible for us, if we have any problem we can contact her, who is going to be available all of the time.

**Thank you for coming and sharing your thoughts about the course. Thank you for your assistance.**