Description of the core competencies to be included in an emergency nurse training programme

by

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Submitted in fulfillment of the requirements

for the degree of

MASTER OF ARTS

in the subject

HEALTH STUDIES

at the

UNIVERSITY OF SOUTH AFRICA

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February 2010

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DECLARATION

I declare that the Description of the core competencies to be included in an emergency nurse training programme is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

_____ _____

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Description of the core competencies to be included in an emergency nurse training programme

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ABSTRACT

Emergency nursing is an evolving field in Kenya with the Nursing Council of Kenya (NCK) yet to list it as a speciality area.

This study wished to identify and describe the core competencies that should be included in an emergency nurse training programme based on the views of nurses and doctors who work in emergency units in a level 1 hospital in Nairobi, Kenya.

The researcher used qualitative explorative and quantitative descriptive designs in phases 1 and 2, respectively, and convenience and purposive sampling.

The study found that the respondents emphasised the inclusion of 137 (93.2%) of the 147 skills in the questionnaire as core competencies and disagreed with 10 (6.8%). Concomitantly, the vast majority of the respondents (93.6%) supported the inclusion of the skills compared to those (6.3%) that did not. Based on the findings, the researcher made recommendations of the core competencies to be included in the programme.

Key concepts: Core competencies, emergency unit, emergency nurse, life-threatening situation, educational programme.

ACKNOWLEDGEMENTS

My praise and thanks to the almighty God for giving me good health throughout the time I embarked on and completed this dissertation.

I wish to express my exceptional appreciation to the following people who stood by me during the process of this study:

- Professor SP Hattingh, my supervisor, for her unfailing guidance, patience and encouragement. Many a times I felt like it would never work, I appreciate your dependable support most sincerely.
- Dr Tanya, my joint supervisor for selfless and unselfish sharing and guidance.
- The University of South Africa and the institution under study for allowing me to conduct the study.
- George, my husband, for his love, understanding, encouragement and financial support.
- Nevin, Eric and Maslina, my children, for being there for me.
- Mr Ojil, my brother- in-law and mentor, for his steady and continuous encouragement.
- The respondents, for sharing their time, experience and knowledge with me.
- My colleagues and friends for their understanding and support throughout this period.
- Ms Cooper, for professionally and critically editing the manuscript.

Dedication

In memory of my loving mother, Grace, who passed on at the most crucial time of this study, 4th November 2009.

Mum, I will forever love and Miss you. Rest in eternal peace.

AMEN.

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List of abbreviations

AACN	America Association of Colleges of Nursing
AACN	American Association of Critical Care Nurses
ACLS	Advanced Cardiac Life Support
AHA	American Heart Association
ASIRT-K	Association of Safe International Road Travel in Kenya.
ATLS	Advanced Trauma Life Support
BCEN	Board of Certified Emergency Nurses
BLS	Basic Life Support
CEN	Certified Emergency Nurse
CPR	Cardio Pulmonary Resuscitation
DENOSA	Democratic Nursing Organization of South Africa.
ENA	Emergency Nurses Association
ENA-K	Emergency Nurses Association -Kenya
EPC	Emergency Paediatric Course.
ERC	European Resuscitation Council
ICN	International Council of Nurses
ILCOR	International Liaison Committee on Resuscitation
KCHN	Kenya Registered Community Health Nurse
KHA	Kenya Hospital Association
KNH	Kenyatta National Hospital
KRN	Kenya Registered Nurse
MCI	Mass Casualty Incidents
MOH	Ministry of Health
NCC	Nairobi City Council
NCK	Nursing Council of Kenya
NCSBN	National Council of State Boards of Nursing
NEPEC	Nursing Emergency Preparedness Education Coalition
NMCK	Nurses and Midwives Council of Kenya.
PALS	Paediatric Advanced Life Support
RCK	Resuscitation Council of Kenya
RCSA	Resuscitation Council of South Africa
RSA	Republic of South Africa
SANA	South African Nursing Association
SANC	South African Nursing Council
SANT	South African Trained Nurses
SPSS	Statistical Package for the Social Sciences
TNCC	Trauma Nursing Core Course
USA	United States of America
WHO	World Health Organization

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CHAPTER 1

Orientation to the study

1.1 INTRODUCTION

Throughout history wars have accentuated the need for nurses. During the Crimean War (1854-1856), the inadequacy of the care given to injured soldiers led to a public outcry in Great Britain. For the duration of World War II (1939-1945) casualties created an acute shortage of caregivers and the Cadet Nurse Corps was established in response to this marked shortage (Korzier & Erb 2008:7). Emergency nursing has developed alongside wars in most parts of the world, and wherever and whenever there has been war, nurses have been there to care for the wounded and the ill (Sheehy 2007:555). Florence Nightingale's role in addressing this problem led to modern nursing practice as it is known today (Korzier & Erb 2008:8-21).

Since the 1970s advanced technology has resulted in significant changes in emergency nursing and increasingly well-informed healthcare consumers (MacPhail 2003:1). Subsequently, advances in the specialist field of emergency nursing have rendered it more complex in terms of provision and societal expectations.

In response, the United States of America (USA), Australian and other governments have introduced policies and targets for both pre- and in-hospital emergency care commensurate to the advances in medical technology and increasing public demand for high emergency quality services (Wilkinson & Skinner 2002:[3]). Professional bodies have been formed to provide guidelines on aspects of emergency care. For example, the European Resuscitation Council (ERC), the American Heart Association (AHA) and the International Liaison Committee on Resuscitation (ILCOR) have developed resuscitation guidelines (Nolan, Soar & Eikeland 2006:420).

Nursing as a whole and particularly emergency nurses have not only had to responded to the rapid developments but have also been pivotal in the implementation of these changes, taking on increasing autonomous roles in the care and treatment of emergency patients. The perception of the emergency nurse continues to grow as

she/he becomes more active in decision-making and is viewed as a key member of the emergency management team in the various emergency care environments (O'Shea 2006:xi).

1.2 BACKGROUND TO THE STUDY

The study was conducted in a Level I hospital in Nairobi, the capital of Kenya. To orientate the reader, a brief introduction is given of the country, its capital and the setting in which this study was conducted.

1.2.1 Kenya

Kenya is situated on the eastern coast of the African continent. It is bordered in the north by Sudan and Ethiopia and in the west by Uganda and Lake Victoria. Tanzania and Mount Kilimanjaro lie to the south while Somali and the Indian Ocean form the eastern border (see figure 1.1). Kenya covers a surface area of 582,646 km² and is about 2.5 times the size of Britain (Saffer 2001:6). From the Kenyan coast on the Indian Ocean, low-lying plains rise to the central highlands, which are bisected by the Great Rift Valley, a fertile plateau in the west. Mount Kenya, the highest mountain in Kenya (and the second highest in Africa), which reaches 5,199 metres, is in the Kenyan Highlands (Saffer 2001:6). The Kenyan climate is tropical, namely hot and humid at the coast, temperate inland and very dry in the north and north-eastern parts of the country.

Kenya is divided into low-lying arid and semi-arid lands, the coastal belt, the plateau, highlands and the lake basin around Lake Victoria. In July 2007, the population was estimated to be 36,913,721 (Kenya National Bureau of Statistics 2007:[5]). Of these, approximately six million people lived in urban areas. The age distribution of the population is as follows: 0-14 years: 42.2%; 15-64 years: 55.2% 65 years and over: 2.6% (Kenya National Bureau of Statistics 2007:[6]; Saffer 2001:6).

Figure 1.1 Map of Kenya

Source: Mapsworld (2008:[7])

The Ministry of Health (MOH) of Kenya ensures quality healthcare for all citizens through public (government-sponsored and financed), private and faith-based health facilities throughout the country (MOH 2008:[8]).

1.2.2 Nairobi

Nairobi is the capital of Kenya and the administrative capital of the region in which it is situated. The name "Nairobi" comes from the Maasai phrase *Enkare Nyorobi*, which in English means "the place of cool waters" (Sayer 2009:[4]).

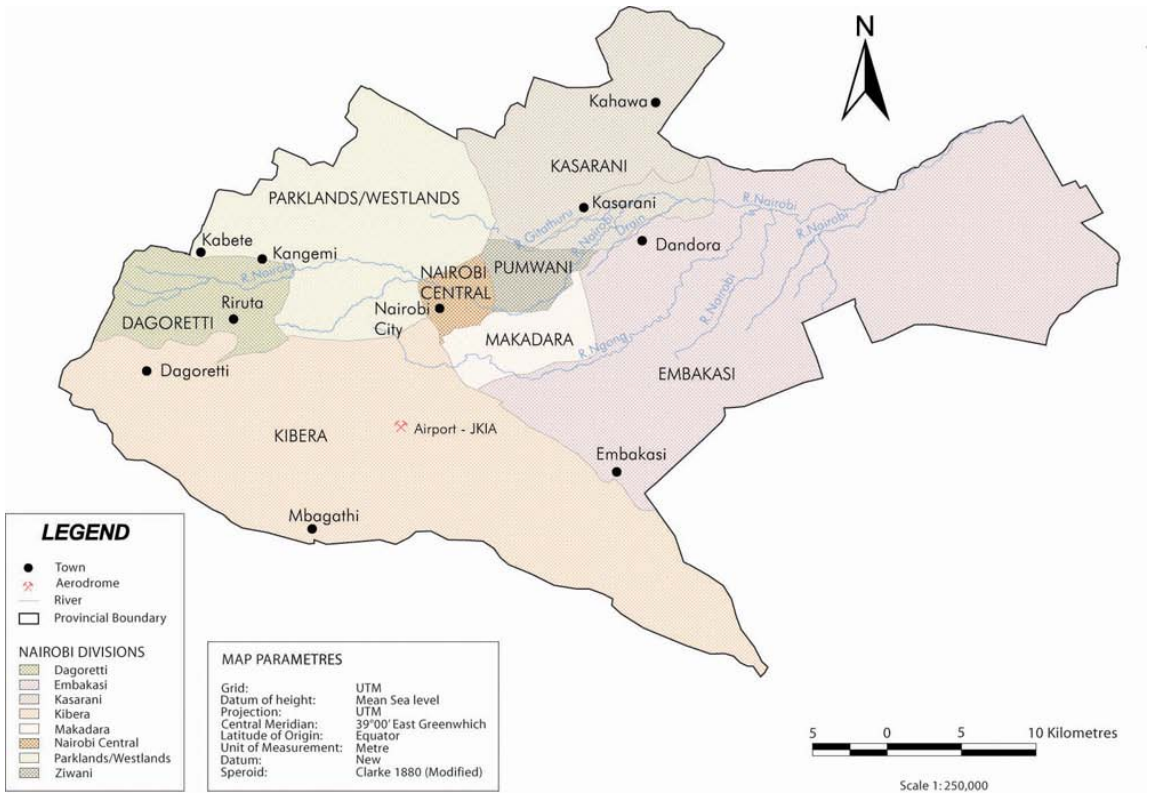

Figure 1.2 Map of Nairobi

Source: Mapsworld (2009 [3])

Nairobi has a population of 3.2 million people (Nairobi City Council [NCC] 2007b:[2]). The population of Nairobi grows at an annual rate of 6.9%, a much higher rate than the national population growth rate of about 2.8%. The metropolitan area of Nairobi also includes more than 18 “informal settlements” (urban slum areas), home to about 60% of Nairobi’s population. Since this population of 60% of the total number of residents resides in only 4% of the total area of the city, the population density in these informal settlements is extremely high making the possibility of diseases such as cholera, measles and others, a serious reality and a threat to the already over burdened economy and healthcare system of the country. In addition, road conditions in such areas often lead to mass casualties thereby leading to severe injuries which stretch the personnel capacity in emergency and critical care units to its limits. Psycho-social problems in such poverty stricken communities are rife leading to increased violence, drug and other intoxicated states which may be a serious threat to the health of the entire community. It has been projected that Nairobi's population will reach five million in 2015 (NCC 2007a:4) thus leading to an escalating of emergency conditions which will have to be managed by competent personnel.

1.2.3 The hospital

The study was conducted in a Level I hospital in Nairobi which was established in 1956. The hospital has a capacity of 302 beds and serves as a referral centre for health provision for East and Central African regions. A nursing education institution, the Cecily McDonell School of Nursing is affiliated with the hospital, offering programmes at diploma, higher diploma, degree, and post-basic levels.

The hospital's emergency unit was established in 1986 with a per-day capacity of 120 patients. The building was completed and supplied with modern equipment in 1998. Currently the emergency unit serves 260 patients on average per day. Correspondingly, the medical personnel have increased from 8 doctors and 20 nurses in 1990 to the current 25 doctors and 48 nurses. In 2005, a fully fledged paediatric emergency unit was established which attends to over 70 paediatrics patients per day.

The designated emergency unit is positioned close to the entrance thus increasing easy access to patients and is staffed by certified professionals in Basic Life Support (BLS), Advanced Cardiac Life Support (ACLS), Advanced Trauma Life Support (ATLS) and Paediatric Advanced Life Support (PALS). Once patients are stabilised in the unit, they are transferred to the critical care unit or high dependency unit, depending on acuity level and specific care required. Patients who require further diagnostic procedures for specific heart conditions pass through the cardiac catheterisation laboratory before being transferred to the definitive area for management. These units are involved with the care of critical ill or injured patients who are admitted to the emergency unit together with the school of nursing which is manned by nurses who lecture in the emergency sciences. In this study, the three units are referred to as a department. For efficient management of emergencies the hospital has a disaster preparedness plan, which consists of a helicopter landing field, resuscitation rooms, X-ray facilities, CT scanners, laboratory, pharmacy and operating theatres all of which function 24 hours (Kenya Hospital Association [KHA] 2009:[2]).

1.2.4 Unique roles and challenges of the emergency nurse

Emergency nursing is a specialty field (Trimble 2009:[4]). The fact that *"...the emergency nurse works with patients who are not yet diagnosed, may have new*

problems not previously perceived, are not yet accustomed to the institutional environment, are still struggling to deal with a new reality of illness or injury, who may have an element of uncertainty to their problem, and who may have intoxicants or other behavioural barriers to effective diagnosis or treatment ... ” sets emergency nursing apart from general and other specialties of nursing (Trimble 2009:5).

Kean and Chapman (2008:5) state that the emergency nurse is at the “*frontline*" of the hospital's contact with the community in an environment and patients’ situations which are dynamic. There is possible risk of personal harm to the nurse from the patient, a relative or a disease that is not yet completely controlled. Often the emergency nurse may need to assess and provide guidance for patients who call for "*advice*" or who phone in for assistance for those who have not yet arrived in the emergency unit. Therefore, the emergency nurse must be aware of psychosocial problems and knowledgeable about available community resources to be able to offer guidance for appropriate referral.

Dominguez-Gomez, Rutledge and Heet (2009:203) point out that emergency nurses are often the first to interact with and manage critically ill and injured patients and for this reason play a critical role in ensuring quality emergency care, the foundation of which is the acquisition of appropriate core competencies. Furthermore, it is fundamental that the emergency nurse is sensitive to and skilled in discerning the patient's educational needs to understand and care for the problem and be a successful and supportive teacher under less-than-ideal conditions.

1.3 RESEARCH PROBLEM

In this section problems to the background of the study are explained culminating in the research problem statement in form of research questions.

1.3.1 Global perspective

Globally, emergency nursing is a multidimensional speciality area in nursing with evolving unique needs and challenges related to education and practice. An inherent characteristic in emergency care is the integration of the emergency health care team (MacPhail 2003:2). According to McKay and Thayre (1999:489), issues to be addressed

globally in emergency nursing and the new millennium include helping the emergency nurse to adapt to rapid changes within the emergency nursing care environment, and ensuring that changes in operational work flow and technological as well as physical design enhance the care given to patients and their relatives.

The World Health Organization ([WHO] 2007:[3]) emphasises that nurses play a vital role in providing primary health care (PHC) services, which include emergency services. Nurses are therefore challenged to develop new skills and specialisations to manage patients in the emergency environment to meet communities' expectations and to continue to uphold their professional status. The International Council of Nurses ([ICN] (2003:[2]) points out the need for nurses to adopt and expand their roles in the light of scientific and societal changes to extend health services to their populations. These must also be reflected in their training programme.

The term "*scope of nursing practice*" provides the limits of care that are of concern to nurses. It further defines the legal boundaries of nursing practices and spells out what nurses can be held accountable for in the course of their practice (Nursing Council of Kenya [NCK] 2007a:3).

In practice, unique processes like triage and emergency preparedness set emergency nursing apart from general nursing. Emergency nursing is also governed by unique unwritten rules related to the environment, the severity of the patient, or both (Newberry 2003:5).

Bayley, Maclean, Desy and McMahon (2004:12) point out that the Emergency Nursing Association's (ENA) overall goal is to guarantee that the ENA proactively identifies emerging education, practice and professional issues that pertain to emergency nursing and ensure timely response to such issues.

The AHA (2005a:IV-1) guidelines recommend that all nurses with patient contact should have regular training and assessment in resuscitation (a major component of emergency care) to be able to apply themselves in times of emergency. Moreover, the nurse's competence in emergency care is a critical factor in determining successful patient outcomes from cardiac arrest and accidents since over 60% of emergency patients are initially cared for by the nurse.

O'Neil (2002:723) maintains that the certification and licensing of emergency nurses of the future be linked to the demonstration of continuing competence. Emergency nursing education and practice must become more integrated in keeping with changes in health care delivery and in the society.

Henrik and Kerstin (2009:305) found that basic nursing programmes do not provide sufficient clinical foundations in the specialist field of emergency nursing. Ritchie, Crafter and Little (2002:37) maintain that this insufficiency is mostly due to the fact that nursing as a profession has moved towards specialty areas which require nurse practitioners with specific and specialised knowledge and skills that are not effectively obtained through an educational programme for generalised practice as provided for in the basic programmes. Furthermore, emergency nursing includes complicated nursing interactions and interventions which are executed in close connection to sudden illness or injury, diagnostic and final treatment in all of which basic nurse training programmes are found to be deficient (Ritchie et al 2002:37). These authors emphasise the need for formal post-registration training in the field of emergency nursing to enable the emergency nurse to cope with the challenges in an emergency environment.

1.3.2 The African and Kenyan perspective

In African and other countries outside the USA, Europe and Australia emergency medicine and nursing is in its infancy. However, there has been progression in this speciality area in Africa (Clarke 1998:367). Simultaneously, critically ill and injured patients have become an increasingly significant problem in Africa (Meel 2003:6).

Mureithi (2004:[2]) reports that accidents in Kenya are a grave challenge, with a dramatic increase in the number of fatal injuries especially from road accidents. Otieno, Woodfield, Bird and Hill (2004:[1228]) state that "*in Kenya the road is a dangerous place to be*" especially as there has been a fivefold increase in non-fatal casualties due to road accidents. Over 3 000 people are killed annually on Kenyan roads, with more than 75% of road traffic casualties being economically productive young adults, making road accidents a significant social and health problem in Kenya.

Commanday (2009a:[2]) maintains that the figure of 3 000 road deaths annually is probably a low estimate. She is of the opinion that at least ten times as many people are

injured and twice as many are permanently disabled annually on Kenya's roads. This according to Commanday translates to roughly 39,000 Kenyans being injured or killed annually in road accidents in various parts of the country.

According to Gikonyo (2008:[2]) heart disease in Kenya is on the increase and he calls it an "*emerging epidemic*". The author states that between 1970 and 1980 he witnessed only two cases of heart diseases. Now he manages 2-3 cases per week in his cardiac clinic. He further explains that not only is the disease increasing but the number of deaths attributed to heart disease is escalating considerably.

1.3.3 Emergency nursing in Kenya

In Kenya, the MOH (2008:[8]) oversees, supervises and coordinates all health services. For efficient management, the government appoints statutory bodies to act on its behalf. The NCK is the statutory body responsible for regulating the education and practice of nursing nationally as provided for in Chapter 257 of the Nurses Act of 1985 (Kenya 1985:3). The Nurses Act Chapter 257 of the laws of Kenya makes provision for the training, registration/enrolment and licensing of nurses to regulate their conduct and to ensure their maximum participation in health care.

As elsewhere in the world, emergency units in Kenya are often inundated with patients on a daily basis. This is exacerbated in the case of disasters when the surge of patients significantly affects the emergency personnel's ability to provide organised and effective care. For example, the 2004 Asian Tsunami resulted in more than 700 patients arriving at Patong Hospital in Phuket, Thailand, within two hours. In Nairobi, the US embassy bombing in August 1998 resulted in 300 casualties arriving in the Nairobi Hospital within an hour. Both these events emphasise the need for emergency nurses to strategise and prepare their response to direct emergency patient care at all times. Central to the planning is careful training of personnel to build a strong foundation to serve as the basis for evidence-based emergency care (Pickell 2005:[2]).

Although continuing to evolve, emergency nursing practice is still relatively new in Kenya and has not been listed as a speciality area by the NCK. The scope of practice for the emergency nurse is spelt out together with the general nurses' scope of practice (see chapter 2, section 2.5.4). This is because the NCK acknowledges that there are

emergency nurses trained in other countries and also within Kenya, who are working in various emergency environments in Kenya (NCK 2007a:7). The scope of practice for emergency nurses in Kenya is based on the ENA scope of practice, which is laid out in a broad and non-specific manner (see chapter 2, sections 2.3 and 2.4)

Henrik and Kerstin (2009:309) finding that basic nursing programmes do not provide sufficient clinical foundation for the emergency nurse apply to the Kenyan emergency nursing situation, too. The NCK (2008:26) provides for ten hours of theory and eight weeks of experience during the basic nurse training programme. Henrik and Kerstin (2009:310) maintain that this length of time is not adequate to prepare registered nurses for the challenges that they face in the emergency environment following registration. Currently the NCK has not approved a programme for the training and education of emergency nurses in Kenya. However, some institutions, including the one under study, train nurses, doctors and other medical staff based on the American and European guidelines for emergency training.

The hospital under study has been training emergency nurses since 1996 (see chapter 2, section 2.5.2.3). A total of 152 nurses (some of whom have relocated to other hospitals hence were not included in this study) have been certified to provide emergency care (Cicely McDonnel School of Nursing 2009:22). As stated earlier, these nurses are not registered as emergency nurses by the NCK but possess certificates of completion and do provide emergency care services in various emergency environments.

Emergency nurses' perception of core competencies has not been explored nor was any literature available on delineated core competencies for the emergency nurse as perceived by nurses and doctors who work in the emergency units in this hospital and/or in Kenya as a whole (NCK 2007a:20).

As a lecturer in the emergency nursing field, the researcher was interested in identifying what the nurses and doctors working in emergency units perceive as core competencies for emergency nurses that should be included in an emergency nurse training programme. The doctors' contribution was considered indispensable since emergency care always takes a multidisciplinary approach involving mainly nurses and doctors. Accordingly, the study sought to identify and describe the respondents'

perceptions of the core competencies that should be included in an emergency nurse training programme.

1.3.4 Research questions

In order to explore the problem of identifying the core competencies that should be included in an emergency nurse training programme, the researcher formulated the following research questions:

- What is known about the development of emergency nursing in a level 1 hospital situated in Nairobi, Kenya?
- What are the core competencies that should be included in an emergency nurse training programme based on the views of professional nurses and doctors working in the emergency units of the hospital?
- What recommendations can be made towards the inclusion of core competencies in the programme for the training of emergency nurses in the hospital under study?

1.3.5 Aim

Based on the research questions, the overall aim of the study was to

- explore and describe the respondents' perceptions of core competencies that should be included in an emergency nurse training programme in Nairobi, Kenya

1.3.6 Objectives

In order to achieve the aim, the study wished to

- explore the historical development of emergency nursing in a level 1 hospital in Nairobi, Kenya
- describe the core competencies that should be included in an emergency nurse training programme based on the views of professional nurses and doctors working in the emergency units in the hospital

- make recommendations towards the inclusion of core competencies in the programme for the training of emergency health care nurses in Kenya

1.4 SIGNIFICANCE OF THE STUDY

The study should present a foundation for the development of an evidence- as well as competence-based emergency nurse training programme for use in the selected hospital as well as others in Kenya.

The literature review indicated that the countries studied based their education and practice of emergency nursing on USA programmes (Bursh 2003:88). The present study would present an African perspective of what is known about emergency nursing education and practice in Africa. Furthermore, identifying the core competencies should assist administrators and educators to design strategies to improve the work environment and educational practices related to emergency nursing.

The recommendations of the study should indicate what the emergency nurse “on the ground” does and facilitate the development of guidelines on which the NCK can regulate and control both the training and practice aspects of this speciality. Subsequently, the findings should enhance training programmes not only for the institution under study but also be of benefit to other institutions using the NCK syllabus.

Finally, accountability and responsibility are important in nursing and yet not possible to reinforce without the identification of core competencies. The core competencies identified should be used as a benchmark against which the emergency nurse can be held accountable.

1.5 RESEARCH METHODOLOGY

Research methodology implies the complete plan for the study starting from conceptualising the research problem to the final strategies for data collection (Burns & Grove 2005:211). In addition, research methodology includes the research design and method; where the research design describes the overall research approach that is to be used, and the research method spells out the means by which the approach is to be realised (Cormack 2004:68).

The study was conducted in three phases, namely:

- **Phase 1:** Exploring the development of emergency nursing in a level 1 hospital in Nairobi, Kenya.

- **Phase 2:** Describing the respondents' views of core competencies that should be included in an emergency nurse training programme.

- **Phase 3:** Compiling of findings from the first two phases in order to be able to make recommendations that can enhance emergency nurse training in Kenya.

1.5.1 Research design

A research design is a blueprint for conducting a study, including methods for maximising control over factors that might interfere with the trustworthiness, validity and reliability of the study, and the end result of a series of decisions made by the researcher on how to implement the study (Burns & Grove 2005:223). In addition, Polit and Beck (2004:209) point out that an appropriate research design should provide trustworthy, valid and reliable answers to the research questions while at the same time avoiding or minimising bias.

The researcher selected a qualitative explorative design in phase 1 and a quantitative descriptive design in phase 2 (see chapter 3, sections 3.4.1 and 3.4.3).

1.5.2 Research method

Burns and Grove (2005:26) describe research methods as "*the application of all steps, strategies and procedures for gathering and analysing data in a research investigation in a logical and systematic way*". According to Polit and Beck (2004:731), a research method refers to the techniques used to structure a study and to gather and analyse information in a systematic fashion.

Creswell (2009:17) emphasises that the research method is an integral part of a study approach that spells out the specific data collection and analysis in the study, including the organisation of the data by their degree of pre-determined nature.

Table 1.1 summarises the research methodology applied in this study followed by definitions of the specific methods. Chapter 3 discusses the research methodology in detail.

Table 1.1 Research methods applied in phases 1 and 2 of this study

Design	**Population**	**Sample plan**	**Data**	**Trustworthiness**
Phase 1 - Qualitative - Explorative	**Population** Emergency nurse pioneers **Target population** 8	**Sampling** - Non-probability: - Snowball technique **Sample size** 5	**Data collection** - Personal interviews **Data analysis** Content analysis	**Trustworthiness** Based on Guba's model of trustworthiness
Design	**Population**	**Sample plan**	**Data**	**Validity/Reliability/**
Phase 2 - Quantitative - Descriptive	**Population** - Emergency nurses and doctors working in emergency units **Target population** - 8 pioneer nurses - 130 nurses - 57 doctors ***Total = 195***	**Sampling** ***Non-probability*** - Purposive - Convenience **Sample size** **Total = 156**	**Data collection** - Questionnaire **Data analysis** - Statistics programme for social statisticians *(SPSS version 16.0)*	**Validity** ***Content validity*** - Evaluation and approval by supervisors - Operational definitions ***Content validation*** - Pre-testing **Reliability** - Inclusion of relevant questions only - Giving clear instructions - Availability of the researcher and the research assistants

Phase 3 of the study concludes the study in which all the data was analysed and recommendations were made based on phases 1 and 2.

1.5.2.1 Population

Polit and Beck (2004:289) describe the *population* as "*the entire aggregation of cases in which a researcher is interested; the group of people that meet the sample criteria for inclusion. The members of a population need to be accessible because they are the intention of the investigation*." In this study, the population was accessible as the majority worked in the hospital under study four of the pioneer nurses who worked out of the hospital were in Nairobi and therefore could be reached easily.

In phase 1, the target population comprised eight pioneer nurses. In phase 2, 126 professional nurses (lecturers included) and 53 doctors working in the emergency departments/units in the hospital under study formed the target population.

1.5.2.2 Sample

A sample is "a proportion of the defined population who are selected to participate in the study and reflect all the characteristics of the population. A sample represents the "elements of the population from which the researcher seeks to collect data" (Cormack 2004:23).

The study used a sample of 5 (out of 8 pioneer nurses) in phase 1 and 172 (123 nurses and 49 doctors) out of a sample of 172 in phase 2 (see table 3.3) 158 questionnaires were returned. The figure of 158 returned questionnaires translates to 91%, of the distributed questionnaires which is above the minimum acceptable level of power for a study which is 80% (Burns & Grove 2007:340). The population used in sampling for phase 2 excluded the five pioneer nurses who participated in phase 1 and eleven nurses and four doctors who took part in the pre-test.

1.5.2.3 Sampling

Sampling or sample selection is the process of selecting a representative portion of the population (Polit & Beck 2004:731). In addition, Cormack (2004:291) points out that "*for the results of the study to be inferred to apply to all cases in the population from which*

the sample is drawn, an ideal sample should be representative of the population from which it has been selected".

In the process of sampling two main procedures or techniques can be used, namely probability and non-probability sampling (Polit & Beck 2004:291). The researcher used non-probability sampling or the snowball technique in phase 1 and purposive and convenience (also referred to as non-probability) sampling in phase 2 (see chapter 3).

1.5.2.4 Data collection

LoBiondo-Wood and Haber (2006:562) define data collection as "*information systematically collected in the course of a study*". There are many procedures and instruments available to researchers for data collection, including questionnaires, interviews and observations. According to Burns and Grove (2007:41), the data-collection method should be precise and systematic, and the information gathered should be relevant to the purpose and objectives of the study.

In phase 1, the researcher used personal interviews to collect data. Interviews were selected because "*in qualitative studies the interviewer and the interviewee have the common goal of making sense of the interviewee's experience*" (Burns & Grove 2007:78). In phase 1 the researcher sought to explore the evolution of emergency nursing in the hospital based on the respondents' views. In phase 2 the researcher used a questionnaire (see chapter 3, section 3.4.3.6).

1.5.2.5 Data analysis

Data analysis is a technique used to reduce, organise and give meaning to data (Burns & Grove 2007:402). The researcher analysed the data in phase 1 by content analysis. In phase 2, a statistician assisted the researcher to analyse the data using the Statistical Package for the Social Sciences (SPSS) version 16.0. Phase 3 involved the compilation of recommendations based on the findings of phases 1 and 2.

1.6 VALIDITY AND RELIABILITY

Validity and reliability are the criteria on which the veracity and credibility of research findings are judged and are important in all research although the methods of achieving

both varies, depending on whether the research is qualitative or quantitative (Carter & Porter 2004:29).

The researcher used Guba and Lincoln's model (Krefting 1991:214; Lincoln & Guba 1885:27) to achieve trustworthiness (phase 1) and content validity, supervisor's evaluation and approval, operational definitions and pre-testing to ensure validity and reliability (phase 2) (see table 1.1).

1.7 PRE-TEST

A pre-test is a trial administration of a research instrument to identify possible flaws and to ascertain time requirements (Polit & Beck 2004:728). The questionnaire was pre-tested before being administered to the respondents in the main study (phase 2) (see chapter 3, section 3.4.9). Corrections as suggested by the respondents were taken note of and corrections made to the questionnaire.

1.8 ETHICAL CONSIDERATIONS

Ethics deals with matters of right and wrong, and refers to a social, religious or civil code of behaviour considered correct, especially that of a particular group, profession, or individual (Polit & Beck 2004:141).

The researcher obtained written permission to conduct the study from the Research and Ethics Committee of the University of South Africa and from the hospital under study (see Annexure A). The researcher presented her proposal together with the following attachments: the covering letter for the participants, a sample of the questionnaire and the consent form for participation (see Annexure B).

The researcher explained the purpose and significance of the study to the respondents and that participation was voluntary, and obtained their informed consent before the study commenced. They were informed that they were not required to give their names or any identification on the questionnaire. In this way the respoindents' anonymity was preserved. Confidentiality was also maintained after data collection by ensuring that the respondents returned the completed questionnaires in an envelope, which was placed at an agreed point and was collected by the research assistants (see chapter 3, section 3.6).

1.9 LIMITATIONS OF THE STUDY

Being context-bound there was a possibility of unforeseen events occurring during data collection that might influence participants' responses.

The study was confined to a selected private hospital in Kenya, therefore the findings cannot be generalised to other hospitals in the country.

1.10 DEFINITIONS OF KEY CONCEPTS

For the purposes of this study, the following key terms were used as defined below.

- **Accident or trauma and emergency**

The Concise Oxford English Dictionary (2006:7) defines *accident* as "an event that is without apparent cause, or is an unexpected, unfortunate and unintentional event causing physical harm or damage".

Mureithi (2004:[1]) describes an *emergency* as "a sudden and unexpected turn of events calling for immediate action due to the threat it poses to life and/or property". In this study, *emergency* referred to a life-threatening situation originating from accident/trauma or a medical emergency.

Emergency care comprises the management of all aspects of initial critical care whether applied to trauma-originating problems or those of medical or surgical origin or in the treatment of other specialities such as mental health warranting immediate medical attention.

- **Emergency unit**

Murphy (1998:23) defines an *emergency unit* as a section of an institution that is staffed and equipped to provide rapid and varied emergency care.

In this study an emergency unit was a department/unit situated in the selected hospital designated for the management of emergency cases, including adults and children.

- **Emergency nurse/nursing**

Mosby's Medical and Allied Health Dictionary (2004:418) defines emergency nursing as "care provided by a nurse to prevent imminent severe damage or death or to avert serious injury of a patient".

Sheehy (2007:560) describes *emergency nursing* as care provided to individuals of all ages with perceived or actual physical or emotional alterations of health that are undiagnosed or that require further interventions.

In this study, an *emergency nurse* is regarded as a general nurse first and foremost, and in addition:

- Possess a certificate in emergency nursing from the hospital under study or from an approved institution in or outside Kenya.
- Has successfully completed a course in Basic Life Support (BLS) and one or more of the following emergency training areas: Advanced Cardiac Life Support (ACLS), Advanced Trauma Life Support (ATLS) and Paediatric Advanced Life Support (PALS).
- Is currently deployed in any of the following areas in the hospital under study, namely the critical care unit, accident and emergency unit, high dependency unit, cardiac catheterisation laboratory, and as a lecturer or instructor in the field of emergency nursing.

- **Core competencies**

The Concise Oxford English Dictionary (2006:317) defines *core* as the "central or most important part of anything" and *competent* as "adequately qualified or capable, effective and legally qualified" and *competency* as "the ability or an area in which a person is proficient". Hoyt and Proehl (2009:91) describe *competence* as "essential behaviours and skills that an individual should possess and demonstrate to practise in a specific discipline or speciality area".

Heyns (2003:[11]) refers to *core competency* in emergency nursing as “the minimum knowledge, skills, values and attitudes necessary to effectively nurse the patient in a life-threatening situation in the emergency environment”. Furthermore, emergency core competencies refer to the critical actions that need to be implemented immediately for a positive outcome for the critically ill or injured patient.

In this study, core competencies referred to the minimum knowledge, skills, values and attitudes that an emergency nurse working in the emergency environment in the selected hospital should possess.

- **Life-threatening situation**

The Concise Oxford English Dictionary (2006:823) defines *life* as “the period during which a living thing, human, animal or plant continues to exist, function or be valid”.

Threatening is an adjective from the word *threat* meaning a “person or thing likely to cause damage or danger” (*The Concise Oxford English Dictionary* 2006:1501).

Situation refers to a “set of circumstances in which one finds oneself” (*The Concise Oxford English Dictionary* 2006:1349).

A *life-threatening situation* refers to “a potentially fatal set of circumstances to an individual” (*The Concise Oxford English Dictionary* 2006:823).

In this study, a life-threatening situation referred to a critically ill/injured patient whose life is in danger presenting in the emergency unit of the selected hospital.

- **Critically ill or injured patient**

According to Nicol and Steyn (2004:15), a critically ill or injured patient refers to a walking patient or one on a stretcher who, due to his or her illness or injury, exhibits altered vital signs, which include a decreased level of consciousness or signs of respiratory, cardiovascular or neurological compromise. This definition will be used to define a critically ill or injured patient in this study.

For the purpose of this study, a critically ill or injured patient refers to any patient who has experienced a life-threatening condition and who reports at a Level 1 hospital emergency unit for emergency care.

- **Level I hospital**

It includes a facility that provides in-patient services as well as specialist and sub-specialist care within the public or private sector. The hospital will have sub-speciality representation in at least 50% of Group 1 specialities which include 24 hour outpatient and in-patient care, fully equipped operating theatres, 24-hour emergency unit, pharmacy radiology and laboratory services (MOH 2008:[5]). This definition was adopted in this study.

1.11 LAYOUT OF THE STUDY

The study consists of five chapters. Figure 1.3 presents the layout.

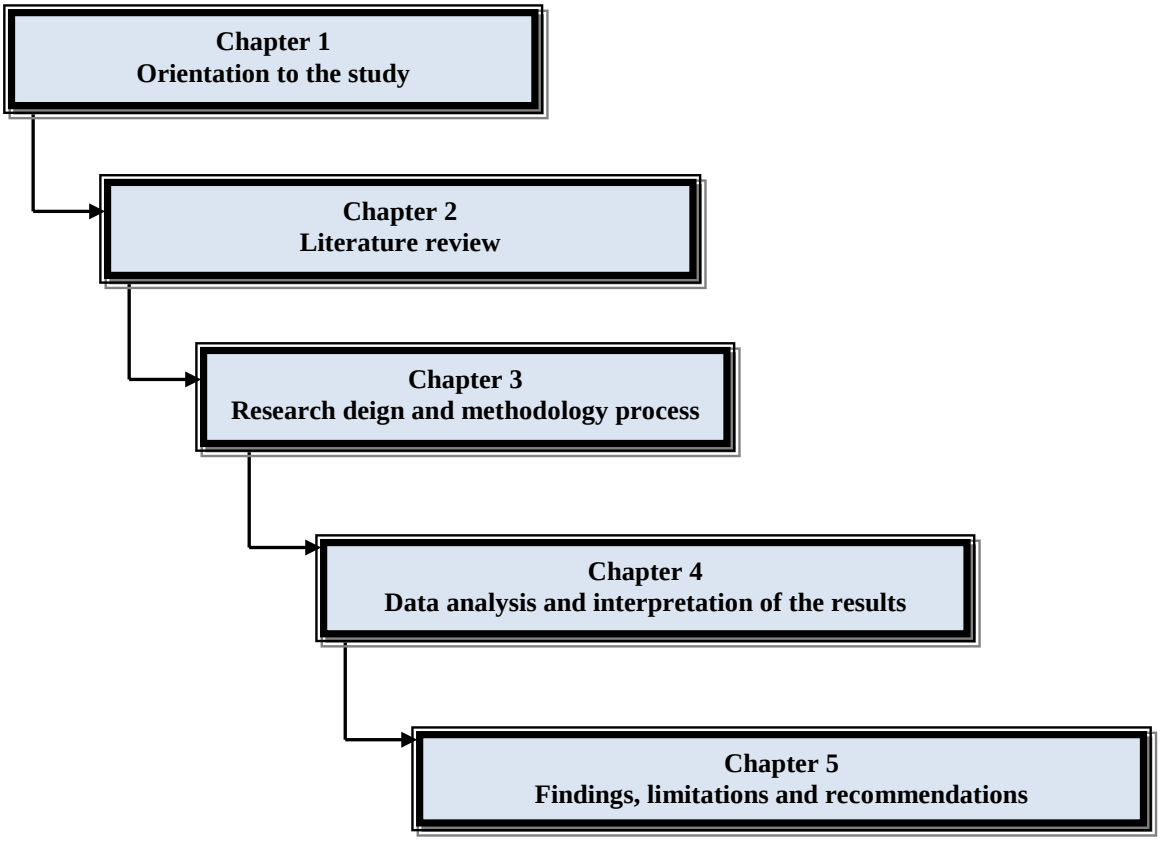

Figure 1.3 Layout of the study

1.12 CONCLUSION

This chapter briefly discussed the background to, purpose and significance of the study. The research design and methodology, including the population, sample, data collection and analysis, and ethical considerations, were described and key terms defined.

Chapter 2 focuses on the literature review conducted for the study.

CHAPTER 2

Literature review

2.1 INTRODUCTION

A literature review is “an organised critique of the important scholarly studies that supports research and a key step in the research process” (LoBiondo-Wood & Haber 2006:79). In addition, Burns and Grove (2007:135) and Cormack (2004:22-23) point out that a review of literature is a summary of both theoretical and empirical sources to create a picture of what is known and what is not known about a topic of study. To understand and appreciate the core competencies required by the emergency nurse, the researcher undertook a literature review.

Concepts related to emergency nursing were reviewed in the USA, the Republic of South Africa (RSA) and Kenya. The researcher focused on literature and studies pertaining to

- the importance of training emergency nurses
- historical background of emergency nursing, including education in the three selected countries
- scope of practice for emergency nurses
- emergency nursing environment
- core competencies in emergency nursing

2.2 EMERGENCY NURSING AS A SPECIALITY AREA

Being a general professional nurse means caring for the overall general health and comfort of patients, as well as caring for and nurturing other individuals; meeting their physical needs for safety and good health, and providing comfort and ease for their emotional needs at family and community levels (Korzier & Erb 2008:360).

Regarding the scope of emergency nursing practice, most nursing groups are identified on one of the following:

- Specific body systems
- Specific disease process/problem
- Specific age groups
- Specific populations

Emergency nursing crosses all these specifications. Unique to emergency nursing practice is the application of nursing processes to all ages requiring stabilization through resuscitation for a variety of illnesses and injuries. Emergency nursing comprises all aspects of initial critical care whether applied to trauma-originating problems or those of medical or surgical origin or in the treatment of other specialities such as mental health.

Suliman and Gurkan (2009:413) state that an emergency nurse is a part of the emergency response team that works together to not only provide individual care, but also to provide quality, fast and accurate care to patients in a crisis situation and within a fast-paced environment. Emergency response personnel are a cohesive team committed to a high level of expertise in all disciplines of emergency care and the emergency nurse contributes to the process of this integrated service immeasurably. It is essential that each member of the team understands his/her role(s) as well as how the roles relate to each other within the team, hence the need for all-inclusive training (Bracken 2003:77).

Bracken (2003:75) emphasises that because patients who come to the emergency unit present with different levels of severity of sickness, an emergency nurse is responsible for sorting each situation in relevance to urgency. Triage, which means to rapidly identify/sort patients with urgent, life-threatening conditions in order to prioritise care needs for each patient, regulate patient flow and determine the most appropriate area for treatment, is used. Triage is one of the responsibilities of the emergency nurse that sets emergency nursing apart from general nursing and an emergency nurse must be familiar with triage models.

Lucia and Rodgers (2006:[6]) point out that treatment in the emergency unit can take minutes to hours. Injuries range from the critically ill to minor cuts and bruises. Whether it is rape or assault, coronary heart disease or lacerations, the emergency nurse never knows what she/he is going to have to be prepared for in the course of duty. Vehicle and other accidents causing physical injuries, gun shot wounds, dog bites or ear

infections, emergency nurses find themselves working with all types of ailments and with people from varied backgrounds. Going to work as an emergency nurse is always an adventure!

In underscoring the importance of comprehensive training of the emergency nurse to be able to respond to unpredictable life-threatening situations, Newcombe and Heather (2009:[3]) stress that the focus of training is on broad clinical knowledge, excellent skills, flexible and adaptable approach, and strong interpersonal and teaching ability. Furthermore, emergency nurses must be familiar with their facilities' policies, procedures and protocols. They must be able to assure open communication not only with patients and their families, but also with other emergency medical professionals in order to provide and ensure proper and accurate therapeutic interventions (Newcombe & Heather 2009:3).

An emergency nurse must have a high degree of knowledge and skills, with diagnostic and decision-making power to effectuate urgently needed activities in autonomous fashion or in the closely-collaborative team approach with other health professionals (Trimble 2009:[3]). To cope in a fast-paced environment, emergency nurses do not prioritise injuries only but also their time as they institute the interventions. Additionally, apart from their roles as mentors and instructors, emergency nurses are required to comply with their facilities' safety regulations on infection control and hazardous material that protect them, the patients, other staff and the community. It is therefore imperative that they have a sound continuous training to be able to take up these responsibilities that promote the speciality as well as the profession and keep them up to date on current advanced diagnostics, technologies, medical equipment and safety techniques (Newcombe & Heather 2009:[4]).

As health care professionals, emergency nurses will always respect the privacy of individual patients, but they have the responsibility and authority of reporting any suspected abuse to the appropriate agencies, such as child abuse or neglect. This necessitates a diverse broad educational background for the emergency nurse (Kean & Chapman 2008:10).

2.2.1 Components of emergency nursing training

Good Advanced Life Support (ALS) starts with good basic skills (AHA 2006b:5). The AHA, ENA, European Resuscitation Council (ERC), Resuscitation Council of Southern Africa (RCSA) and accredited institutions in South Africa, and the Resuscitation Council of Kenya (RCK) are among the professional bodies that provide guidelines on aspects of emergency care that progress from simple to complex interventions or tasks during the management of emergency situations in consensus with the International Liaison Committee on Resuscitation (ILCOR). These guidelines are used to offer BLS, ACLS, ATLS, and PALS (AHA 2006a:5). It is beyond the scope of this study to include the entire content of what the emergency nurse takes during the training, the key concepts are discussed briefly in the section that follows

2.2.1.1 Principles of cardiac arrest patient management

The most recent guidelines for emergency care for healthcare providers focus on high-quality Cardio Pulmonary Resuscitation (CPR) for cardiac-arrested patients. An organized step-by-step approach is offered, along with mnemonics and other memory aids. These steps can be taken while good CPR is being performed, and are divided into Primary Survey and Secondary Survey with each having quadrants, steps or phases (AHA 2005a:IV-5).

2.2.1.1.1 Primary survey

Primary survey encompasses the quadrants/steps, easily remembered by the letters ABCD:

- *Quadrant 1*

Airway. Is it open? If not, open it by use of head-tilt, chin-lift or jaw-thrust manoeuvre if injury is suspected. Ensure that the airway is patent.

Breathing. Is the patient breathing adequately? Look for rise and fall of the chest, listen to breath sounds and feel for warmth. If not, give rescue breaths using Bag Mask Ventilation (BMV).

Circulation. Does the patient have a definite pulse? If not, start compressions. “Push fast, push hard” aiming at 100 chest compressions per minute.

Defibrillation. Attach an AED or manual defibrillator as soon as it is available and deliver a shock if indicated.

2.2.1.1.2 Secondary survey

- *Quadrant 2*

The second quadrant expands on the ABCD's and is used to perform a secondary survey.

Airway. Remove obstructions and consider the placement of an advanced airway nasopharyngeal or oral pharyngeal to maintain patency.

Breathing. Support ventilation as needed and give oxygen.

Circulation. Establish intravenous (IV) access. Apply a cardiac monitor and determine the rhythm(s).

Differential diagnosis. Consider causes for the patient's condition and treat as indicated. Consider the H's: hypoxia, hypovolemia, hypoglycemia, hypothermia, hypo- or hyperkalemia and hydrogen ions (acidosis). Consider the T's: thrombus, either cardiac or pulmonary, toxins, tamponade, tension pneumothorax, or trauma.

Quadrants 3, 4 and 5

If the patient has converted to a perfusing rhythm, or if care involves a cardiac patient who has not yet arrested, go on to the last three quadrads.

- *Quadrant 3*

In this phase the baseline care given for every patient with cardiovascular compromise is considered, namely:

- Oxygen, cardiac monitor, and IV fluids (as needed).

➢ *Quadrant 4*

Comprises assessment of vital signs:

- Blood pressure, heart rate, respirations and temperature.

➢ *Quadrant 5*

This step involves a consideration of the elements of adequate systemic perfusion by ensuring the following:

- Evaluate the heart for adequate volume by monitoring the cardiac output.
- Make sure the heart can pump adequately and support it if there are signs of compromise.
- Evaluate and maintain an appropriate heart rate (AHA 2005b:IV-51).

2.2.1.2 Principles of trauma patient management

The mnemonic ABCDE provides a structured approach to caring for the trauma patient (Cole & McGinley 2006:455).

2.2.1.2.1 Primary survey in trauma

➢ **A-**Airway with cervical spine control

Assess the airway while immobilising the cervical spine, the 3 Ps strategy is adopted, ensure or *provide, patent* and *protect* the airway. Assume cervical spine injury in patients who have suffered blunt trauma or injuries above the clavicle until ruled out (American College of Surgeons 2008a:97).

- **B-**Breathing and ventilation

The American college of Surgeons describe the assessment of breathing in detail in the manual used during the education of the ATLS course (American College of Surgeons 2005:16).

Look, listen and feel to assess the respiratory rate and efficiency. Provide oxygen, using an appropriate device.

- **C-**Circulation with haemorrhage control

Priority is given to arresting any external bleeds. Assess for circulatory compromise and establish an intravenous access. Obtain blood samples before commencing fluid therapy.

- **D-**Disability and neurological assessment

Assess level of consciousness using the Glasgow Coma Scale. Make a neurological consultation with the doctor as necessary.

- **E-**Exposure and environmental control

Expose the patient to assess for any injuries or conditions. The patient must be kept warm by either covering or warming the environment or both; more often than not the patient requires both (Academy of advanced life support 2008:[2]) In addition, history is obtained using the mnemonic AMPLE.

- **A-**Allergies
- **M-**Medications
- **P-**Past medical history or possibility of a pregnancy
- **L-**Last meal eaten
- **E-**Events/environment related to injury

2.2.1.2.2 Secondary survey in trauma

This involves a detailed head-to-toe examination to identify any other injuries that may need attention or call for further investigation.

According to Campbell and Chapter (2008:107), the emergency care provider should expose the patient completely and look for any signs and symptoms of injuries.

The patient should be monitored carefully throughout the duration of secondary survey for change in condition.

It is important to contrast the injuries observed against the mechanism of injury as given in the history under “E” (Department of Health,Uk 2008:[10]).

2.2.1.2.3 Definitive management of the trauma patient.

The definitive care location may be arrived at via any of the four routes:

- Diagnostic imaging
- Operating theatre
- High dependence unit
- Critical care unit.

If a patient has to be transferred, clear communication and coordination to ensure appropriate and timely transfer of the patient and the delivery of expert care is important. Failure to coordinate and communicate effectively fragments trauma management and delays patient care, resulting in poor outcomes (Cole & McGinley 2006:455; Department of Health, UK 2008:[62]).

2.2.2 Emergency nurse examination and certification

Good emergency nurses continue their education and training throughout their career by renewal of skills and updating of knowledge. Regulatory bodies conduct training, administer examinations and certify emergency nurses based on the principles described in sections 2.2.1.1 and 2.2.1.2. Emergency nurse courses range from days to

years in duration depending on levels of certification, which can be at certificate, diploma, masters or doctorate level.

In the USA, the ENA is the main professional organisation of the speciality of emergency nursing. The Certified Emergency Nurse (CEN) is one of the distinctions earned by examination to show possession of a body of knowledge commensurate with competent practice. The Board of Certification in Emergency Nursing (BCEN) awards the CEN to qualifying emergency nurses (Lucia & Rodgers 2006:[6]).

In the RSA, training and education for emergency nurses is largely conducted by the South African Nursing Council (SANC) and accredited nurse training institutions, such as nursing colleges and universities, which provide additional training at post-basic level (Heyns 2009**:**[79]).

The Resuscitation Council of Southern Africa (RCSA), a voluntary organisation, establishes and standardises emergency care techniques and coordinates training in emergency care as well (RCSA 2006:[1]).

In Kenya, the RCK regulates training and certification in conjunction with the Nairobi, AgaKhan and Kenyatta National Hospitals. The principles described above are applied according to the European and American guidelines. However, the certificates awarded by the hospitals are only recognised by the hospitals that award them (RCK 2004:[5]).The NCK does not regulate or administer examinations or certify nurses in this specialty area.

2.3 EMERGENCY NURSING IN THE USA

Emergency nursing originated in the USA, where it has continued to be in the forefront in its development, influencing both the education and practice of emergency nursing worldwide (Moy 1995:3). Emergency nursing in the USA as a speciality evolved in the context of other medical care services, especially Emergency Medical Services (EMS).

The United States armed forces are attributed with having the first ambulance service in 1865 (Moy 1995:3). This service was implemented to reduce the mortality rates on the battlefield by getting injured soldiers to places where they could be attended (Heyns

2003:[61]). The progress in emergency care continued alongside military activities until 1966 when the National Highway Act was implemented in the USA with the Department of Transport establishing EMS standards (Drake 1991:19).The EMS was established as a branch of medical services dedicated to providing out-of-hospital acute medical care and transport to definitive care destinations, a role it continues to play to date (Tunik & Foltin 2008:12).

According to Moy (1995:4), this development followed the National Research Council Committee's publication on Shock and Trauma's, *Accidental death and disability: the neglected disease of modern society*, which focused attention on the increasing accident mortality rates and provided the foundation for a national effort directed at improving emergency care programmes, culminating in the development of standards for training of civilian ambulance attendants.

In November 1973, the USA passed the Emergency Medical Services System Act with the main objective of improving emergency care throughout the country. In the same year, to ensure continued support, federal funding was made available for the establishment and development of the EMS systems. Amongst the mandatory components set as necessary for the development of the EMS system was training of personnel (Robinson 1995:49).

2.3.1 Emergency nursing and emergency nursing education in the USA

In most parts of the USA pre-hospital and hospital care began with the use of doctors who accompanied patients in ambulances to hospitals (Moy 1995:8). The rapid growth of EMS made it difficult, however, for staffing to remain exclusively at the doctor level. As a result of awareness for specialist care of injured or critically ill patients, individuals with varying educational backgrounds were included in the EMS system, such as Emergency Medical Technicians (EMTs) at different levels and nurses (Robinson 1995:49).

The role of the nurse invariably became second to that of the doctor, particularly since there were more nurses and they were therefore readily available to be dispatched to the emergency patient (Kirchner 1991:50). On a global scale, nurses are the largest service providers in health service organisation (WHO 2008:[3]).

According to the Emergency Nurses Interest Group of Alberta (ENIG 2004:[4]) respectively, encouraged emergency nurses to seek more education and skills in emergency care. Innovations such as closed chest massage in 1959, the addition in 1960 of mouth-to-mouth resuscitation, and the 1962 initiation of defibrillator use were other factors in the integration of specialists into emergency care.

In 1970, the Emergency Unit Nurses Organisation was launched in Buffalo, New York, by Anita Dorr, inventor of the “crash cart”. Meanwhile, Judith Kelleher formed the Emergency Unit Association in California. In 1970T the two groups joined to become the Emergency Department Nurses Association (EDNA), renamed the Emergency Nurses Association (ENA) in 1985, to recognise the practice of emergency nursing as role-specific rather than site-specific. The ENA has continued to be the primary organisation for emergency nurses with over 23,000 members in the USA (ENA 2004:[5]; Alpi 2006:107).

Today, the establishment of ENA is generally considered the beginning of emergency nursing as a speciality area worldwide (McKay & Thayre 1999:489).

In 1978 and 1982 interest in the role of the emergency nurse was renewed when resolutions were brought to the ENA General Assembly that outlined strong support for registered nurses to staff the mobile advanced life support units (Robinson 1995:55). In 1988, Resolution 10 of the ENA denounced regulation of the pre-hospital registered nurse by means of the EMS system. In the same year, the board of Professional Licensure took over this mandate. The ENA was then entrusted with the development of a standard curriculum to provide emergency nurses with the skills necessary to deliver care in the pre-hospital setting (ENA 2000:4).

In 1992 the ENA published the pre-hospital core curriculum to establish core knowledge and skills pertinent to pre-hospital nursing practice (MacPhail 2003:4). The ENA’s Trauma Nursing Core Course and Emergency Paediatric Course are taught to over 50,000 nurses a year in the USA as well as abroad in different languages. In addition, the ENA provides courses in advanced trauma nursing, triage, and orientation programmes of emergency care.

In consultation with American Association of Colleges of Nursing (AACN) and the National Organisation of Nurses Practitioner Faculties (NONPF), the ENA approved the essentials of doctoral education for advanced nursing practice in emergency care. One of the major intents thereof was to describe the ENA's initiatives and support related to speciality-focused competencies (AACN 2006:21; NONPF 2006:[7]). The ENA is also widely involved in a variety of publications, community outreach programmes, government-related activities, research, continuing education programmes and certification (ENA 2004:[6]).

2.3.2 Scope of practice of emergency nursing in the USA

Emergency nursing "cuts across" all ages and body systems hence the need for collaboration and a teamwork approach (MacPhail 2003:2). The population of patients seeking emergency care is unique, covering the broad spectrum of the human life span and the entire spectrum of health from wellness through death. MacPhail (2003:3) maintains that in no other area in health care are teamwork and mutual respect more important than in emergency care.

Over the years, the emergency nurse in the USA has continued to serve increasingly demanding customers. Consequently, the emergency nurse is involved in decision-making and is viewed as a primary member of the emergency management team in the emergency care environment (Hummer 2002:[205])

In the USA, the scope of emergency nursing practice is defined through role functions by ENA Newberry 2003:1) The scope of practice is further dictated by the practice arena in terms of the unpredictability of circumstances in which emergency nurses may find themselves, the range of emergency environments as well as the severity of the patient. These factors make it difficult to define a limiting scope of emergency nursing practice. For instance, in a level 1 centre an emergency nurse may not have to deal with complex cases because of the availability of doctors. In out-of-hospital cases or in a level III health facility, however, the majority of which experience a scarcity of doctors, the nurse performs complex procedures, which would otherwise be attended to by the doctor (Heyns 2003:[76]).

Emergency nursing is multidimensional covering responsibilities, functions, roles and skills that evolve from a specific body of knowledge. The Emergency Nursing Scope of Practice (ENA 1999a:[98]) includes:

- Assessment, analysis nursing diagnosis, planning, implementation of interventions, outcome identification and evaluation of human responses of individuals in all age groups whose care is made more difficult by the limited access to past medical history and the episodic nature of their health care.
- Triage and prioritisation.
- Emergency operations preparedness.
- Stabilization and resuscitation.
- Crisis intervention for unique patient populations, such as sexual assault survivors.
- Provision of care in uncontrolled or unpredictable environments.
- Consistency as much as possible across the continuum of care.

Crouch, Buckley and Fenton (2003:15) point out that just as the profession of nursing is diverse, so is the speciality of emergency nursing. Its scope is non-specific thereby allowing for various interpretations by different states and institutions. The practice arena, among other things, makes it impossible to formulate a more specific scope of practice. This creates dilemmas for emergency nurses who often find themselves at crossroads with other members of the team especially the doctor (Buppert 2008:11).

2.4 EMERGENCY NURSING IN THE RSA

The RSA is the only country in Africa with an organised statutory system of pre-hospital care and the national healthcare plan aims to ensure availability of at least basic life support to the population within 20 minutes from their homes (Goosen, Bowley, Degiannis & Plani 2003:704). In the broader African context, it is significant for Kenya to know what there is in the emergency care arena in another African country.

In the RSA emergency care and medicine is recognised as a speciality; the Emergency Society of South Africa has been formed, and a college of emergency medicine established to co-ordinate examinations leading to specialised registration which is in line with international standards (MacFarlane, Van Loggerenberg & Kloek 2005:145).

The nursing profession in South Africa was the first of the professions to be established on the African continent (Searle 2004:9). The SANC became the first in the world to obtain the status of a statutory body with recognition in nursing education, training and certification. In the nursing arena, then, the RSA remains the leader in Africa.

On the nursing front, then, it is of significance to Kenya and other African countries to study the development of emergency nursing in the RSA. Sharing common problems that affect developing countries and acquiring knowledge of the methods used by the RSA to overcome the hurdles in the shaping of emergency nursing could assist their Kenyan counterparts in hastening emergency nursing development.

2.4.1 History of emergency services in the RSA

In the RSA, pre-hospital care suffered from racial inequalities in the past, where ambulances and fire stations were located in “white” city town centres while most injuries occurred in peripheral “black” townships. Following democracy in 1994, this is continuously being addressed to be all inclusive impartially (Goosen et al 2003:706). However, the ideal equitability is yet to be achieved, for like most African democracies arising from socio-political turmoil there is unbalanced distribution of services partly as a result of the historical inequalities. For example, the EMS communication is sharply divided along socio-economic levels in the RSA (MacFarlane et al 2005:145).

2.4.2 Nursing and nursing education in the RSA

The RSA is attributed with the origins of formal nursing practice and training in the African continent that can be traced back to the 19th century (Searle 2004:11). Among the factors that influenced the development of nursing practice in the RSA were the settlement of Jan Van Riebeeck at the Cape in 1652; the colonisation work of the missionaries; the Anglo-Boer War of 1899-1902, and World Wars I and II (1914-1918 and 1939-1945), respectively. The Anglo-Boer War (1899-1902) had a tremendous impact on nurses and this could be seen as the start of emergency nursing in the RSA although they were not recognised as such (Heyns 2003:[67]). Sister Henrietta Stockdale was the pioneer of nurse training in South Africa in 1883, and the principles on which she founded the nursing profession still continue to date. Post-basic nursing courses were introduced in 1922; the first post-registration courses at university level in

1935 followed by baccalaureate degrees in 1955 and honours, master's and doctoral degrees in 1967 (Searle 2004:11).

It should be noted that in 1968 Kenya started the Diploma in Advanced Nursing at the Nairobi University as the highest level of nursing education then (Plager 2008:58).

The South African Trained Nurses Association, a professional nurses association, was founded in October 1914. This was replaced by a statutory nursing association, the South African Nursing Association in November 1944. The South African Nurses Association contributed immeasurably to the development of practice standards and to the norms and values of the nursing profession. Later, South African Nurses Association was disbanded and the Democratic Nursing Organisation of South Africa was formed as a result of political change in the country and is the body currently mandated to guide the destiny of nursing in the RSA (MacFarlane et al 2005:145).

2.4.3 Emergency nursing and emergency nursing education in the RSA

There was a serious need for emergency nurse training to help registered nurses working in the periphery to acquire knowledge and skills that would enable them to stabilise patients before being transferred to tertiary hospitals for definitive management (Heyns 2003:[69]). This was intended to ultimately reduce the morbidity and mortality rates of critically injured or sick patients.

The first emergency nursing course, which incorporated both medical and accident emergencies, was started in 1978/79 by Rosa Sneggons in the Groote Schuur Hospital in the Cape. Sneggons started another course in the Johannesburg General Hospital in 1986 that targeted medical emergencies mainly. This emergency training was not listed by the SANC (Heyns 2003:[69]). The first emergency programme to be listed by the SANC was started by Emmarentia Jansen van Rensburg in 1982, at the HF Verwoerd Hospital (now the Steve Biko Academic Hospital). This was followed by a one-year programme at the Rand Afrikaans University in Johannesburg (now the University of Johannesburg) in 1996, which covered both accidents and medical emergencies.

In 1996, Kenya had its first form of formal emergency training (Commanday 2009b).

In 2000, emergency nursing was presented at the University of South Africa (UNISA) as a distance education masters clinical speciality for students. In 2004, it was changed to an Honours degree programme for nurses who were unable to attend residential universities or for students who had no access to such training facilities in Africa.

Since then the RSA has continued to have emergency training programmes for nurses in tertiary institutions and the speciality is registered as a post-basic clinical speciality by the SANC (Hattingh 2009)**.**

Although ahead of Kenya in the aspect of emergency nursing development, emergency nursing education and training in South Africa is still an emerging field with few institutions offering training. Consequently, there are still few trained emergency nurses. South Africa has no emergency nursing body yet to define a scope of emergency nursing practice similar to the ENA of the USA. For this reason, there is no separate scope of practice for emergency nurses but upon registration, the SANC provides a license to practice for emergency nurses (Brysiewicz & Bruce 2008:127).

2.4.4 Scope of practice of emergency nursing in the RSA

The scope of practice in this context is an authorisation of what the nurse may do, and delineates the one-to-one relationship between the nurse and the patient in a specific circumstance. In the RSA, the scope of nursing and midwifery practice is defined by regulation framed under a section of the Nursing Act. This regulation authorises the Minister of Health to define the scope of practice of registered and enrolled nurses, taking into consideration the conditions and environments in which nurses practice (Searle 2004:118).

The professional and ethical responsibilities of the registered nurse in the RSA are defined by the scope of practice set out in Regulation R.2598 (Regulation R.2598 of 1984) and Regulation R.387 (Regulation R.387 of 1985). These regulations empower the emergency nurse to practise in any health care setting and set out the parameters of such practice as competence, authority, responsibility, accountability, independent decision-making, collaboration, facilitation, advocacy, nursing diagnosis, planning of nursing interventions and recording of patient details.

This scope of practice is broad and non-specific. Searle (2004:117) maintains that this leaves space for new developments to be accommodated and allows for professional development. The ENA (1999b:[2]) describes the boundaries of emergency nursing as both internal and external with sufficient flexibility and resilience to change in response to societal needs and demands. The RSA, therefore, shares the same non-specific scope of practice in emergency nursing as the USA.

2.5 DEVELOPMENT OF EMERGENCY NURSING IN KENYA

Emergency care as a whole and emergency nursing in particular in Kenya are discussed in this section.

2.5.1 History of medical services in Kenya

Before the advent of the Western missionaries, Kenyans attributed diseases to (Wilson 1952:19):

- A curse. The patient was treated with the blood of an animal or special rituals conducted by the witchdoctors.
- Trouble originating from enemies. The remedy would be the reversal of the enemy's witchcraft by a witchdoctor who then gave a protective charm to ward off any magical evil that the enemy may have planned and cast on the sufferers.
- Ritual uncleanliness. A breach of any of the cleanliness rituals constituted uncleanliness that required purification. For example, a person who touched a dead body was considered unclean.

2.5.1.1 Medical treatment and nursing care

Medical diseases were treated by herbal doctors. Nursing care was carried out by female family members. Many people died from lack of proper nutrition rather than the disease itself. This was because there was inadequate knowledge of the part nutrition plays in the cure of diseases (Ndirangu 1972a:44).

2.5.1.2 Surgical treatment and nursing care

In Kenya, conditions in the surgical category were managed by “specialised elders” who endeavoured to treat such conditions as burns, cuts and fractures and also performed circumcisions. Almost all wounds became septic and produced pus, and this was considered normal. Fractures were immobilised with sticks and secured with string and occasionally amputations were carried out successfully (Ndirangu 1972a:46).

2.5.1.3 Midwifery

Pregnant mothers were cared for by old women who possessed knowledge of the problems affecting pregnancy and motherhood (Chepkwony & Omondi 1974:28). The elderly birth attendants were so specialised that they were capable of changing the positions of a foetus in the womb from transverse to longitudinal. However, asepsis was lacking and complications ranging from severe haemorrhaging to severe infections such as tetanus and septicaemia were common.

2.5.1.4 Child care

Most tribes in Kenya had rules governing the care of the baby and the mother. Situations were created to allow the mother to relax and eat a good nutritious diet that helped her to regain her strength. Such situations included the mother staying with her mother-in-law, who assumed full responsibility for the baby for at least two months (Mati 1972:32).

2.5.1.5 Family planning

Many tribes in Kenya prohibited sex with a lactating mother. This encouraged polygamy but avoided a mother having babies too close together. Other rules controlled conception too soon. In addition, the use of some herbs prevented pregnancies (Mati 1972:33).

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2.5.2 Missionary involvement in health services in Kenya

Missionaries came to Kenya with the main aim of evangelisation (Elliot 1966:208). They could not embark on this mission, however, as many people were sick and suffering. The need to attend to the physical needs, which included treatment and nutrition, took centre stage instead. The missionaries worked alone assisted by their wives some of whom were nurses or had some knowledge on personal hygiene and the prevention of minor ailments.

The Africans were not willing to be trained as nurses as most of the “Whiteman’s” (*muzungu*) teachings contravened their traditional practices and beliefs. Moreover, most parents were unwilling to release their daughters for training for fear of the daughters missing marriage opportunities.

The first African to be trained in Kenya as a “dresser”, the term that later translated to nurse, was Mr Samson Njoroge. He was recruited as a trainee in the Hunter Memorial Hospital (now Kikuyu Hospital) in 1908. He was regarded as an outcast in his community since he had touched dead bodies but nonetheless continued and completed the training as a dresser in 1911 (Ndirangu1976:9).

Ndirangu (1976:11) points out that contrary to what was to follow, the first people to be trained as dressers (nurses) were mainly men. They were trained for three years based on the British form of nurse training. Missionaries’ wives who had trained as nurses in Britain were the trainers.

By 1940, the missionaries had established eight hospitals and three dispensaries in various parts in the country. All these were staffed by dressers and the hospitals continued to train more dressers. When females started to train at the same level as dressers, they were called nursing orderlies and their role was to assist the male dressers (Carson 1951:141).

Both World Wars brought the demand for more dressers and orderlies. Missionaries from different denominations formed the Kenya Missionary Council (KMC), which undertook to establish facilities for medical, general and theological education. The Colonial Nursing Association was then formed in 1918 to be responsible for the

recruitment of nursing sisters who were to come and help in training the African nurses (Haran 1935:3). The colonial government and missionaries came together to pass an Act of Parliament which enabled the formation of the Nurses and Midwives Registration Ordinance in June 1949 (Kanaiya 1974:84).

Under the auspices of Dr Gilke a syllabus was developed that would help in standardising the training of the African nurses nationally. It was further agreed that the nurses would not be expected to perform highly technical work on completion of the training. For that reason they were to be trained only in the basics of care (Ndirangu 1972b:9).

2.5.2.1 A form of "emergency nurse training"

During World War II, (1939-1945) emergency medical personnel were required to cope with the increased number of casualties caused by the war. Two grades of nurses were trained to meet this need: Nursing Orderly Grade III and Nursing Orderly Grade II (NO II). The nursing orderly III nurses trained for eight weeks and those who excelled were selected for further training as nursing orderly II which consisted of another 12 weeks of training and included more skills in the management of emergencies. These nurses were rewarded after the war with a higher grade and served as Enrolled Nurses (ENs) without the two years' training required for the enrolled nurses at that time (Annunziata 1974:17).

2.5.2.2 Training of registered nurses

With the opening of the first girls' secondary school, Alliance, in 1948, more women became eligible for training at a higher level of nursing Nyoike (1974:24). In 1951 the Nursing and Midwives Council was amended to the Nurses and Midwives Council of Kenya (NMCK). In 1952, the Council granted recognition to the King George VI Hospital, now Kenyatta National Hospital (KNH) for the training of registered nurses. A class of four students comprising three Italian nuns and one Kenyan girl (Winfred Wairimu Nduhio, now Nyoike) were admitted to the training. Mrs Nyoike became the first Kenyan registered nurse. This trend was soon followed by the European Hospital (now the Nairobi Hospital) admitting the first class of registered nurses in 1956. By 1962, there were three training colleges in Kenya. The training was largely coordinated

by the General Nursing Council of England and Wales and the Central Midwives Board (Ndirangu 1982:34).

Today, following the establishment of the NCK through the Nurses Act Cap 257 of 1985, nursing affairs including training, registration, enrolment and practice are regulated by this council. The approved programmes conducted in Kenya include Bachelor of Science in Nursing (BScN), Kenya Registered Community Health Nurse (KRCHN), and Kenya Registered Nurse (KRN) as basic training. Post-basic training courses include a diploma in distance learning, aimed at upgrading the enrolled nurse to registered level; a diploma in midwifery, critical care nursing, psychiatry nursing, peri-operative and paediatric nursing. The universities in Kenya also offer master's and doctoral programmes in various speciality nursing fields (NCK 2007b:5).

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2.5.2.3 History of emergency nursing in Kenya

In Kenya there were attempts to train nurses who were deployed to care for patients who were critically injured on the battlefront during World War II (1939-1945) but they were not recognised with the title "emergency nurse". They were later rewarded by recognition as enrolled nurses, a title that described a practical nurse with no specific role who worked under the supervision of a registered nurse. Other than this, there is no mention in the literature reviewed of emergency nursing as such in Kenyan medical history (Ndirangu 1982:36).

The lack of literature available on the origin of emergency nursing in Kenya motivated the researcher to conduct personal interviews with people known to have contributed to emergency nursing activities and who were still involved in its continuity.

2.5.2.3.1 Emergency nursing education

In 1994, a nurse working as a volunteer in Rwanda, suffering multiple injuries from a horse riding accident was transferred for definitive care to the Nairobi Hospital (Interview with Commanday). The general perception then as now was that this institution offered the best medical care in the East and Central African region. After her condition was stabilised, the director of nursing services of the hospital, Ms Sue Carr-Hartley, sought to know more about this patient. It emerged that the woman, Ms

Channa Commanday was an American certified emergency nurse with a broad experience in clinical and administrative medical services who came from the USA.

Carr-Hartley asked her how the emergency medical services at the Nairobi Hospital compared with that in the USA. In sharing her experience about the care she had received, Commanday believed that the standards of care at the Nairobi Hospital were decades behind those in the USA, while the humanity, compassion and willingness of nurses to care for patients was much stronger in Kenya. She found the doctors and medical officers working in the emergency unit of the hospital inadequately trained and the basic concepts of triage and a team approach to emergency care completely absent.

The director of nursing services continued with this line of dialogue in the days to follow with the aim of determining whether Commanday would help change this situation in the future. A plan was developed and Commanday returned to Kenya to start the first formal training in emergency nursing in 1996. From the first day of training, Commanday verbalized that her goal was to work herself out of a job by training trainers who could carry on the development of emergency education in Kenya (Carr-Hartley 2009).

According to Commanday (2009b), the first class comprised eight students who trained for 10 weeks and were awarded certificates of successful completion. The course was divided into approximately 20 hours per week of theory and approximately 20 hours of clinical practice in the emergency unit and intensive care unit in the hospital. The classes continued yearly for nurses to date and included the ACLS, PALS, and ATLS courses. Commanday included doctors in the ALS courses and organised comprehensive training for doctors that was conducted by emergency medical doctors volunteering from the USA in 1998. The emergency nurse's course was only for RNs who did not necessarily have to be working in the emergency unit during the period of training. The ATLS courses were always open to nurses and doctors from other units as well as other hospitals. Both Carr-Hartley and Commanday still reside in Kenya and the researcher had the privilege of a face-to-face interaction with them.

Training continued during construction of a new emergency unit in the Nairobi Hospital. With the completion of this unit in 1998, Kenya got its first state-of-the-art modern emergency unit. The opening of this unit coincided with the terrorist bombing of the USA

embassy in Nairobi in August 1998. It was an unfortunate but timely event as those who had been trained in these courses led the operations to maximise the outcomes of the injured (Kahoro 2009).

Commanday was later assisted by Khadija Sharif, an registered nurse who had prepared students with a prerequisite course in pathophysiology. After the original course, Ms Commanday started to train teams of nurses and doctors in a course called "Training of Trainers". Courses in ACLS, PALS were conducted on a regular basis, utilising progressively more local staff to facilitate. Kahoro, a student of Commanday in the second class in 1997 has continued to participate in the coordination and instruction of these courses nationally and has been instrumental in the organisation of short courses for new staff that join the Nairobi Hospital together with the researcher. These courses have also become popular with other institutions in Kenya who send in their staff for training.

Asked about their major achievements, the graduates of this training through Kahoro and Makanga (2009) stated, "The emergency trained nurse does not wait for instructions from the doctor to carry out interventions; she/he is a part of emergency management team whose contribution is highly valued." Kahoro and Makanga emphasised that one positive change in the way the course is conducted now is that all nurses taking the course work in the emergency unit during the entire period of training unlike previously when they were drawn from other units in the hospital, which limited the time for practice in the emergency area.

The Nairobi Hospital continues with the yearly emergency nurse training. Kamamo, a former student of Commanday who trained as a trainer, conducts the course, which currently lasts for nine months, with the assistance of senior nurses in the emergency unit. Despite the commitment to training nurses in this specialty area over the years, the NCK does not yet recognise the emergency nursing speciality for national certification.

2.5.3 Emergency Nurses Association of Kenya

In May 2007, nurses who had taken emergency nurse training and worked in various hospitals in Nairobi city formed the Emergency Nurses Association of Kenya under the chairmanship of Mr Paul Kahoro. The association currently has a membership of sixty

emergency nurses. The main aim of this body is to bring together the emergency nurses and strengthen the advocacy and recognition for the specialisation (Emergency Nurses Association of Kenya 2009:2]).

The Emergency Nurses Association of Kenya held its first symposium in March 2008 which brought together 168 emergency nurses and associate members. Among the association's achievements so far are direct linkages with ENA in the USA to offer the Trauma Nurses Core Course to Kenyan nurses. Two such courses have been offered in the country, at Tenwek Hospital and on the African Air Rescue grounds.

Commanday is the current chairperson of Association for Safe International Road Travel in Kenya. Association for Safe International Road Travel in Kenya. This association launched its international branch in Kenya in May 2002 as a non-governmental road safety organization based in Nairobi. Association for Safe International Road Travel in Kenya is a member of the Kenya MOH's Committee for Road Safety, and a subcommittee for the implementation of a National Road Safety Plan (Commanday 2009b:4).

2.5.4 Scope of emergency nursing practice in Kenya

The term "scope of nursing practice" as defined by the NCK provides the limits of care that are of concern to the nurse. It further defines the legal boundaries of nursing practices and spells out what the nurse can be held accountable for in the course of his/her practice (NCK 2007a:3). The NCK is aware of the presence of emergency nurses in Kenya who have trained within or outside Kenya and are certified in BLS, ACLS, ATLS,TNCC, CEN and PALS. The emergency nurse will have at least satisfactorily completed a prescribed programme of education in basic nursing provided by an accredited institution approved by the NCK and is licensed by the NCK to provide nursing services.

In addition to the scope of practice spelt out for the other qualifications that the emergency nurse may possess, the emergency nurse specialist according to the NCK (2007a:3) shall:

- Carry out assessment, analysis, nursing diagnosis, planning, implementation of interventions, outcome identification, and evaluation of human responses of individuals in all age groups whose care is made difficult by the limited access to past medical history and the episodic nature of their health care.
- Triage and prioritise care.
- Prepare appropriately for emergency operations.
- Carry out stabilisation and resuscitation.
- Perform crisis intervention for unique patient populations, such as sexual assault survivors.
- Provide care in uncontrolled and unpredictable environments.
- Have consistency as much as possible across the continuum of care.
- Provide effective care for the patients with
    - Cardiovascular and respiratory emergencies
    - Neurological and endocrine emergencies
    - Musculoskeletal emergencies
    - Renal and reproductive emergencies
    - Infectious diseases and ENT/Facial and Ocular emergencies
    - Gastrointestinal and poisoning emergencies
    - Psych-social emergencies

As in the RSA and the USA, the scope of practice for emergency nurses in Kenya like in the RSA and the USA is broadly laid out in a non-specific manner; none of the countries states what the emergency nurse cannot or must not do.

According to Heyns (2003:[63]), this has both merits and demerits. The fact that the scope is written without set boundaries to the extent to which each stated acts or procedures are performed allows for continual development of the nurse and the profession as a whole. At the same time, the lack of limits creates dilemmas for the emergency nurse. This is more so in situations where an experienced emergency nurse happens to be working with a junior doctor who lacks the expertise to perform certain invasive procedures that are usually the domain of the doctor. Under such circumstance valuable time may be lost as the doctor “tries” before the nurse takes over to perform the procedure.

The lack of boundaries also leaves room for varied interpretations by different institutions that may result in exploitation of the nurse to the detriment of the patient (Powers 2009:220).

Regarding core competencies required by the emergency nurse to manage life-threatening situations in South Africa, Heyns (2003:[73]) found that emergency nurses in small health facilities function without the coverage of a doctor and perform a wider range of activities compared to those who work in larger facilities where there are doctors to carry out invasive procedures. Furthermore, the emergency nurse continues to be an essential member of the emergency management team in all environments of emergency care whose roles and activities depend largely on the availability of the doctor and equipment. This situation is similar to that found in Kenya (Makanga 2009).

Searle (2004:175) emphasises the extensive grey area between the work of the nurse and that of the doctor and cautions all nurses to ensure that they are conversant with the health legislation of their country as nurses are ultimately responsible and accountable for their own acts of omission and commission. The emergency nurse like any other nurse has dependent, interdependent and independent functions as a duly registered professional. These functions must be executed as and when appropriate as dictated by circumstances in the emergency area environment. In this respect the Kenyan emergency nurses share practice dilemmas with their counterparts in the RSA and the USA (Kamamo 2009).

2.6 EMERGENCY NURSING ENVIRONMENT

Emergency problems can be actual or potential, are sudden in nature, could be physical or psychological and their solution may require basic or advanced care (MacPhail 2003:2). The initial care delivery occurs where the patient is most often outside of the hospital setting.

In practice, unique processes like triage and emergency preparedness set emergency nursing apart from other aspects of general nursing. Emergency nursing is also governed by a unique set of unwritten rules that are as a result of the environment, severity of the patient or both. For example,

- severe conditions that require immediate interventions
- allocation of limited resources
- need for immediate care as perceived by the patient or others
- geographic variables
- unpredictable number of patients
- unknown patient severity, urgency, and diagnosis
- cultural and language variables

O'Shea (2006:4) points out that emergency nursing is governed by assumed rules that emerge in relation to the environment of the situation, the patient or both. MacPhail (2003:2) emphasises that the emergency nurse practises in varied emergency settings providing care to individuals, families and communities. These settings include hospital emergency units, the pre-hospital arena, occupational health clinics, ambulatory services, schools, and military arenas. In Kenya, literature review indicates the emergency nursing is practised in the same environments as the RSA and the USA (Commanday 2009b).

Heyns (2003:64) found that emergency nurses are currently underutilised because the nursing profession and health care systems lack knowledge of what they are capable of doing. In whatever setting emergency nurses find themselves, it is important for them to identify the patients' needs correctly, obtain appropriate assistance from other members of the health team, and carry out nursing interventions in the right manner (Heyns 2003:[75]). A programme for emergency nurse training, therefore, needs to address not only knowledge but equally important values and attitudes to ensure that the emergency nurses exercise their dependent, independent and interdependent functions in whatever environment as and when necessary.

The emergency nurse has to "go the extra mile" to provide care and alleviate suffering, which is the real essence of nursing as a profession, and at the centre of care is clinical competence (MacPhail 2003:7).

2.7 CORE COMPETENCIES IN EMERGENCY NURSING

Competence is a combination of skills, knowledge, attitudes, values and abilities that underpin effective performance within a profession or occupational area. Nurses enrol

at Nursing Education Institutions (colleges or universities) for formal education in emergency nursing and are registered by the nursing regulatory bodies within their countries (ENA 2008:4). Additional courses such as BLS, ACLS, PALS and ATLS are internationally available for doctors, paramedics and nurses to enhance uniformity in the provision of emergency services. It is on the principles of these courses (see sections 2.2.2.1 and 2.2.2.2) that the certification and updates are based although internationally nurses are not certified as ATLS providers.

The principles applied in BLS, ACLS.PALS and ATLS are mainly used to set the boundaries in emergency nursing practice. All these courses are attended by nurses in Kenya and certificates to provide these services are awarded by the Resuscitation Council of Kenya and the three accredited institutions. The Nairobi Hospital continues with internal (in-house) trainings in these areas and awards internal certificates to their staff and outsiders, including doctors. Like the scope of practice for nurses, core competencies in emergency nursing have remained non-specific in the emergency nursing curriculum (Cicely McDonnel School of Nursing 2009:2).

Sowney (2000:73) reported that emergency nurses' education is not immune to the changes affecting not only the service, but the nursing profession itself. It was recommended that education programmes for emergency nurses be competence based with core elements to help ensure a consistent approach throughout Northern Ireland. The programmes should be designed to equip nurses with the skills to practice in all emergency environments and should enhance teamwork.

According to Weiner and Irwin (2006:354) emergency nursing units have traditionally provided an environment rich in clinical material and exposure but often lack training frameworks with appraisal and assessment. Furthermore, much of the knowledge and experiences underpinning the competencies related to appropriate and timely response to Mass Casualty Incidents are basic to nursing practice. However, the context in which these competencies may be employed could vary and the nurse's role would be specific to the situation. These authors identify several competencies to assist nurse educators to include mass casualty incidents preparedness in the nursing curriculum. The same applies to components of emergency nursing other than mass casualty preparedness. It is paramount that core competencies that can enhance learning be incorporated in the emergency nurse training curriculum.

The ENA's (1999:98) core competencies are closely related to those identified by Heyns (2003:[213]) in order to manage life-threatening situations in the emergency care environments in the RSA. It is important to note that these are the main sources of boundaries in emergency practice information for core competencies. The boundaries in emergency practice are both internal and external (Heyns 2003:[217]). The external boundaries are legislation; regulations; societal demands; the economic status of the country and resources available, and health care delivery trends. The internal boundaries include the nurses' associations' and councils' guidelines for practice, quality improvement activities, and institutional and unit policies and procedures.

Brook and Crouch (2004:211) point out that the emergency nurse practitioner's expanding scope of practice has moved beyond managing the care of patients with minor injuries to include those with increasingly complex and acute conditions. This expansion has, to a large extent, been driven by societal demands including pressures on the health economy. The fact that the nurse is available and has reasonable skills to attend to patients in a satisfactory manner; the motivation that the nurse obtains from within, and the confidence the public has in the nurse to reduce the waiting time for emergency patients, have been major forces behind the role expansion (Henrik & Kerstin 2009:306).

It is indispensable for emergency nurses to realise that their acts are dependent on the laws and regulations that authorise their practice and they cannot perform professional acts for which they are not adequately trained (Heyns 2003:[79]). Emergency nurses need to spell out the specific scope of practice, measure up to the many activities that they perform without recognition and document evidence-based activities in which they are involved, through research (Commanday 2009b).

King (2008:189) emphasises that emergency nurses have an international presence and the question is whether they can take control and continuously direct the destiny of the speciality through strategic planning.

2.8 CONCLUSION

This chapter discussed the literature review on what is known about emergency nursing in three countries, namely the USA, the RSA and Kenya. The literature revealed that emergency nursing covers a broad spectrum of health care from accidents, medical emergencies at all ages to the effects of natural disasters.

Although numerous studies have been conducted on emergency nursing in relation to knowledge and skills, the researcher found little on the perception of the core competencies of the emergency nurse. Moreover, the competencies developed in other countries are based on the USA ENA's scope of practice, which is broad and non-specific. From the literature it emerged clearly that emergency nurses have yet to be accorded their rightful position, commensurate with the work they do in terms of recognition by other medical colleagues, the nursing profession and the medical system as a whole.

Chapter 3 discusses the research methodology.

CHAPTER 3

Research design and methodology

3.1 INTRODUCTION

This chapter discusses the research design and methods applied to achieve the aim and objectives of the study. This chapter also discusses the qualitative design utilised to address the development of emergency nursing in a level 1 hospital in Nairobi, Kenya. It then continues to discuss the quantitative design utilised during phase 2 to identify the core competencies that should by included in an emergency nurse training programme. The methods used in both phases are discussed in a chronologic manner. See Sections 1.3.5 and 1.3.6. In phase 3 of this study, the researcher utilises the findings of phase 1 and 2 to compile recommendations for the inclusion of core competencies in a programme for the training of emergency nurses in a selected hospital in Kenya.

Methodology in research is a systematic way of gathering data from a given population so as to understand a phenomenon and to generalize facts obtained from a large population (Cohen, Manion & Morrison 2007:44). According to Kothari (2005:8), research methodology involves the various steps adopted by a researcher in studying the research problem. Methodology embraces the research design and methods, including population, data-collection instruments, ethical considerations, and data analysis and interpretation.

Methodology therefore helps the researcher to understand the process of the research thus giving it scientific merit. Polit and Beck (2004:723) state that research methodology refers to “the steps used to structure a study and gather and analyze the data in the course of the research investigation and consists of a set of orderly, disciplined procedures to acquire information”.

3.2 RESEARCH DESIGN

A research design is a plan or blueprint of how one intends to conduct the research (Babbie & Mouton 2004:55). Burns and Grove (2005:223) add that the design guides

the researcher in planning and implementing the study in a way that is most likely to achieve the intended goal. A research design is usually the end result of a series of decisions been by a researcher on how to implement the study (Burns & Grove 2007:223). In this study, the researcher used a qualitative explorative design in phase 1 and a quantitative descriptive design in phase 2.

3.3 RESEARCH METHODS

Cormack (2004:68) describes research methods as the steps taken by the researcher through which the research design is realised. Methods include population, sampling frame, data collection and analysis and the rationale for the application of specific techniques in each phase of the research.

In this study, qualitative and quantitative methods were used. The rationale for this was that using more than one method in a study achieves triangulation, thereby improving the validity of the research (Cormack 2004:405-406). Triangulation refers to the use of multiple methods to collect and interpret data about a phenomenon so as to produce an accurate representation of reality. With triangulation, consistency and credibility is increased and the intrinsic bias from a single method use is overcome (Burns &Grove 2007:25; Polit & Beck 2004:333). There are three types of triangulation, namely investigator, data source, and method triangulation (Polit & Beck 2004:333; Burns & Grove 2007:225).

In order to achieve the aim, answer the questions and meet the objectives, the researcher conducted the study in two phases.

3.4 PHASE 1: DEVELOPMENT OF EMERGENCY NURSING

The researcher used a qualitative, explorative design in phase 1 to answer the question: What is known about the development of emergency nursing in a level 1 hospital situated Nairobi, Kenya?

3.4.1 Qualitative design

Burns and Grove (2007:18) define qualitative research as “a systematic subjective approach used to describe life experiences and situations and to give them meaning”.
According to Babbie and Mouton (2004:646), qualitative research studies human action from the insider’s perspective. Qualitative research refers to the investigation of phenomena by means of coherent descriptions that are generated from the in-depth and holistic exploration of a collection of rich narrative materials and the use of a flexible research design (Polit & Beck 2004:15).

A qualitative approach was suitable for this phase as it was necessary to get information and personal experiences of the nurses who were instrumental in the development of emergency nursing education and practice in the selected hospital.

3.4.2 Explorative design

Phase 1 was explorative as the researcher wished to explore the phenomenon of the development of emergency nursing in Kenya and the hospital under study, of which little was known (Babbie & Mouton 2004:89). The researcher explored the phenomenon by conducting personal interviews with the nurses who were involved in the development of emergency nursing in the hospital

3.4.3 Objective

The objective in phase 1 was to explore the development of emergency nursing in a level 1 hospital in Nairobi, Kenya.

3.4.4 Population

In research, the *population* refers to “the entire aggregation of cases in which a researcher is interested; the group of people that meet the sample criteria for inclusion. The members of a population need to be accessible because they are the intention of the investigation” (Polit & Beck 2004:289).
The population for phase 1 consisted of emergency nurses who were previously or at the time of sampling still involved in education and/or development of programmes for

emergency care in Kenya and not necessarily in the hospital under study alone. The researcher identified 8 of these nurses who started and are still instrumental in the development of emergency nursing in the hospital and in Kenya as a whole.

3.4.5 Sampling and sample

A sample is “a proportion of the defined population who are selected to participate in the study and reflect all the characteristics of the population. A sample represents the elements of the population from which the researcher seeks to collect data” (Cormack 2004:23). In this phase, the researcher selected 5 of the 8 professional nurses involved in the development of emergency nursing as a clinical speciality in the hospital under study as a sample.

Sampling or sample selection is the process of selecting a representative portion of the population (Polit & Beck 2004:731). An ideal sample should be representative of the population from which it has been selected for the results of the study to “apply to all cases in the population from which the sample is drawn” (Cormack 2004:291).

A non-probability sampling of snowball or network sampling procedure was applied in this phase.

3.4.5.1 Non-probability

Non-probability sampling was preferred in this study because it involves the selection of a sample from a population by means of a non-random procedure (Polit & Beck 2004:291). In non-probability sampling, not every element of the population has an equal chance of selection in the sample. Although this approach decreases a sample’s representativeness of a population, it is commonly used in nursing studies (Burns & Grove 2007:337). Non-probability sampling was preferred over probability sampling since the population was small and the intention was to have the whole population as a sample (Burns & Grove 2007:340). To be included in the study, the respondents had to have taken part in any way in the development of emergency nursing in the hospital under study, irrespective of what they were doing at the time of this study.

3.4.5.2 Snowball sampling

Snowball sampling, also called network or chain sampling, is a variant of convenience sampling in which early sample members are asked to identify and refer other people who meet the eligibility criteria (Polit & Beck 2004:292). This method is based on the assumption that friends tend to have similar characteristics (LoBiondo-Wood & Haber 2006:573). The researcher deemed this ideal as she did not know all the pioneer nurses nor were they all working in the hospital under study.

Accordingly, the researcher approached Mr Kahoro, a nurse who is and has been actively involved in the emergency courses training. Kahoro was then asked to help identify other nurses who could offer pertinent information. The identified nurses were then contacted and asked to participate. Three out of the eight nurses who met the criteria for inclusion, however, could not participate as one was out of the country and the other two were unavailable for the interview.

3.4.6 Data collection

LoBiondo-Wood and Haber (2006:562) describe data collection as “information systematically collected in the course of a study”. The data-collection method should be precise and systematic, and the information gathered relevant to the purpose and objectives of the study (Burns & Grove 2007:41).

The researcher used personal interviews for data collection because “in qualitative studies the interviewer and the interviewee have the common goal of making sense of the interviewee’s experience” (Burns & Grove 2007:78-79). An interview is structured or unstructured oral communication between the researcher and the respondents during which information is obtained for a study (Burns & Grove 2007:544).

According to Burns and Grove (2007:78-79) in qualitative research, the interview format often consists of open-ended questions allowing for adjustments and use of facilitator communication skills to get more information as the researcher gains more insight from each interviewee.

The researcher conducted personal interviews with five (5) pioneer nurses involved in the development of emergency nursing as a clinical speciality in the hospital under study and in Kenya as a whole. This necessary as no literature was available on the origin of emergency nursing in Kenya and the institution under study in particular.

Open-ended questions were used to guide the interview uniformly with each participant. This was combined with oral history, a variant of the in-depth interview that elicits information about what happened in the past (Cormack 2004:146-147).

The researcher asked all the respondents the following questions:

- What do you know about the history of emergency nursing in the hospital and Kenya?
- What, in your opinion, prompted the need to start emergency nursing in this hospital?
- When did the emergency nurse course start in this hospital?
- How did the emergency nurse course start in this hospital?
- Where did the emergency nurse course start and by whom was it started?
- What other courses started or have stemmed from the original emergency course?

During the interviews the researcher used probing, reflecting, clarifying, paraphrasing and summarising to facilitate and enhance the interview.

- **Probing**: The researcher probed to elicit more information from the respondents, using phrases like: Tell me more about that …; How exactly did it happen? How did you go about it?

- **Reflecting**: The researcher repeated the respondents' verbal or non-verbal message for their benefit. In reflecting the content of the message, the researcher repeated the participant's statements. This provided an opportunity for the interviewee to reflect on the experience and give the information more clearly (Babbie & Mouton 2004:277).

- **Clarifying**: The researcher tried to understand the basis of an interviewee's statement. Clarifying was necessary when a participant's communication was not clear. The researcher would say: Do I understand you to mean that?

- **Paraphrasing**: The researcher assimilated and then restated what she heard the interviewee say. This helped the researcher to test her understanding of what the participant communicated about a particular event or process in the development of emergency nursing.

- **Summarising**: The researcher synthesised what had been communicated by each member and then highlighted the points. This was most important at the end of an interview with each member for the researcher and the interviewee to recall areas discussed. It was also used during the interview to harmonise views that were expressed Morse (1994:105).

As it was not possible to tape-record the interviews, the researcher wrote down their responses during and immediately after each session (Holloway & Wheeler 2002:86). The interviews were terminated as soon as no new information emerged from the interviewees because saturation had been reached.

The data collected served to:

- Provide information about the development of emergency nursing in Kenya and in the hospital under study in particular, hence formed part of literature review.

- Enable the researcher to gain more insight into the phenomenon under study thereby increasing her insight and familiarisation with the institutional predisposition to this phenomenon (Babbie & Mouton 2004:289). This was considered to strengthen the justification and the reliability of the study.

3.4.7 Data analysis

Data analysis is a technique used to reduce, organise and give meaning to data (Burns & Grove 2007:402).

The researcher analysed the data in phase 1 by content analysis. Content analysis refers to qualitative analysis techniques used to classify words in a text into categories that are chosen for their theoretical importance (Burns & Grove 2007:535).

Before the data could be analysed, it had to be verified from the notes of individual interviews. The researcher read through the notes. This was a form of proofreading or transcription checking that ensured the accuracy of the transcription.

The researcher then studied the transcripts in order to identify the major themes and sub-themes that became apparent in the text. These were then summarised and used to draw conclusions that would provide answers to the research questions and meet the objectives for this phase.

Thereafter content analysis was done by comparing the facts as presented by each interviewee. The respondents' perceptions, understanding and knowledge were analysed and results compared. The bulk of the data contained the development of emergency nursing in the hospital under study and in Kenya as a whole.

The information elicited during this phase was availed to the rest of the members of the team of pioneer nurses for verification. The data was described and documented based on the information given by these individuals and included as part of the literature review (see section 2.5.2.3.1)

3.4.8 Trustworthiness

Trustworthiness in qualitative research means methodological soundness and adequacy (Holloway & Wheeler 2002:254). The criteria for trustworthiness are conformability, credibility, transferability and dependability (Krefting 1991:214-217.

However, since the information gathered was unique to the development of emergency nursing in the particular institution, transferability did not apply. Table 3.1 depicts the application of the criteria.

- **Conformability** establishes to what degree the result of the study is the product of the inquiry (Babbie & Mouton 2001:278). According to Morse (1994:105), conformability refers to repeated direct participatory and documented evidence observed or obtained from a primary informant source, the degree of neutrality or the extent to which the findings of a study are shaped by the respondents and not researcher bias, motivation, or interest.

- **Credibility** refers to the “truth”, ”value” or “believability” of the findings that have been established by the researcher through prolonged observation, engagement, or participation with the informants (Morse (1994:105). The credibility of the findings can also be confirmed by verifying data with a respondent or member check (Streubert-Speziale & Carpenter 1999:29). The credibility of the individuals interviewed was verified by the rest of the emergency nurses, to most of whom they had acted as mentors.

- **Dependability**. If the findings of a study are to be dependable, they should be consistent and accurate (Holloway & Wheeler 2002:255). The context of the research must also be described in detail and to achieve some measure of dependability an audit trail is necessary. Applied to this phase, the information gathered was given to emergency nurses to verify and was found to be consistent from all the interviewees.

Table 3.1 Strategies to ensure trustworthiness in Phase 1

Strategy	Action	Applicability to this study
Conformability/ Neutrality	Engagement of pioneer nurses	Refers to the objectivity of the research data such that independent people can agree about data relevance and meaning. In this phase the pioneer nurses from varied environments reached consensus about the information given by each participant concerning the development of emergency nursing in the hospital under study.
Researcher credibility or truth-value	Prolonged engagement	Researcher profile: The researcher of this study has been actively involved in emergency nursing as a clinical instructor, lecturer and emergency training instructor.
Dependability/ Consistency	Thick description Peer and supervisor evaluations	A detailed description of research methodology to be followed in this phase is provided. Supervisor approval of content of the questionnaire to be used in phase 2.The questionnaire was also subjected to a pre-test before use.

3.5 PHASE 2: CORE COMPETENCIES FOR AN EMERGENCY NURSE TRAINING PROGRAMME

A quantitative descriptive design was used in phase 2 in order to explore the core competencies that should be included in the emergency nurse training programme.

3.5.1 Quantitative design

Quantitative research is a formal, objective, systematic process in which numerical data are utilised to obtain information and describe variables, situations, events and concepts (Burns & Grove 2007:747). Quantitative research uses structured predetermined tools to generate numerical data and applies statistics to interpret, organise and represent the collected data (Burns & Grove 2007:37).This approach also applies controls on biases and limitation of extraneous influences on describing and analysing a study (Babbie & Mouton 2004:646).

The rationale for use of this methodology was to enable the collection of quantifiable and objective data from the respondents in order to identify the core competencies that should be included in the emergency nurse training programme.

3.5.2 Advantages of a quantitative approach

A quantitative approach was suitable for this phase because it:

- Allowed for formulation of the questions in specific terms that make it easy to understand and did not allow for ambiguous interpretations.
- Enabled the researcher to select focal variables and assign numbers to them. Assigning numbers to the variables facilitated the explanation of the differences in quality and quantity of information obtained from different respondents. This further enabled the researcher to arrive at consistent conclusions regarding core competencies that should be included in the emergency nurse training programme in the Kenyan situation (Matveev 2002:62-67).
- Allowed for the application of controls of possible biases, which ensured reliability and validity thereby increasing the credibility and confidence in the study (see section 3.6).
- Produced results that could be generalised regarding the core competencies that should be included in an emergency nurse training programme.
- Allowed scientific analysis using the SPSS version 16 program.

3.5.3 Descriptive design

Descriptive research collects detailed descriptions of existing variables and uses the data to justify and assess current conditions and practices with the aim of making plans for improvement or change (Lobiondo-Wood & Haber 2006:240).

Furthermore, descriptive research frequently forms the basis for further investigation and future direction. Carter (2004:213) and Burns and Grove (2007:240) add that descriptive design focuses on the study of the situation as it is.

The researcher considered a descriptive approach suitable as the aim of the study was to identify and describe the core competencies necessary for inclusion in an emergency nurse training programme based on the respondents' perceptions.

This approach enabled the researcher to collect and organize the data into patterns that described the respondents' activities in emergency units. The respondents categorised the activities as Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD) on what core competencies should be included in the emergency nurse training programme.

3.5.4 Objective

The objective in this phase was to identify and describe the core competencies that should be included in an emergency nurse training programme based on the respondents' perceptions.

3.5.5 Population

The population in phase 2 consisted of professional nurses and doctors working in or involved with the management of emergency patients in the following emergency department/units in the hospital under study:

- Accident and emergency
- High dependence unit
- Critical care unit
- Cardiac catheterisation laboratory
- Lecturers in the area of emergency nursing

The population in these units comprised 126 nurses and 53 doctors, giving a total of 179. The respondents had to be willing to participate in the study; give written informed consent to participate; be registered with the NCK; possess a valid practising licence, and be available during the data-collection period.

The eight (8) nurses who had participated in phase 1 were excluded from the population in phase 2. The 15 nurses and doctors who took part in the pre-test as well as nurses

and doctors who had not worked in the institution for six months at the time of sampling were also excluded.

3.5.6 Sampling and sample

In this phase, out of a population of 179 (126 nurses and 53 doctors) working or involved in the care of patients in the emergency department/units in the hospital under study, a total of 123 nurses and 49 doctors were proportionately selected as a sample giving a sample of 172 (96%). This sample was considered adequate since the minimum acceptable level of power is 80% (Burns & Grove 2007:340). Out of a sample of 172 who all received questionnaires, 158 (91%) questionnaires were returned (see chapter 4, table 4.1).

A 95% level of confidence was selected for determining the sample size. To obtain a reasonable level of accuracy, the worst case percentage of 50% was used. The wider the interval, the more certain that the whole population answers will be within that range (Creative Research Systems of 2007-2009:3).

Non-probability or purposive sampling, also referred to as judgemental or selective sampling, was used because the researcher wished to obtain respondents who would be most informative (Burns & Grove 2007:551).

In purposive sampling, each sample is selected for a particular purpose or reason (Polit & Beck 2004:291). The purpose in this case was the unique knowledge that the individuals selected had about the subject under investigation: emergency care. Since emergency care is multidisciplinary, both the nurses and the doctors working in these units were familiar with the activities and the procedures hence their inclusion in the sample.

Table 3.2 Phase 2: sample

Department/Unit	Target population		Respondents selected		
	Nurses	**Doctors**	**Nurse**	**Doctors**	**Total**
Accident and emergency unit	48	23	48	21	67
High dependency unit	24	12	24	11	35
Critical care unit	45	13	42	12	54
Cardiac catechisation laboratory	3	5	3	4	7
Lecturers	9	Nil	9	Nil	9
Total	126	53	**123**	**49**	**172**

The target population in phase 2 excluded the eight pioneer nurses who formed the population in phase 1 and the 11 nurses and four doctors who took part in the pre-test (see section 3.5.8).

3.5.7 Data collection and instrument

Data collection refers to “information systematically collected in the course of a study” (LoBiondo-Wood & Haber 2006:562). The researcher selected a questionnaire as data-collection instrument. A questionnaire is a document containing questions and other types of items designed to solicit information appropriate to analysis (Babbie & Mouton 2004:646). Questionnaires are often used in descriptive studies to gather a broad spectrum of information from respondents.

Questionnaires can be structured or unstructured. Unstructured questionnaires ask open-ended questions which require written responses regarding the opinion of the respondents. Structured questionnaires ask closed questions, which have selected options or answers for the respondents to select. In this phase the researcher used a structured questionnaire (Burns & Grove 2007:382; LoBiondo-Wood & Haber 2006:570; Kothari 2005:102).

The in-charges were reminded to allow the respondents to take part in the exercise on the specified days. The researcher and the research assistants distributed the questionnaires to the respondents. The respondents had signed consent to participate in the study. They were required to select the core competencies from a list in the

questionnaire that, in their view, should be included in the emergency nurse training programme.

The researcher read the instructions with the respondents in the presence of the research assistants, who were available to the respondents during the entire period of data collection. The respondents were asked whether there were any issues that needed clarification before the exercise started.

The respondents were informed that the time required to answer the questionnaire was 20 minutes at most but two days would be allowed to accommodate different shifts and to ensure that all the completed questionnaires were collected at the same time. Questionnaires have several advantages (Burns & Grove 2007:383-384):

- They promote anonymity thereby encouraging respondents' free and honest responses.
- They are economical in terms of time since they demand less time to distribute and to collect.
- It is easy to reach many respondents with questionnaires.
- They make available easy, accurate and consistent measurement, which in turn offers easy establishment of reliability and validity.

Questionnaires also have disadvantages. For example, respondents may fail to answer certain questions resulting in a low response rate. The availability of the research assistants helped reduce this. Respondents might misunderstand questions and therefore answer irrelevantly or not at all.

The researcher ensured that the research assistants were available to the respondents at all times. A covering letter accompanied the questionnaire, which was divided into four sections (see Annexure E):

- Section A: Demographic information
- Section B: Basic and advanced knowledge to be included in the emergency nurse training programme
- Section C: Special circumstances that could be included in the training programme

- Section D: Attitudes and values of the emergency nurse necessary to the training programme

Table 3.4 presents the layout of the questionnaire (see annexure E for the questionnaire).

Table 3.3 Layout of the questionnaire

Sections	Area of question
Section A: **Demographic information** Each question comprised several sub-questions	**A1**- Gender **A2**- Age **A3**-Department **A4**-Professional status **A5**-Experience **A6**-Type of patients **A7**-Independent decision **A8**-Midwifery The data obtained from this section was used to describe the population and the sample.
Section B: **Basic and advanced life support skills essential for emergency nurses in life-threatening situations that should be included in the training programme**	**B1**-Assessment and recording **B2**-Safety in pre-hospital environment **B3**-Safety in hospital environment **B4**-Airway and cervical control **B5**-Breathing and ventilation **B6-**Circulation with haemorrhage control **B7**Disability, defibrillation, Differential diagnosis, drugs **B8**-Exposure and environmental control **B9**-Adjuncts The data obtained from here was used to identify and describe the basic and advanced life skills necessary to for inclusion in the emergency nurse training programme as core competencies.
Section C **Special circumstances**	**C1-**Supportive management for obstetric emergencies **C2-**Supporting the rape victim **C3**-Collecting forensic evidence from the rape victim **C4**-Neonatal stress management **C5**-Selecting an appropriate transport mode for the critically ill or injured patient **C6**-Detecting child and adult abuse

Sections	Area of question
	C7-Identifying and managing poisoning victims Data obtained from this section was used to identify and describe the core competencies pertaining to special circumstances that should be included in the training programme.
Section D: **Attitudes and values of a practising emergency nurse**	- Have self-respect - Accept accountability for his/her own decisions - Be knowledgeable - Acknowledge his/her own limitations in skills and knowledge - Acknowledge the importance of legislation, scope of practice, attitudes and values

3.5.8 Pre-test

A pre-test is a trial administration of a research instrument to identify possible flaws and to ascertain time requirements (Polit & Beck 2004:728). The questionnaire (instrument) was pre-tested by first presenting it to Dr Tanya Heyns, who initially developed the questionnaire. Secondly, since there were adjustments to suit the Kenyan situation it was presented to a statistician in Kenya to ascertain its suitability in the context.

Thirdly, the questionnaire was then administered to a sample proportionately drawn from all the emergency departments/units of the hospital under study (see section 3.4.9.2). The respondents in the pre-test were excluded from participation in the main part of the study (phase 2) but were deployed as research assistants in their respective areas of work. The pre-test evaluated content validity in order to certify the extent to which the tool covered the various dimensions of the concepts under investigation and the time required to fill in the questionnaire.

The researcher guided this exercise personally to ensure that the items in the instrument were understood. The main research instrument was then reviewed and revised (where necessary) on the basis of the results obtained from the pre-test before it was administered for the main study in phase 2 (Babbie & Mouton 2004:231-260).

3.5.8.1 Sample for pre-test

The sample for the pre-test was proportionately selected based on 5% of the population of each unit and decimal point rounded to the nearest whole number (see table 3.2). The total population of 187 (130 nurses and 57 doctors) excluded the 8 pioneer nurses who formed the population in phase 1. The eight nurses who took part in phase 1 were excluded from participation in the pre-test.

Table 3.4 Pre-test: sample

Department/Unit	Target population		Respondents		
	Nurses	Doctors	Nurses	Doctors	Total sample
Accident and emergency unit	44	26	3	1	4
High dependency unit	26	12	2	1	3
Critical care unit	48	14	3	1	4
Cardiac catheterisation laboratory	4	5	1	1	2
Lecturers	8	-	2	1	3
TOTAL	**130**	**57**	**11**	**4**	**15**

3.5.8.2 Sampling for pre-test

Sampling or sample selection is the process of selecting a representative portion of the population (Polit & Beck 2004:731). Cormack (2004:291) points out that "for the results of the study to be inferred to apply to all cases in the population from which the sample is drawn, an ideal sample should be representative of the population from which it has been selected". The researcher chose a convenient sample for the pre-test. Convenience or non-probability, purposive sampling has the potential to obtain high quality data and involves selecting the most available persons in the population in order to save time and money.

Since a pre-test study is a means of measuring an instrument by using it with a small number of people with similar characteristics as those in the population, it is conducted as a prelude to a larger scale study (LoBiondo-Wood & Haber 2006:569).

After the completion of the exercise, which took between 15 and 20 minutes, time was allowed for questions and discussion to share any areas that needed rectification. This was to ensure that any errors were corrected before the main data-collection exercise. The respondents suggested including the following

- Detection of child and adult abuse by the emergency nurse
- Poisoning and management
- Section B to read Basic and Advanced instead of Basic alone as some of the skills belong to the advanced category.

The questionnaire was amended according to these recommendations for use in phase 2.

3.5.9 Data analysis

Data analysis is a technique used to reduce, organise and give meaning to data (Burns & Grove 2007:402). A statistician analysed the data in phase 2, using the Statistical Package for the Social Sciences (SPSS) version 16.0. In this phase, data analysis relied on the manipulation of descriptive statistics.

Descriptive statistics are used to describe and synthesise data. According to Polit and Beck (2004:451), they provide simple summaries about the sample and the measures that form the basis for a study. Univariate analysis, which is the examination across cases of one variable at a time, was carried out. This kind of analysis involved the calculation of distribution, the central tendency and dispersion. A statistician analysed the data, using the Statistical Package for the Social Sciences (SPSS) (version 16.0), a statistical software program capable of answering the second research question.

3.6 RELIABILITY AND VALIDITY

For a study to form the basis of further research, practice and theory development, it must be credible and dependable. Essentially, validity and reliability are controls applied in accordance with the design of a study in order to prevent biases that would reduce confidence in the results reported by the researcher (LoBiondo-Wood & Haber 2006:336).

3.6.1 Reliability

Reliability is a precondition for validity in that an unreliable measure cannot be valid (Carter & Porter 2004:32). It is concerned with the extent to which a measure produces consistent results. Reliability of a research instrument refers to the extent to which the instrument yields the same results on repeated measures.

Reliability is therefore concerned with consistency, accuracy, precision, stability, equivalence and homogeneity (LoBiondo-Wood & Haber 2006:344).

The important aspects of reliability in this study were accuracy, precision and consistency. To guarantee reliability in these three areas, an effort was made to ensure the following:

- Only questions relevant to the subject were included.
- The respondents were given clear and similar instructions before filling in the questionnaires.
- The researcher was available on phone or in person for consultation at all times to clarify any questions that the respondents may not understand.
- At least one research assistant was in every department/unit at all times for consultation during data collection.

3.6.2 Validity

The quality of research and research instruments is determined by their validity and reliability. Burns and Grove (2003:45) describe validity as "*the extent to which the instrument actually reflects or measures what it is supposed to measure*". According to Babbie and Mouton (2004:648), validity of a research instrument refers to a measure that accurately reflects the concepts it is intended to assess, hence the accuracy and meaningfulness of inferences as concluded and reported in the research results.

The questionnaire was rigorously tested and evaluated for validity and reliability in the Kenyan situation. Moreover, a pre-test was conducted prior to the main study to allow for any amendments to the questionnaire.

3.6.2.1 The study

Types of validity in a study include content, criterion and construct validity. The study ensured content validity. Content validity refers to “the extent to which the method of measurement includes all the major elements relevant to the concept being measured” (Burns & Grove 2003:274).

According to (LoBiondo-Wood & Haber 2006:338), content validity is concerned with whether the measurement tool and the items in it are representative of the content domain that the researcher intends to evaluate. The adequacy of the coverage of the content area being measured can be determined by asking the following questions:

- Does the tool contain and measure the content it should?
- Does the instrument provide an adequate sample of items that represent that concept?

The content validity of the questionnaire in this study was enhanced by

- Including questions that had been tested in RSA by Heyns with modifications to reflect the Kenyan context.
- Subjecting the questionnaire to the study supervisors for evaluation and approval for its appropriateness for this study.
- Developing operational definitions thereby leading to correct interpretation of meanings of the findings.
- Conducting a pre-test to verify the aptness of the content for eliciting the information necessary to address the research problem and questions
- Assessing and validating the content after the pre-test to judge the validity of the questionnaire before the main data collection.

3.6.2.2 Data collection

The way the data was collected ensured validity. A non-threatening environment was created by allowing the respondents to fill in the questionnaires in their usual working areas. The respondents were also instructed to work through the questionnaires individually. They were allowed ample time to accommodate their shifts. A pen was

attached to the questionnaire forms with a string to ensure its availability for use. Also provided were envelops in which the respondents sealed their completed questionnaires. No writing was required on the envelope to further enhance anonymity. The researcher and the research assistants collected the completed questionnaires on a specific day that was arranged with the respondents on the day of distribution of the questionnaires. The completed questionnaires were placed in a big envelope in a particular area previously discussed with the managers to avoid the chances of the researcher or the research assistants coming into contact with respondents hence the possibility of identifying a particular form with a particular participant, which could breach anonymity.

3.7 PHASE 3: RECOMMENDATIONS

The recommendations of this study were derived from Phase 1 (Qualitative data) and Phase 2 (Quantitative data). In Phase 1, the participants provided an overview of the historical developments. The information has been described in Chapter 2 (Literature review and combined with the literature review. In Phase 2 the analysis of the questionnaire lead to the recommendations which is described in Chapter 4. Phase 3 is the recommendations of the respondents and is provided in chapter 5 of the study (see section 5.5).

3.8 ETHICAL CONSIDERATIONS

Ethics deals with matters of right and wrong, and refers to a social, religious or civil code of behaviour considered correct, especially that of a particular group, profession, or individual (Polit & Beck 2004:141-158). Polit and Beck (2004:167) emphasise that when people are used as study respondents, “care must be exercised in ensuring that the rights of the respondents are protected”. Accordingly, the researcher obtained permission to conduct the study and respected the respondents’ right to autonomy, anonymity, confidentiality, justice, and protection from harm and discomfort (Burns & Grove 2001:196).

3.8.1 Permission

The researcher obtained written permission to conduct the study from the Research and Ethics Committee of the University iof South Africa and from the hospital under study (see annexure A, B and C).

3.8.2 Autonomy

Autonomy is based on the ethical principle of respect for persons and indicates that people are capable of controlling their own destiny (Rensik 2007:213). The respondents' autonomy was ensured by explaining the purpose and significance of the study to them; obtaining their informed consent (see annexure D) as a sign of their willingness to participate, and emphasising that participation was free and voluntary, and that they had the right to withdraw from the study at any time.

3.8.3 Beneficence

The principle of beneficence states that one should do good and above all do no harm (Burns & Grove 2001:165). The right to protection from discomfort and harm from the study is based on the ethical principle of beneficence. Researchers therefore have an obligation to attempt to maximise benefits to individuals or groups of respondents or to society (Rensik 2007). The study met this requirement as the benefits are more to the nursing profession as a group and to society as the beneficiaries of good emergency nursing.

3.8.4 Justice

The ethical principle of justice requires that people be treated fairly. The respondents were selected fairly on relevance to the study and were treated with respect and fairly throughout the study.

3.8.5 Risk of harm

Respondents should be informed of any foreseeable risks or discomforts that might be incurred as a result of participation and the efforts that are taken to minimise the risks

(Polit & Beck.2004:151). In this study there was no risk of exposing the respondents to physical or other discomfort or harm.

Physical harm refers to bodily injuries sustained with possible damage to internal or external organs as a result of participating in the research process (*Mosby's Medical, Nursing and Allied Health Dictionary* 2004:920). The nature of this study was such that no physical harm was anticipated whatsoever. The respondents filled in the information during their normal working hours and in their usual environments, hence no physical risks were likely.

3.8.6 Anonymity and confidentiality

The respondents' anonymity and confidentiality were assured because no information could be linked to specific respondents (LoBiondo-Wood & Haber 2006:559). The respondents were informed that the given information would be treated with strict confidentiality and were not required to include any form of identity in the questionnaires. In addition, the forms were not collected directly from the respondents but were placed in an agreed place for collection by the researcher and the research assistants.

3.9 CONTRIBUTIONS OF THE STUDY

One of the chief aims of research is to contribute to the already existing body of knowledge or practice. The researcher is of the opinion that this study will contribute significantly to nursing education and practice in the areas outlined below.

3.9.1 Clarification of core competencies

Nursing plays an essential role in any health service (WHO 2008:4-5). For this reason, this study will contribute to the delineation of core competencies of the nurse in the emergency setting. Including these in the curriculum will ensure a better quality nurse at the end of training. Understanding the core competencies of the emergency nurse will also foster better emergency teamwork of which the nurse is a key player.

3.9.2 Improvement of care

Collaboration is a key element in the provision of emergency care. Olivia (2007:539) identifies physicians' lack of knowledge of nurse practitioner scope of practice as a common barrier to collaboration. A collaborative workforce results in improved patient care. By describing the essential core competencies required in the curriculum for emergency nurse training, this study will contribute to the improvement of practice amongst the team members and hence efficient and better patient management.

3.9.3 Basis for replication

The literature review indicated that no such study has been undertaken in Kenya. Only one similar study in South Africa has been recorded. This study would therefore form the basis for similar studies to be replicated in Kenya and other African countries with the aim of improving emergency nursing.

3.9.4 Promotion of recognition by regulatory bodies

The researcher discussed the possibility of opening a register for emergency nursing speciality with the officer in charge of registration at the NCK. It emerged that the NCK have done their part by including emergency content in the basic training syllabus. However, it is not possible for the NCK to open a register while there no approved examination course exists for that speciality. This study should enable the NCK to grasp more fully what the emergency nurse on the ground does and start the process for the development of a curriculum on which the NCK can regulate and control both the training and practice aspects of this speciality.

3.9.5 Empowerment of accident and emergency nurses

Emergency nurses face many medico-legal issues in their course of duty. Abdool and Brysiewicz (2009:19) maintain that emergency nurses in SA face challenges in acquiring the skills to effectively care for crime victims, a fact that could have far-reaching legal implications. This study will empower nurses by offering boundaries within which they can practise.

3.9.6 Educational evaluation and credibility

Without core competencies it is difficult to evaluate a programme objectively. This study wished to identify the core competencies that when included in the curriculum would not only add value to the training but also aid learning as the students would be aware of what was expected of them at every stage. Additionally, spelt out competencies would assist objectivity in evaluation of both product and the curriculum.

3.10 LIMITATIONS OF THE STUDY

The descriptive design did not offer a strong base for generalisation of the findings in this study (Burns & Grove 2007:413). Generalisation was restricted to the institution under study and not to emergency nurses in other hospitals.Being context-bound, whatever went on in the department or unit at the time of data collection could have influenced the responses.

A quantitative design did not encourage the evolving and continuous investigation of the research phenomenon during data collection. No data beyond what was in the questionnaire was collected thereby not allowing for inclusion of new emerging situations (Burns & Grove 2007:551). The use of a structured questionnaire limited outcomes to those outlined in the original research proposal due to closed questions consequently minimising respondents' varied opinions (Burns & Grove 2007:383-384)

3.11 CONCLUSION

This chapter discussed the research design and methodology. The researcher used qualitative explorative and quantitative descriptive designs guide the study in phases I and 2, respectively. The population, data-collection techniques, reliability and validity, and ethical considerations were all described.

Chapter 4 covers the data analysis and interpretation.

CHAPTER 4

Data analysis and interpretation of the results

4.1 INTRODUCTION

In this chapter the data is analysed interpreted and the research findings discussed.

Data analysis refers to the systematic organization and synthesis of research statistics in order to gain information pertinent to a given research question. Data analysis gives the meaning to data collected during research through use of statistical procedures (Burns & Grove 2007:402).

The most important objective, which is the same as the second objective and served as the main investigation of the study was to describe the core competencies that should be included in an emergency nurse training programme based on the views of professional nurses and doctors working in the emergency units in a level 1 hospital situated in Nairobi, Kenya.

The study made use of descriptive as well as inferential statistics. Biostatistics Consultancy Service was consulted in order to assist with the data analysis.

A total of 172 questionnaires were distributed out of which 158 were returned (see **table 4.1**). The response rate was therefore 91.86%, Burns and Grove (2007:402) regard a response rate of above 50% to be satisfactory.

Babbie and Mouton (2004:261) concurs with this in stating that a response rate of 50% is adequate for analysis and reporting and therefore this criterion was met.

The researcher and the statistician checked the returned questionnaires for completeness and consistent answers initially. This step entailed closely checking the questionnaire items in order to identify any which could have been left blank or incomplete and also ascertained the legibility of each questionnaire. The data was entered in a Statistical Package for Social Scientists (SPSS) software; coded and

analyzed using frequency distribution tables graphs and computed percentages for all items (Burns & Grove 2007:404) .

Table 4.1 Distributed and returned questionnaires

Department/unit	Distributed questionnaires	Returned questionnaires
Emergency unit	69	62
High dependency unit	35	33
Critical care unit	52	47
Cardiac catheterization laboratory	7	7
Lecturers	9	9
TOTAL	**172**	**158**

Note:

- Phase 1 of this study, where the pioneer nurses were interviewed to explore the historical development of emergency nursing in the institution under study served as an introduction rather than a method and the information was included as part of literature review. For this reason, the data analysis described in section 3.4.7 is considered sufficient and there is no further analysis of data pertaining to this phase in this chapter. Likewise, there is no data analysed for phase 3 but rather a compilation of recommendations based on the findings of phase 2.

- In section **B** of the questionnaire, values attributed to strongly disagree and disagree were grouped together and considered **disagreed** whereas agreed and strongly agree were combined and considered **agreed**. For this section percentages are calculated based on the number of responses to the questions in a specific category of the questionnaire.

- All percentage values are rounded off to the nearest two decimal places.

- Those skills that were selected as "**agreed"** were considered as identified as the core competencies that should be included in an emergency nurse training programme. This consideration is supported by NONPF (2006:[6]) that there should be established entry-level core-competencies in form of skills for emergency nurse practitioners.
- The data analysed in this chapter pertains to phase 2 of the study.

4.2 DATA ANALYSIS AND RESULTS

The following sections present the results systematically according to the findings in phase 2 as reflected in the responses from the questionnaires.

4.2.1 Demographic data

The demographic data in section A reflect the respondents' gender, age, department/unit, present professional status, years of experience in the emergency care environment, types of patients managed in the unit, making of independent decision by nurses in the absence of the doctor and midwifery as a qualification.

4.2.1.1 Gender

The gender distribution of this study's sample reveals that, of the returned questionnaires N=158, the majority 104 (65.8%) were females while a minority 54 (34.2%) were males. This was not surprising as a larger number 123 (71.5%) of the respondents were nurses of which the majority are females as compared to doctors who were 49 (28.4%), see table 3.3. According to Sullivan (2001:14), the ratio of male to female nurse is 1:19. This viewpoint is shared by (Bartfay 2001:6) that female nurses usually outnumber males by a significant proportion. Table 4.2 and figure 4.1 illustrate the gender distribution in this study.

Table 4.2 Frequency table for respondents' gender

Gender	Respondents	% (N=158)
Female	104	65.8
Male	54	34.2

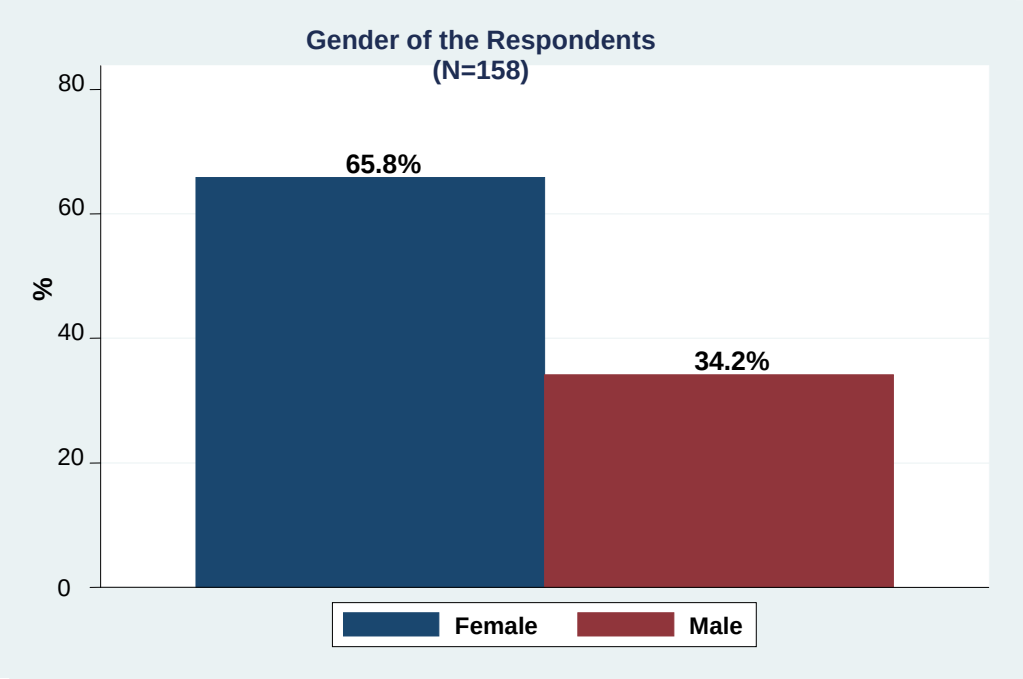

Figure 4.1 Gender of the respondents (N=158)

4.2.1.2 Age

The respondents were asked to select the relevant age in years from the listed age groups in the structured questionnaire. Table 4.3 and figure 4.2 represent the age distribution of the nurses and doctors who work in the emergency units in the hospital. The results of age distribution indicate that a majority of the respondents were between 25-29 years accounting for 45 (28.8%), followed by 30-34 years (26.6%), 35-39 years 40 (25.3%), 40-44 years 18 (11.4%), while the least age groups represented were shared equally by those older than 45 years and younger than 25 years yielding similar scores of 7 (4.43%).

This trend shows that there are more young people working in the emergency units in the institution. A possible explanation for this could be the fact that emergency units are perceived to be stressful and therefore many nurses tend to move out faster either to other departments or to other hospitals Kellow (2000:[78]). This leaves younger people who have just qualified in these units. A similar study conducted in the RSA, however, found that the majority of respondents were older than 34 years Heyns (2003:[235]).

Table 4.3 Frequency table for respondents' age

Age	Respondents	%
25-29 years	45	28.5
30-34 years	41	26.0
35-39 years	40	25.3
40-44 years	18	11.4
45 Years or older	7	4.4
Younger than 25 years	7	4.4

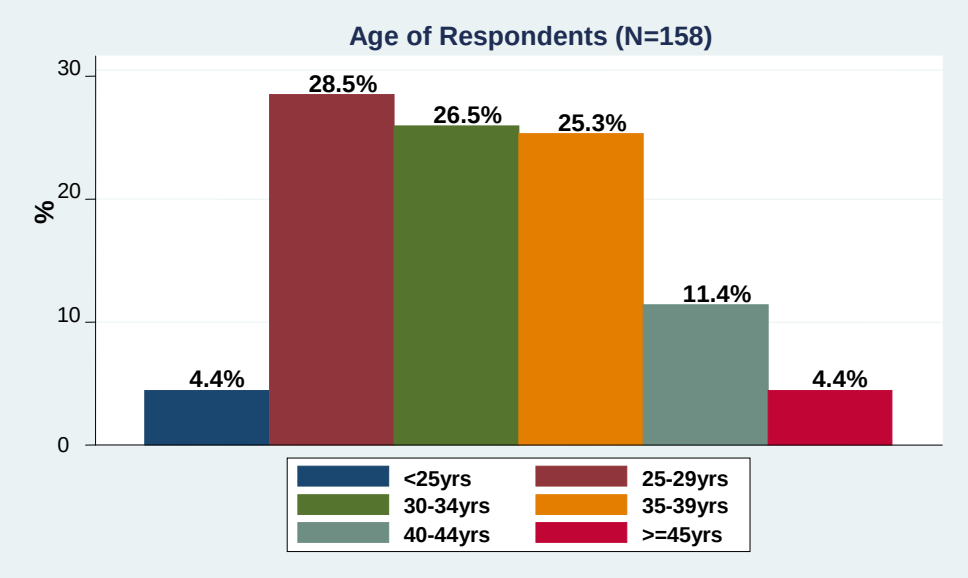

Figure 4.2 Age of respondents (N=158)

4.2.1.3 Units/departments

As for the units/departments that were represented in the sample a majority of the respondents were from the emergency unit 62 (39.2%), 47 (27.7%) from the critical care unit,33 (20.8%) from the high dependency unit, 9 (5.6%) from the school of nursing and the least respondents were from the cardiac catheterization unit 7 (4.4%). Table 4.4 and figure 4.3 depict this.

This is in line with the numbers of questionnaires that were distributed and returned as presented in table 4.1 which also shows the same order. It is as was expected; more so,

because of the emergency units in the hospital, accident and emergency unit have the most nurses and doctors. As shown in table 3.3, out of a population of 179, accident and emergency unit had the majority respondents of 71 (39.66%), critical care unit 58 (32.4%), high dependency unit 36 (20.1%), school of nursing nine (5%) and cardiac catheterisation laboratory eight (4.4%). This adds validity to the findings given that comparatively the staffs in the emergency unit are the ones who handle the widest range of the emergencies amongst all the units from which the sample was drawn. It means that the majority of the responses were given by those who are at the core of the activities of emergency services.

Table 4.4 Frequency table for respondents' departments

Department	Respondents	% (N=158)
Emergency unit	62	39.2
Cardiac catheterisation laboratory	7	4.4
Critical care unit	47	27.7
High dependency unit	33	20.8
School of Nursing – lecturer	9	5.6

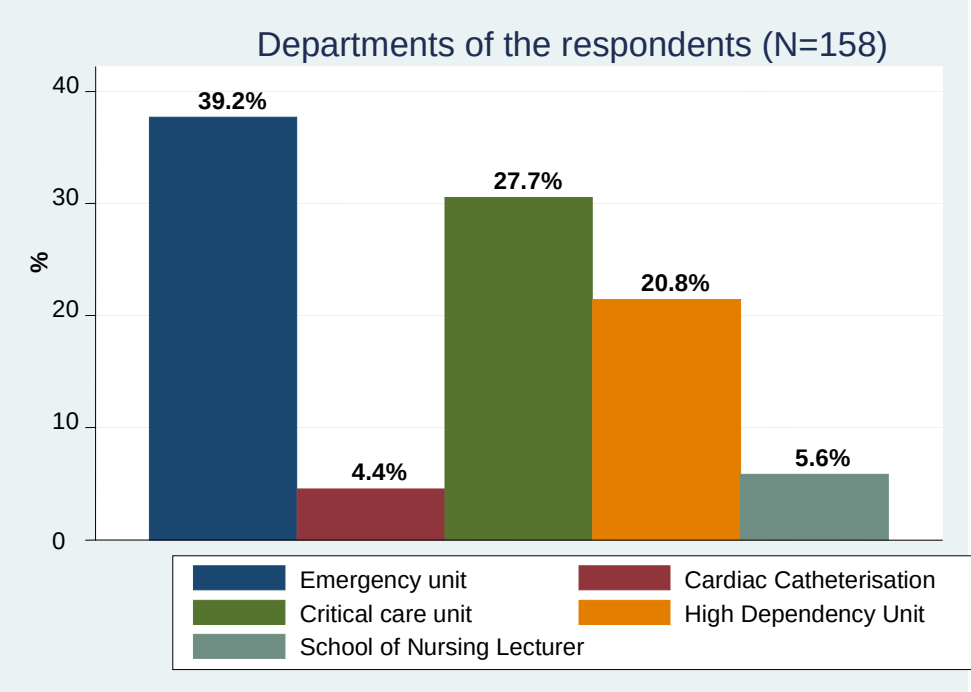

Figure 4.3 Departments of the respondents (N=158)

4.2.1.4 Present professinal status

As shown in table 4.5 in this category the total number of respondents was 145. When all the cadres of nurses were added together nurses who responded to this section of the questionnaire were 109 (68.9%) as compared to 49 (31.1%) doctors.

However, it was important to have the views of both the nurses and doctors since they are the main members of the emergency care team. As Proehl (2009:xi) explains, emergency nurses and doctors in the emergency unit encounter a variety of clients, but manage them as a team.

This was not out of the ordinary as the bigger number of respondents in this phase were nurses. Comparatively internationally, nurses form the largest percentage of all health workers (WHO 2008:[5]).Out of the cadres of nurses N=109 the emergency trained nurses were the majority with 43 (27.2%). Considering each professional status, the doctors emerged the majority with 49 (33.8%).Critical care nurse (trained) 31 (19.6%), critical care nurse (trainee) 12 (15.9%), emergency nurse (trainee)10 (6.3%),emergency nurse lecturer, 9 (5.6%) and critical care nurse lecturer, 4 (2.5%). The fact that the majority of the respondents were nurses adds to the credibility of the selected core competencies in that it is nurses who should understand their needs and what they require to be trained on in order to be able to contribute maximally as members of the emergency team.

Table 4.5 Frequency table for present professional status

Present professional status	Respondents	% (N=158)
Emergency nurse (Lecturer)	9	5.6
Emergency nurse (Trained)	43	27.2
Emergency nurse (Trainee)	10	6.3
Critical care nurse (Lecture)	4	2.5
Critical care nurse (Trained)	31	19.6
Critical care nurse (Trainee)	12	15.9
Doctors	49	33.8

4.2.1.5 Years of experience in emergency care environment

A majority 44 (27.8%) of the respondents to this question had worked in the emergency care environment for less than two years. In a descending order, those who had worked for 2-3 years were 32 (20.2%), 4-5 years 25 (15.8%),6-7 years 23 (14.5%),10 years and more were 19 (12%) and those who had worked for between 8-9 years were the least having 15 (9.4%) respondents. See details in table 4.6 and figure 4.4.

This concurs with the trend in the category of age where it was noted that the majority of the workers in the emergency units are young between the ages of 25-29 years. Literature review indicated that emergency environments are relatively stressful (Kellow 2000:[78]); this could be a reason for high turnover in the units. However, on the overall 57 (37.3%) had worked in the emergency care environment for over 5 years. This gave them the experience and the expertise on issues pertaining to emergency care to be able to know what should be included in an emergency nurse training programme, which is the reason for the conduct of this research. It can hence be concluded that the responses that were given were based on the real experiences and actual interventions that are carried out on day to day basis in an emergency environment.

Table 4.6 Frequency table for respondents' years of experience in emergency unit

Years of experience	Respondents	% (N=158)
6 months - 2 years	44	27.8
2-3 years	32	20.2
4-5 years	25	15.8
6-7 years	23	14.5
8-9 years	15	9.4
10 years or more	19	12.0

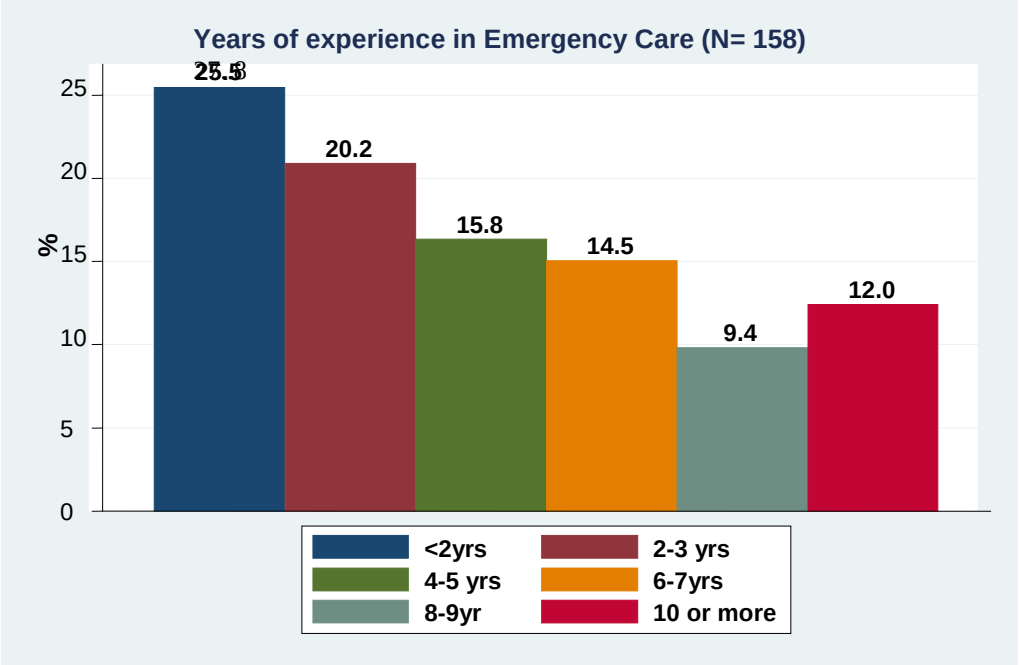

Figure 4.4 Years of experience in emergency unit (N=158)

4.2.1.6 Midwifery

In this section the 109 nurse respondents were required to indicate whether they are midwifes or not**.** As illustrated in table 4.7 and figure 4.5, 87 (79.8%) of the respondents indicated that they were registered midwives while 22 (20.1%) were not.

According to a report by the WHO (2006:8), nurses and midwives can play a critical role in emergency risk reduction. For this reason the hospital under study usually strives to post those with midwifery qualifications in the emergency departments. This explains the high number of those with midwifery qualifications.

Table 4.7 Frequency table for respondents' midwifery qualifications (n=109)

Registered midwife	Respondents	% (N=109)
No	22	20.1
Yes	87	79.8

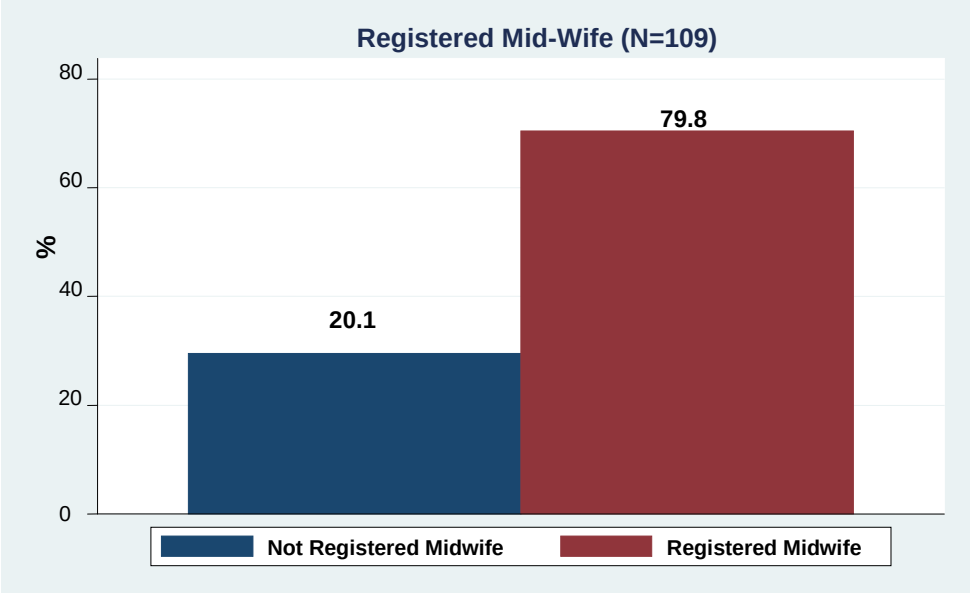

Figure 4.5 Registered midwife (N=109)

4.2.1.7 Patients managed by respondents

Table 4.8 shows the responses on the type of patients managed at the emergency units of the hospital. Only the yes answers are indicated in the table shown. The sum of the above percentages will be more than hundred because it is possible for one nurse or doctor to see more than one type of patient checking in at an emergency unit.

Of the four categories of patients that were presented in the questionnaire majority of the respondents N=152, 151 (99%) reported managing accident/trauma patients and medical emergencies equally. Out of 149 responses 139 (93%) indicated that they manage paediatric emergencies and 137 (95%) out of 144 reported attending to interventional emergencies. It is evident that a good number of the respondents attend to all the four types of emergencies that were included in the questionnaire. This implies that respondents had the necessary exposure to be able to identify what is suitable for inclusion into an emergency nurse training programme in a diverse way. The significance of this in this study is that if a programme is to be designed it should include skills that would target all the different types of patients (emergencies) that are usually attended to in the emergency environment.

Table 4.8 Type of patients managed at the emergency unit

Type of patient	N	Respondents	%
Accident/trauma patients	152	151	99
Patients with medical emergencies	152	151	99
Paediatric emergencies	149	139	93
Interventional emergencies	144	137	95

4.2.1.8 Independent decision

This section required the nurses to indicate how often they make independent decisions without involving a doctor or in the absence of the doctor. A significant majority 82(75.2%) out of the 109 nurses reported to making independent decisions at least once per (8 hours). This was followed by those who made independent decisions once per week, 14 (12.8%), once per month,5 (4.5%), once per six months,3 (2.7%) once per year,1 (0.9%).There were 4 (3.6%) who reported to have never made independent decisions, see table 4.9.

It is evident that nurses work much more independently in an emergency environment given the nature and the speed that the emergent conditions need to be dealt with. This puts them in a well informed position in this study to be able to agree or disagree with the skills in the questionnaire that should or should not be included in the emergency nurse training programme. The assumption was that those who had never made independent decisions probably misunderstood the question or were newly employed and had spent most of the first six months undergoing orientation.

Table 4.9 How often nurses make independent decisions

How often nurses make independent decisions	Respondents	% (N=109)
At least once/month	5	4.5
At least once/shift	82	75.5
At least once/six months	3	2.7
At least once/week	14	12.8
At least once/year	1	0.9
Never	4	3.6
Total	109	100.0

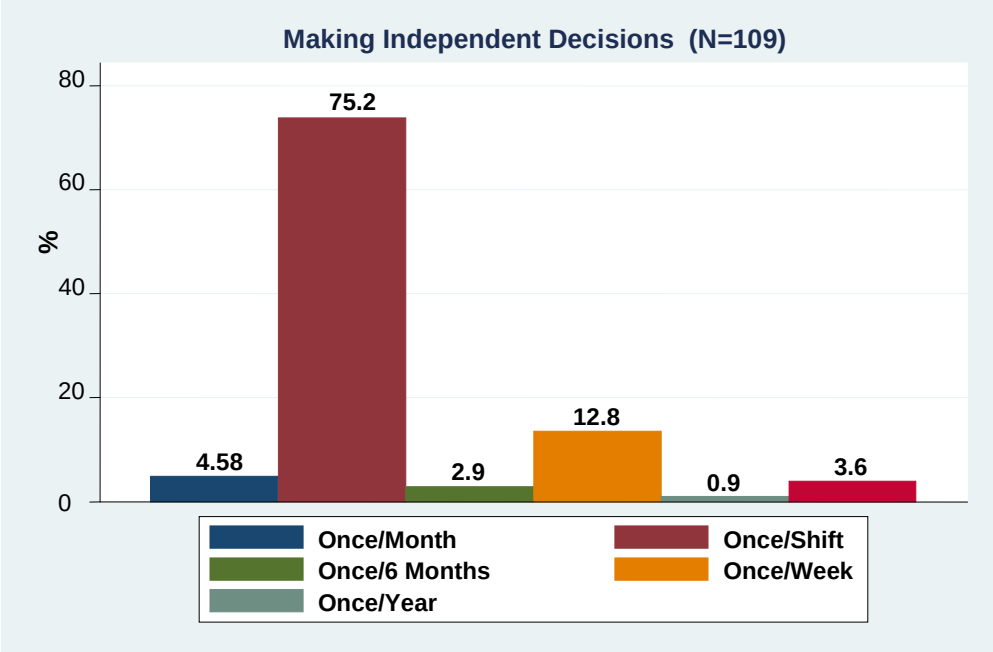

Figure 4.6 Independent decision making (N=109)

4.2.2 Section B: Respondents' agreement and disagreement of the inclusion of skills as core competencies in the emergency nurse training programme

This section attempted to ascertain the respondents' views about the inclusion of basic and advanced life support skills in an emergency nurse training programme as core-competencies. The skills that were included in the questionnaire were those that are required by the professional nurses working in an emergency environment to be able to manage life threatening situations, however not all of them may be considered as core-competencies hence the reason for this enquiry to get the views of those who are "hands" on in the emergency environments. For each skill, respondents were asked whether they Strongly Disagreed (**SD**), Disagreed (**D**), Agreed (**A**) or Strongly Agreed (**SA**) to its inclusion in the emergency nurse training programme.

The returned questionnaires were analyzed using descriptive and inferential statistics. Table 4.10 to table 4.18 also show that not all questions in this section were answered by all the respondents; therefore frequencies indicated in this table are often less than the total number (N=158) of respondents.

The number of responses based on the total number of respondents who respond to a particular skill in the questionnaire in that category has been used to calculate the percentages. This was considered to be most convenient as using the number of respondents would imply analyzing each skill.

Table 4.10 depicts the first three categories of skills in section B, namely; assessment and recording, safety within pre-hospital and safety within hospital environment. They are analysed and interpreted separately under these three areas:

4.2.2.1 Assessment and recording

For this section out of the total number of 617 responses a vast majority of 611 (99.2%) agreed to the inclusion of the items into the emergency nurse training programme as opposed to a minority of 5 (0.8%). Based on the findings it is evident that the respondents considered the skills listed under assessment and recording to be of utmost importance. Sherriff (2006:6) states the objective of assessment as being able to identify potential or actual life threats. This means that without assessment then the management of an emergency patient cannot be accurate and hence the importance of assessment. The main goal of keeping simple but complete records is to ensure continuity of care for the patient (Priscilla & Noble-Mathew 2006:64; Mistovich, Hafen, & Karren 2004:271). The responses affirm these by having the majority of the respondents agreeing to the inclusion of the skills under assessment and recording in the questionnaire into the training programme.

4.2.2.2 Safety within pre-hospital

Priscilla and Noble-Mathew (2006:61) define pre-hospital care as provision of skilled medical help at the scene of an accident. There were a total of 2090 responses to the skills that were listed in this category, a vast majority of 2056 (98.4%) agreed to the inclusion of the skills in the questionnaire while 34 (1.6%) felt some should not be included. This concurs with AHA (2006a:20) that safety for the health worker is imperative in order to avoid a second victim during emergency care.

4.2.2.3 Safety within hospital environment

Safety within hospital environment attracted a total of 936 responses out of which 912 (97.4%) agreed and 24 (2.6%) disagreed. This clearly demonstrates the importance that was attached to safety within the hospital as well (AHA 2006:[12])

Table 4.10 Assessment and recording, safety within pre-hospital and safety within hospital environment

Skills	N	Agree	Disagree
B1: Assessment and recording			
Primary assessment	154	151 (98.05%)	3 (1.95%)
Medical history taking	157	157 (100%)	0 (0%)
Secondary (head-to-head) Assessment	153	152 (99.35%)	1 (0.65%)
Recording of findings	153	151 (99.34%)	1 (0.66%)
B2: Safety within pre-hospital environmental (count (%)			
Rescue work	156	153 (98.08%)	3 (1.92%)
Extrication	156	154 (98.72%)	2 (1.28%)
Scene of safety	156	153 (98.08%)	3 (1.92%)
Safety precautions	155	155 (100%)	0 (0%)
Prioritization of patient management	156	156 (100%)	0 (0%)
Use of extrication devices	156	155 (99.36%)	1 (0.64%)
Crisis intervention	156	155 (99.36%)	1 (0.64%)
Conflict management	154	148 (96.10%)	6 (3.90%)
• Debriefing	155	146 (94.19%)	9 (5.81%)
• Counseling skills	155	146 (94.19%)	9 (5.81%)
B3: Safety within hospital environment			
Safety precautions	157	156 (99.36%)	1 (0.64%)
Triaging	157	155 (98.73%)	2 (1.27%)
Use of extrication devices	155	153 (98.71%)	2 (1.29%)
Crisis intervention	157	151 (96.18%)	6 (3.82%)
Conflict management	154	147 (95.45%)	7 (4.55%)
Debriefing	156	150 (96.15%)	6 (3.85%)
Counseling	154	149 (96.75%)	5 (3.25%)

4.2.2.4 Airway and cervical spine control

Table 4.11 shows the responses of the participant in regard to airway and cervical spine control. A total of 3431 responses were received out of which 2989 (87.1%) agreed to the skill in the questionnaire to be included in the emergency nurse training program as core-competencies while 442 (12.8%) disagreed to the inclusion of some of the skills. This means that the majority of the respondents identified the importance of the skills in this category and would want then included in the training programme.

Supportive literature confirms that the aim of management of airway is to ensure that the airway is opened and maintained patent at all times (American College of Surgeons 2005:15). The American college of Surgeons further confirm the viewpoint of the respondents with an crucial statement that protecting the spine and the spinal cord is equally important and must not be neglected. This is also concurrent with Proehl (2009:2) that the primary survey starts with assessing the airway while simultaneously maintaining the cervical spine immobilisation.

Table 4.11 Airway and cervical spine control

B4: Airway and cervical spine control		N	Agree	Disagree
1	Foreign body removal upper airway	157	157 (100%)	0 (0%)
2	Oropharyngeal airway insertion	157	156 (99.36%)	1 (0.64%)
3	Nasopharyngeal airway insertion	155	152 (98.06%)	3 (1.94%)
4	Cricoid pressure technique	157	155 (98.73%)	2 (1.27%)
5.1	Airway Intubation:			
5.2	Oesophageal-trachaeal combitute airway (combustive)	156	150 (96.15%)	6 (3.85%)
5.3	Orotracheal intubation	157	150 (95.54%)	7 (4.46%)
5.4	Nasotracheal intubation	154	140 (90.91%)	14 (9.09%)
5.5	Blind endotracheal intubation	156	96 (61.54%)	60 (38.46%)
5.6	Retrograde intubation	154	100 (64.94%)	54 (35.06%)
5.7	Percutaneous transtrachael ventilation	156	109 (69.87%)	47 (30.13%)
5.8	Needle cricothyroidotomy	156	110 (70.51%)	46 (29.49%)
5.9	Surgical cricothyroidotomy	154	85 (55.19%)	69 (44.81%)
5.10	Surgical tracheostomy	156	88 (56.41%)	68 (43.59%)
5.11	Endotracheal suctioning	157	132 (84.08%)	25 (15.92%)
5.12	Spinal immobilization	157	154 (98.09%)	3 (1.91%)
5.13	Immobilization devices:			
5.13.1	Cervical collars	157	156(99.36%)	1 (0.64%)
5.13.2	Head immobilizing devise (HID)/Ferno blocks	154	153(99.35%)	1 (0.65%)
5.13.3	Spinal board	156	153(98.08%)	3 (1.92%)
5.13.4	Scoop stretcher	156	150(96.15%)	6 (3.85%)
5.13.5	Vacuum splints	156	151(96.79%)	5 (3.21%)
5.14	Log rolling	157	155(98.73%)	2 (1.27%)
5.15	Cervical spine X-ray	156	137(87.82%)	19 (12.18%)

4.2.2.5 *Breathing and ventilation*

Table 4.12 shows the responses of the respondents with regard to breathing and ventilation, 3272 responses were received. A majority 3065 (93.6%) agreed to the inclusion of the skills and a minority of 207 (6.3%) disagreed with the inclusion of some skills in the programme. This response is supported by America College of Surgeons (2005:16) when they remark that breathing is coupled with ventilation and that there has to be adequate ventilation. Urden,Stacy and Lough (2006:567) define ventilation as

movement of air in and out of the lungs. These authors emphasise that a patent airway alone does not ensure adequate ventilation.

Table 4.12 Breathing and ventilation

B5: Breating and ventilation	N	Agree	Disagree
1 Initiate appropriate Oxygen Therapy	157	157 (100%)	0 (0%)
2 Nebulisation therapy	157	155 (98.73%)	2 (1.27%)
3 Bag valve mask ventilation	155	155 (100%)	0 (0%)
4 Anaesthesia bag ventilation (Boyles machine)	156	143 (91.67%)	13 (8.33%)
5 Confirmation of proper advanced airway placement	156	154 (98.72%)	2 (1.28%)
6. Oxygen and ventilation monitoring	157	154 (98.09%)	3 (1.91%)
6.1 Peripheral saturation monitoring	157	157 (100%)	0 (0%)
6.2 Arterial blood gas (ABG) monitoring	155	151 (97.42%)	4 (2.58%)
6.3 Exhaled or end tidal CO2 monitoring (capnograph)	156	150 (96.15%)	6 (3.85%)
6.4 Peak expiratory flow monitoring (e.g asthma patients)	157	151 (96.18%)	6 (3.82%)
7 Non invasive mechanical	156	155 (99.36%)	1 (0.64%)
8 Mechanical ventilation	157	155 (98.73%)	2 (1.27%)
9 Drawing arterial blood gas (ABG)	157	149 (94.9%)	8 (5.1%)
10 Interpretation of arterial blood gas (ABG)	156	153 (98.08%)	3 (1.92%)
11 Manipulation of treatment according to arterial blood gas (ABG)	155	144 (92.9%)	11 (7.1%)
12 Occlusive dressing for open pneumothorax (tape only three sides)	155	152 (98.06%)	3 (1.94%)
13 Emergency needle decompression of tension pneumothorax	155	150 (96.77%)	5 (3.23%)
14 Emergency placement of an underwater drain for treatment of tension pneumothorax	153	108 (70.59%)	45 (29.41%)
15 Emergency placement of an underwater drain for treatment of a pneumothorax and/haemothorax	155	98 (63.23%)	57 (36.77%)
16 Chest drainage system management	155	132 (85.16%)	23 (14.84%)
17 Chest X-ray interpretation	155	120 (77.42%)	35 (22.58%)

4.2.2.6 Circulation and haemorrhage control

Table 4.13 shows the responses pertaining to circulation and haemorrhage control skills. Most respondents 3115 (82.7%) out of a total responses of 3765 agreed while 650 (17.26%) disagreed to the inclusion of some skills. Supportive literature is provided by the American College of Surgeons (2005:16) when they state that haemorrhage is the leading preventable cause of death in the critically injured patient. This opinion is

also shared by Mistovich et al 2004:176) where the steps that must be followed in assessing for circulation during primary survey are stressed.

Table 4.13 Circulation with haemorrhage control

B6:	Circulation with Haeorrhage control	N	Agree	Disagree
1	Haemodynamic monitoring of the critically ill patient	157	152 (96.82%)	5 (3.18%)
2	Analyse 12-lead ECG: Myocardial infaction	157	155 (98.73%)	2 (1.27%)
3	Analyse ECG strips: Lethal rhythms	156	154 (98.72%)	2 (1.28%)
4	Analyse ECG strips: non-lethal	156	153 (98.08%)	3 (1.92%)
5	Control External bleeding	157	156 (99.36%)	1 (0.64%)
6	Suturing Skin Lacerations	155	137 (88.39%)	18 (11.61%)
7	Administration Rescusitation fluids	157	156 (99.36%)	1 (0.64%)
8	Military Antishoc grament (MAST) suit application	154	142 (92.21%)	12 (7.79%)
9	Intavenous Access:			
9.1	Peripheral line access	157	157 (100%)	0 (0%)
9.2	Internal Jugular	157	106 (67.52%)	51 (32.48%)
9.3	External Jugular Access	155	111 (71.61%)	44 (28.39%)
9.4	Femoral venous access	157	109 (69.43%)	48 (30.57%)
9.5	Intraosseous access	153	104 (67.97%)	49 (32.03%)
9.6	Central line access	156	84 (53.85%)	72 (46.15%)
9.7	Peripheral vein cutdown	156	82 (52.56%)	74 (47.44%)
9.8	Umbilical venous access	157	89 (56.69%)	68 (43.31%)
9.9	Umbilical arterial access	154	85 (55.19%)	69 (44.81%)
10	Emergency Pericardiocectesis for treatment of a pericardial temponade	157	91 (57.96%)	66 (42.04%)
11	EffectivePerformance of CPR (ventilation and compression)	154	149 (96.75%)	5 (3.25%)
12	Splitting of limbs	154	147 (95.45%)	7 (4.55%)
13	Splitting of pelvis	153	145 (94.77%)	8 (5.23%)
14	Limb X-ray interpretation	156	140 (89.74%)	16 (10.26%)
15	Pelvic X-ray interpretation	155	140 (90.32%)	15 (9.68%)
16	Measures to reverse fluid overload	155	139 (89.68%)	16 (10.32%)

4.2.2.7 *Disability, differential diagnosis, defibrillations and drugs*

Table 4.14 contains the responses about disability, differential diagnosis, defibrillations and drugs. Out of a total of 2916 responses the majority 2791 (95.7%) agreed and a minority of 125 (4.2%) disagreed.

Defibrillation interrupts fibrillatory electrical activity in the heart and allows normal pacemakers to produce an effective rhythm that ensures systemic perfusion (AHA 2005:112).

It is evident that defibrillation is an important part of the primary survey when the patient presents with a lethal rhythm for which this management is indicated.

While basic CPR and early defibrillation are of primary importance subsequent to cardiac arrest, drug administration is of secondary importance (AHA 2005b:112-IV 58). Drugs are known to offer theoretical benefits in selected situations, it is not yet been proved that any specific medication will improve the long-term survival rate of human beings after cardiac arrest but they are widely used for their immediate benefits.

Table 4.14 Disability, differential diagnosis, defribrillations and drugs

B7:	Disability, differential diagnosis, defribrillations and drugs	N	Agree	Disagree
1	Monitoring patients consciousness	152	152 (100%)	0 (0%)
1.1	AVPU scale	151	148 (98.01%)	3 (1.99%)
1.2	Glasgow Coma Scale	150	150 (100%)	0 (0%)
1.3	Neonatal Stress Syndrome	150	144 (96%)	6 (4%)
2	Blood Glucose Monitoring	152	150 (98.68%)	2 (1.32%)
3	Differential Diagnosis for cardiac arrest	152	150 (98.68%)	2 (1.32%)
4	Defibrillations	153	146 (95.42%)	7 (4.58%)
5	Cardiao version	152	145 (95.39%)	7 (4.61%)
6	External pacing	151	144 (95.36%)	7 (4.64%)
7	Vagal manoeuvres	151	144 (95.36%)	7 (4.64%)
8	Prescribe appropriate medication	149	140 (93.96%)	9 (6.04%)
8.1	Sedation	156	130 (83.33%)	26 (16.67%)
8.2	Analgesia	157	128 (81.53%)	29 (18.47%)
8.3	Skeletal muscle relaxation	155	121 (78.06%)	34 (21.94%)
8.4	Treatment of cardiac arrest	157	142 (90.45%)	15 (9.55%)
8.5	Correction of hypoxia	154	145 (94.16%)	9 (5.84%)
8.6	Increased Cardiac output	155	127 (81.94%)	28 (18.06%)
8.7	Correction Metabolic acidosis	156	140 (89.74%)	16 (10.26%)
8.8	Thrombolysis acute myocardial infarction	156	116 (74.36%)	40 (25.64%)
8.9	Rx of acute pulmonary oedema	155	129 (83.23%)	26 (16.77%)

4.2.2.8 Exposure and environmental control

Table 4.15 contains the responses of the respondents about exposure and environmental control. All the responses 310(100%) agreed to these skills. The rating of both the skills was 100% each. It is hence imperative that nurses and doctors felt that it is of utmost importance to include these in the training programme for the emergency nurse.

The American College of Surgeons (2005:73) exposure and control guidelines aids the assessment process in the identification of critical or additional injuries. However, this can lead to hypothermia if the environment is not properly controlled.

Smith, Bland and Mullet (2005:247) supplement the view of the respondents by stating that it is vital to the survival of the critically injured patient to maintain a homoeothermic state.

Table 4.15 Exposure and environmental control

		N	Agree	Disagree
B8:	**Exposure and environmental control**			
1	Measures to reverse hypothermia	156	156 (100%)	0 (0%)
2	Measures to reverse hypethermia	154	154 (100%)	0 (0%)

4.2.2.9 Adjuncts

This category drew 466 responses out of which 465 (99.78%) agreed and only 1 (0.2%) respondent disagreed with the inclusion of this skill into the emergency nurse training programme. The individual entries were as follows; arterial line insertion had 145 (93.5%) out of 155 responses, nasogastric tube insertion had 154 (99.3%) out of 155 responses while urine catheter insertion had 156 (100%). Thus, they were all ranked highly for inclusion into the programme.

Supportive literature by American College of Surgeons (2005:19) state that adjuncts are important when assessing and monitoring the critically ill or injured patient. Table 4.16 depicts this.

Table 4.16 Adjuncts

B9:	**Adjuncts**			
1	Arterial line insertion	155	145(93.55%)	10 (6.45%)
2	Nasogastric tube insertion	155	154 (99.35%)	1 (0.65%)
3	Urine catheter insertion	156	156 (100%)	0 (0%)

4.2.2.10 Special circumstances

Table 4.17 shows how respondents responded to the special circumstances skills. A total of 2474 responses were received out of which 2222 (89.8%) agreed to the inclusion of the skills in this category and 252 (10.18%) disagreed to some. The participation of a large number of midwives in this study adds to the validity of the results. The midwives' response to the skills under this category of special circumstances in the questionnaire is significant as they understood what the emergency nurse would require to be able to manage the midwifery emergencies in the emergency environment.

Table 4.17 Special circumstances

C1: Special circumstances	N	Agree	Disagree
1 Supportive management for obstetric emergencies	149	147 (98.66%)	2 (1.34%)
1.1 Normal delivery	155	151 (97.42%)	4 (2.58%)
1.2 Breech presentation	154	142 (92.21%)	12 (7.79%)
1.3 Prolapsed cord	156	140 (89.74%)	16 (10.26%)
1.4 Shoulder presentation	155	117 (75.48%)	38 (24.52%)
1.5 Multiple pregnancy	155	113 (72.9%)	42 (27.1%)
1.6 Placenta abruptio	156	119 (76.28%)	37 (23.72%)
1.7 Placenta previa	154	120 (77.92%)	34 (22.08%)
1.8 Premature labour	153	126 (82.35%)	27 (17.65%)
2 Supporting the rape victim	155	150 (96.77%)	5 (3.23%)
3 Collecting forensic evidence from rape victim	155	146 (94.19%)	9 (5.81%)
4. Neonatal Stress Management	155	141 (90.97%)	14 (9.03%)
5 Selecting appropriate transport mode for the critically injured patient	155	153 (98.71%)	2 (1.29%)
6 Detecting victims of child abuse	156	152 (94.44%)	4 (2.56%)
7 Detecting adult victims who are subjected to abuse	155	151 (97.42%)	4 (2.58%)
8 Poisoning and their managements	156	154 (98.72%)	2 (1.28%)

4.2.2.11 Attitudes and values of the emergency nurse

Table 4.18 contains the responses pertaining to the attitudes of the emergency nurse. A total of 2105 responses were received. 2083 (98.95%) agreed while 22 (1.05%) disagreed. All scores for all the skills in this section ranged between 100%-98%.This shows that the respondents rated the skills very highly in terms of inclusion into the emergency nurse training programme. According to Griffin (2006:292) there is a need to

develop the right attitudes in the emergency care staff as this enhances their performance and hence the patient outcome.

Table 4.18 Attitudes and Values of the emergency nurse

D1: A practicing emergency nurse should:		N	Agree	Disagree
1	Have self respect	150	150 (100%)	0 (0%)
2	Respect others	151	149 (98.68%)	2 (1.32%)
3	Respect the possessions of others	150	148 (98.67%)	2 (1.33%)
4	Respect the value of others	151	149 (98.68%)	2 (1.32%)
5	Respect the views of others	150	148 (98.67%)	2 (1.33%)
6	Respect the religious beliefs of others	150	148 (98.67%)	2 (1.33%)
7	Be aware of need for the clinical specialists to have applicable knowledge, skills, attitudes and values	150	150 (100%)	0 (0%)
8	Accept accountability for his / her decisions	150	147 (98%)	3 (2%)
9	Accept accountability for his / her activities	152	149 (98.03%)	3 (1.97%)
10	Acknowledge his/her own limitations	151	149 (98.68%)	2 (1.32%)
11	Acknowledge the importance of legislation	151	149 (98.68%)	2 (1.32%)
12	Acknowledge the importance of scope of practice	148	146 (98.65%)	2 (1.35%)
13	Acknowledge the importance of attidutes	151	151 (100%)	0 (0%)
14	Acknowledge the importance of values	150	150 (100%)	0 (0%)

4.3 CONCLUSSION

This chapter presented the results of phase two of this study. As was explained in the introduction of this chapter phase 1 served as an introduction rather than a method. For this reason, the data gathered from this phase was analysed in section 3.4.7 and is not included in this chapter.

The demographical data indicates that majority of the respondents were females 104 (65.8%). Age groups mostly represented was between 25-29 years 45; (28.5%) and most respondents were from the emergency unit 58; (37.7%). Most workers had been in the emergency care environment for less than 2 years 39; (25.5%) and the majority of these nurses were also midwifes (87; 70.5%). Patients attended to in these emergency units are mostly those with accident and those with medical emergencies both categories had equal scores of 152 (99%). It is also revealed that a majority of nurses 76 (73.8%) make independent decisions in the management of life-threatening situations.

From the analysis and interpretation of data out of a total of 22381 responses the majority 20619 (92.15%) were those that agreed to the inclusion of the skills that were in the questionnaire into the emergency nurse training programme as core competencies. A minority of the responses 1762 (7.8%) disagreed with the inclusion of some of the skills as core competencies. Concurrently, out of 147 skills that were listed in the various sections of the questionnaire,137 (93.2%) were selected as being suitable for inclusion into the emergency training programme as opposed to 10 (6.8%) which were found not to be suitable for inclusion. This also translates to a majority of the respondents n=137 (86.7%) having agreed with the inclusion of the skills listed in the questionnaire as opposed to a minority of n=10 (6.3%).

The next chapter concludes the discussions, discusses the limitations of this study and makes recommendations.

CHAPTER 5

Findings, limitations and recommendations

5.1 INTRODUCTION

This chapter presents the findings, states the limitations of the study and makes recommendations for practice and further research.

5.2 OBJECTIVES

The objectives of the study were to

- explore the historical development of emergency nursing in a level 1 hospital in Nairobi, Kenya
- describe the core competencies that should be included in an emergency nurse training programme based on the views of professional nurses and doctors working in the emergency units in the hospital
- make recommendations towards the inclusion of core competencies in the programme for the training of emergency health care nurses in Kenya

The study was conducted in three phases. Phase 1, 2 and 3 addressed first second and third objectives respectively. Phase 1 was considered introductory to the phenomenon under study**,** phase 2 served as the main investigation while in phase 3 the findings from the first two phases were used to make recommendations about the emergency nurse training programme.

5.3 FINDINGS

5.3.1 Phase 1

In phase 1 the researcher collected data by means of personal interviews with five pioneer nurses who were known to have been instrumental in the development of emergency nursing in the institution under study as well as in Kenya as a whole. These

findings were included in the literature review that provided a historical background to the development of emergency nursing in Kenya. The study found that an American CEN, who had been hospitalised in the hospital under study in 1994, started emergency nursing in Kenya in 1996 in the same hospital. Since then the hospital has continued to train emergency nurses using American and European guidelines as the NCK has yet to approve a curriculum for emergency nurse training in Kenya.

The results of phase 1 served as an introduction that elicited information which was included as part of literature reviewed about the development of emergency nursing in the institution. Other than the oral history gathered from the pioneer nurses the researcher found no literature on the development of emergency nursing in Kenya. This phase therefore enlightened the researcher about the historical background of emergency nursing in the country as a whole and offered more insight to the phenomenon under study.

5.3.2 Phase 2

In phase 2, the researcher used a structured questionnaire for data collection. Out of 172 questionnaires distributed in the five units/departments in the hospital, 158 were returned (see chapter 4, table 4.1). This was a response rate of 91.89%, which was acceptable (Burns & Grove 2007:34)

5.3.2.1 Demographic data

The respondents' demographic data included gender, age, department/unit, present professional status, years of experience in the emergency care environment, types of patients managed in the unit, making of independent decisions by nurses in the absence of the doctor, and midwifery as a qualification.

The demographic data revealed that of the respondents, 104 were females and 54 were males; 106 were between 30 and 45+ years old and 52 were between 20 and 29 and 138 worked in the emergency, critical care, and high dependency units. In the hospital, the accident and emergency units have the most nurses and doctors, and the staff in the emergency unit handles the widest range of emergencies (see chapter 4). Of the respondents, 82 had worked in emergency units between four and ten years or longer.

This gave them the experience and expertise in issues pertaining to emergency care to know what should be included in an emergency nurse training programme. In addition, the majority of the nurses indicated that they were registered midwives. The WHO (2006:8) emphasises that nurses and midwives can play a critical role in emergency risk reduction. For this reason, the hospital under study usually strives to post those with midwifery qualifications in the emergency departments. The midwives' participation in the study added to the validity of the results and their response to the section on special circumstances was significant. They understood what the emergency nurse would need to be able to manage midwifery emergencies in the emergency environment. Based on their views, then, it would be important to include the skills pertaining to supportive management for obstetric emergencies in the training programme for emergency nurses.

Of the four categories of patients presented in the questionnaire, the majority of the respondents reported managing accident/trauma and medical emergencies, followed by paediatric and interventional emergencies. This indicated that the respondents had the necessary exposure to be able to identify what was suitable for inclusion in an emergency nurse training programme. The significance of this is that if a programme is to be designed, it should include skills that would target all the different types of patients that are usually attended to in any emergency environment.

Regarding independent decision making in the absence of a doctor, the majority of the respondents reported making independent decisions in the management of life-threatening situations at least once every shift (8 hours). It was evident that nurses work much more independently in an emergency environment given the nature of and the speed at which they need to deal with emergencies. Moreover, this put them in a well-informed position to agree or disagree with the skills (core competencies) that should be included in the emergency nurse training programme.

5.3.2.2 Skills/core competencies to be included in the emergency nurse training programme as well as attitudes and values of the emergency nurse

Regarding airway and cervical spine control, the majority of the respondents agreed with the skills in the questionnaire being included in the emergency nurse training programme as core competencies (see chapter 4, table 4.11).

The questionnaire contained skills that had been validated to be what an emergency nurse requires in order to manage life-threatening situations in an emergency environment. The study found that most of the respondents (both nurses and doctors) emphasised the assessment of an emergency patient and recording of the findings.

All the respondents agreed that taking medical history, safety precautions, and prioritising patient management should be included in the programme. The respondents generally agreed that secondary (head to toe) assessment, use of extrication devices, primary assessment, and safety of the scene and rescue work should be included in the training programme.

The respondents did not rate crisis intervention or counselling as a high priority in the pre-hospital environment. Counselling was rated higher in the hospital environment. Conflict management earned a low rating in both the pre-hospital and hospital environments. This could indicate that the respondents' rationale was that in a pre-hospital situation there is not much time to attend to crisis intervention because the priority is to save lives.

Based on the responses, it is evident that the majority of the nurses and doctors agreed to most of the skills in the categories of the following:

- Breathing and ventilation
- Circulation and haemorrhage control
- Disability, differential diagnosis, defibrillation and drugs
- Exposure and environmental control
- Special circumstances and
- Attitude and values of the emergency nurse

This is consistent with the findings of Heyns (2003:[251]) that all these skills are used within the emergency care environment by the emergency nurses within the RSA context and that the majority of the respondents indicated that they be included in the emergency nurse training curriculum as core competencies. For the purposes of this study a skill that was marked disagreed was not identified as a core competency. However, this does not mean that these skills should be left out completely but should

rather be included as “good to know” information as nurses do perform them but not as frequently as the others.

The respondents rated all the skills regarding emergency nurses’ attitudes and values very highly in terms of inclusion in the emergency nurse training programme. This concurs with Griffin’s (2006:292) finding that there is a need to develop the right attitudes in emergency care staff.

5.3.3 Phase 3

Based on the findings of the first two phases but mainly of phase 2, it is recommended that all the skills required for the list given below be included in the training programme:

- Assessment and recording
- Safety within pre-hospital environment
- Safety within hospital environment
- Airway and Cervical Spine Control
- Breathing and ventilation
- Disability, differential diagnosis, defibrillation and drugs
- Exposure and environmental control
- Special circumstances
- Attitudes and values of the emergency nurse

All respondents in this study agreed that emergency placement of an underwater drain for the treatment of chest drainage as well as intravenous access through internal jugular vein, central line access and peripheral vein cut down should be included in the programme, not as core competencies but as “good to know” information since it is known that in certain circumstances nurses do perform them.

5.4 LIMITATIONS

The researcher identified three limitations in the study. The study was restricted to one hospital in Nairobi, Kenya therefore the findings cannot be generalised to other hospitals and areas in the country. The quantitative descriptive design (phase 2) also

restricted the findings to the particular context. The lack of available literature on the phenomenon of core competencies of emergency nursing in the Kenyan context gave the researcher no precedents on which to rely for her own research.

5.5 GENERAL RECOMMENDATIONS

Based on the findings, the researcher makes the following recommendations for practice and further research.

5.5.1 Practice

Little is known about the phenomenon of emergency nursing and the standard core competencies (skills) that emergency nurses should have. This study presents a Kenyan perspective of what is known about emergency nursing education and practice in Kenya. This, in turn, should form the foundation for the development of an evidence- as well as competence-based emergency nurse training programme for use in the selected hospital as well as others in Kenya.

Accordingly, the researcher recommends that:

- Administrators and educators use the core competencies identified to assist them in designing strategies to improve the work environment and educational practices related to emergency nursing.
- The findings indicate what emergency nurses “on the ground” do. The NCK should use the findings to develop guidelines on which to regulate and control both the training and practice of this speciality.
- A curriculum based on the outcomes of this study should be developed for approval by the nursing council. In doing so, the present curriculum should be reviewed in order to incorporate those skills identified as core competencies, but which are not presently included.
- Nursing administration in the hospital under study should make provision for more frequent in-service emergency training to enhance skills in BLS, ACLS, ATLS and PALS. This will keep the nurses’ skills up to date thereby enabling them to articulate their needs better.

- The hospital should make provision for regular competency testing in emergency care management to ensure quality skills application in emergencies.
- Clinical facilitators and nurse educators should create and use learning opportunities in emergency care settings for the purpose of enhancing the acquisition of skills.
- The core competencies identified should be used as a benchmark against which the emergency nurse can be held accountable.

5.5.2 Further research

Further research should be conducted on:

- Similar studies in other hospitals to allow for comparisons and generalisation.
- Patients' experience and expectations of emergency nursing.
- The skills most utilised by emergency nurses.
- Emergency nurses experience and expectations of the hospital administration.

5.6 CONCLUSION

This chapter discussed the findings of the study, described its limitations and made recommendations for practice and future research.

ANNEXURE A

UNISA Clearance Certificate

UNIVERSITY OF SOUTH AFRICA
Health Studies Research & Ethics Committee (HSREC)
Faculty of Humanities and Social Sciences
CLEARANCE CERTIFICATE

Date of meeting: St No: 3501-158-0

Project Title: Core competencies for emergency nurse training programme
Researcher: APONDO JMA (Mrs)
Supervisor/Promoter: Prof SP Hattingh
Joint Supervisor/Joint Promoter: Dr. Tanya Heyns
Department of Health Studies
Degree: Masters Dissertation

DECISION OF COMMITTEE

Approved [√] **Conditionally Approved** [ ]

Date:

Prof TR Mavundla
RESEARCH COORDINATOR: DEPARTMENT OF HEALTH STUDIES

Prof SM Mogotlane
ACADEMIC CHAIRPERSON: DEPARTMENT OF HEALTH STUDIES

PLEASE QUOTE THE PROJECT NUMBER IN ALL ENQUIRES

UNIVERSITY OF SOUTH AFRICA
Health Studies Research & Ethics Committee (HSREC)

ANNEXURE B

Application to conduct research

The Nairobi Hospital
Cecily McDonell School of Nursing
P.O BOX 30026 -010
Nairobi
24th September 2009

TO THE NAIROBI HOSPITAL
ETHICS COMMITTEE
BOX 30026-00100
GPO NAIROBI

REF:APPLICATION TO CONDUCT RESEARCH

I am Judith Apondo,a lecturer at the school of nursing in The Nairobi Hospital.

I hereby request for permission to conduct a research study with the doctors and nurses in the Accident and Emergency unit, High Dependence Unit, Critical Care Unit, Cardiac Catheterisation and School of Nursing as part of my Masters in Trauma and Emergency with the University of South Africa (UNISA). The doctors and nurses will be required to respond to questions in a structured questionnaire.

Title of the research

Emergency doctors' and nurses' views of core competencies that should be included in emergency nurse training programme.

Research aim

This study aims to identify and describe the core competencies that should be included in the emergency nurse training programme as viewed by the emergency nurses and doctors working in the emergency units.

Instruments for data collection

A structured questionnaire will be used that can be completed by the respondents on their own, but guidance will be available from the researcher and the research assistants as necessary. Sufficient details are included in the text under research orientation.

Ethical considerations

All ethical considerations that apply to this study shall be observed with more details to the following ethical issues:

Permission shall be sought from the ethical committees of the institution in which the research will be carried out.

Voluntary participation: A signed informed consent will be required before participation from each participant.

Risk of harm. There is no risk of harm anticipated whatsoever, psychological harm will be guarded against by ensuring confidentiality and anonymity.

The supervisor of this study

Professor SP Hattingh
Lecturer at the University of Pretoria
Department of Nursing Science

Thank you.
Judith M.A.Apondo (**RESEARCHER)**

ANNEXURE C

Approval by the Nairobi Hospital research and ethics committee

THE NAIROBI HOSPITAL

1st October 2009

Judith M. A. Apondo
Nurse Lecturer
Researcher/Student No. 3501158-0
P.O Box 56808- 00200
NAIROBI.

Dear Judith,

RE: RESEARCH PROPOSAL: EMERGENCY NURSES' PERCEPTION OF CORE COMPETENCIES THAT SHOULD BE INCLUDED IN ACCIDENT AND EMERGENCY NURSE TRAINING CURRICULUM

The Education Committee has approved your study and permission has therefore been granted for you to conduct a research study with the nurses in the Accident & Emergency Unit, High Dependency Unit, Critical Care Unit, Cardiac Catheterization and School of Nursing.

Please forward the final report to the committee upon completion of your study.

In case you intend to publish your findings, you are requested to apply to the committee for approval.

Wishing you well in your study.

Dr. Omondi-Ogutu
Chairman
Education & Research Committee

ANNEXURE D

Cover letter to participants and informed consent

REQUEST FOR CONSENT TO PARTICIPATE IN A RESEARCH

Title of the research

Emergency nurses' and doctors' views of core competencies that should be included in emergency nurse training programme.

Dear Colleagues

The above mentioned study is to be carried out in your department/unit. Permission to conduct this research in your department has been granted by the relevant authorities in the hospital. This study aims at identifying and describing the core competencies that should be included in the emergency nurse training programme as viewed by emergency nurses and doctors working in the emergency units.

I am writing to request you to volunteer as a participant. All registered nurses and doctors working in the following departments/units are eligible to take part in this study as well as nurses who lecture in emergency science in the school of nursing:

- High Dependence Unit,
- Cardiac catheterisation Laboratory,Accident
- Emergency Unit/department
- Critical Care Unit.
- School of nursing.

Detailed orientation as to what the research is about and what is expected of you as a participant will be provided.

This study will require you to fill a questionnaire which will take between 15-20 minutes, this being the case, no physical harm whatsoever is anticipated. Anonymity will be observed hence you will not be required to include any form of identity on the questionnaire. Your answers/choices and scores will therefore be confidential and anonymous and cannot be linked to you.

If you agree to participate in this study, please fill in the required details below. This consent form will not be attached to the questionnaire or on your work documents.

Thank you

Judith M.A Apondo (**Researcher**)

CONSENT FORM

NAME …….

Staff No…….

Agree to participate in the above mentioned research. I do certify that the purpose of this study has been fully explained to me. I am aware that my participation is voluntary.

Signature……Date……..

ANNEXURE E

Data collection instrument: Structured questionnaire

INSTRUCTIONS FOR COMPLETING THE QUESTIONNAIRE

Answer each question by indicating your chosen option with a (tick) or a circle in the appropriate box/number or fill in the information asked for in the space provided at the end of a section.

Please remember that your responses, recommendations and suggestions are very important.

If you require any assistance regarding this questionnaire you are welcome to contact Mrs Judith Apondo on **0723-468-996 or by e-mail judithapondo@nbihosp.org**

OR

jumapo2003@yahoo.com

The questionnaire takes approximately **15-20** minutes to complete.

The questionnaire consists of **four (4)** sections and you are **requested** to complete **ALL** the sections

Section A- Demographical information.

Section B- Basic and advanced life support skills essential for the emergency nurse in life- threatening situation

Section C- Special circumstances in obstetrics, rape, child and adult abuse and poisoning.

Section D- Essential attitudes and values for the emergency nurse.

QUESTIONNAIRE

Section A – Demographical information

A1: What is your **gender?**

1	Female	
2	Male	

A2: What is your **age?**

1	Younger than 25 years	
2	25 – 29 years	
3	30 – 34 years	
4	35 – 39 years	
5	40 – 44 years	
6	45 years or older	

A3: In which **department are** you currently working?

1	Critical Care Unit	
2	High Dependency Unit	
3	School of Nursing-Lecturer	
4	Cardiac Catheterisation Laboratory	
5	Accident and emergency unit	

A4: Indicate your **present professional status**

1	Emergency nurse (trained)	
2	Emergency nurse (trainee)	
3	Emergency nurse (lecturer)	
4	Critical Care Nurse (trained)	
5	Critical Care Nurse (trainee)	
6	Critical Care Nurse (lecturer)	
7	Doctor in the emergency unit	

A5: How many years of **experience** do you have in the emergency care environment?

1	6 months- 2 years	
2	2 – 3 years	
3	4 – 5 years	
4	6 – 7 years	
5	8 – 9 years	

6	10 years or more	

A6: What **types of patients** are managed in your emergency care environment? (Tick under either Yes or No as applicable to you.)

	Types of patients	**Yes**	**No**
1	Patients involved in accidents/trauma		
2	Patients with medical emergencies		
3	Paediatric emergencies		
4	Occupational emergencies		
5	Interventional emergencies		

A7: How often do you make **independent decisions** in the absence of a doctor in your emergency care environment?

1	Never	
2	At least once/year	
3	At lest once/six months	
4	At least once/month	
5	At least once/week	
6	At least once/shift	

A8: Are you a registered **midwife**

1	Yes	
2	No	

Section B- BASIC AND ADVANCED LIFE SUPPORT SKILLS THAT ARE ESSENTIAL FOR AN EMERGENCY NURSE IN THE MANAGEMENT OF LIFE-THREATENING SITUATIONS

Please indicate to what extent you personally agree or disagree with the inclusion of the following skills as core competencies in the programme for emergency nurse training by using the following four-point scale:

(1): Strongly disagree (SD)
(2): Disagree (D)
(3): Agree (A)
(4): Strongly agree (SA)

B	**Skills**	**SD**	**D**	**A**	**SA**

B1	Assessment and recording				
1	Primary assessment	1	2	3	4
2	Medical history taking	1	2	3	4
3	Secondary (head-to-toe) assessment	1	2	3	4
4	Recording of findings	1	2	3	4

B2	Safety within pre-hospital environment				
1	• Rescue work	1	2	3	4
2	• Extrication	1	2	3	4
3	• Scene safety	1	2	3	4
4	• Safety precautions	1	2	3	4
5	• Prioritization of patient management	1	2	3	4
6	• Use of extrication devices	1	2	3	4
7	• Crisis intervention	1	2	3	4
8	• Conflict management	1	2	3	4
9	• Debriefing	1	2	3	4
10	• Counseling skills	1	2	3	4

B3	Safety within hospital environment				
1	• Safety precautions	1	2	3	4
2	• Triaging of patients	1	2	3	4
3	• Use of extrication devices	1	2	3	4
4	• Crisis intervention	1	2	3	4
5	• Conflict management	1	2	3	4
6	• Debriefing	1	2	3	4
7	• Counseling skills	1	2	3	4

B4	Airway and cervical spine control				
1	• Foreign body removal ; upper airway	1	2	3	4
2	• Oropharyngeal airway insertion	1	2	3	4
3	• Nasopharyngeal airway insertion	1	2	3	4
4	• Cricoid pressure technique (Sellick's maneuvre)	1	2	3	4
5	• Airway intubation:				
5.1	Laryngeal mask airway (LMA)	1	2	3	4
5.2	Oesophageal-trachaeal combitube airway (combitube)	1	2	3	4
5.3	Orotracheal intubation	1	2	3	4
5.4	Nasotracheal intubation	1	2	3	4
5.5	Blind endotracheal intubation	1	2	3	4
5.6	Retrograde intubation	1	2	3	4
5.7	Percutanoeus transtracheal ventilation	1	2	3	4
5.8	Needle cricothyroidotomy	1	2	3	4
5.9	Surgical cricothyroidotomy	1	2	3	4

5.10	Surgical tracheostomy	1	2	3	4
5.11	Endotracheal suctioning	1	2	3	4
5.12	Spinal immobilization	1	2	3	4
5.13	Immobilization devices:				
5.13.1	▪ Cervical collars	1	2	3	4
5.13.2	▪ Head immobilizing devise (HID\Ferno blocks)	1	2	3	4
5.13.3	▪ Spinal board	1	2	3	4
5.13.4	▪ Scoop stretcher	1	2	3	4
5.13.5	▪ Vacuum splints	1	2	3	4
5.14	• Log rolling	1	2	3	4
5.15	• Cervical spine X-ray	1	2	3	4

B5	• **Breathing and Ventilation**				
1	• Initiate appropriate oxygen therapy	1	2	3	4
2	• Nebulisation therapy	1	2	3	4
3	• Bag-valve-mask ventilation	1	2	3	4
4	• Anaesthesia bag ventilation (Boyles machine)	1	2	3	4
5	• Confirmation of proper advanced airway placement	1	2	3	4
6	• Oxygen and ventilation monitoring	1	2	3	4
6.1	Peripheral saturation monitoring	1	2	3	4
6.2	Arterial blood gas (ABG) monitoring	1	2	3	4
6.3	Exhaled or end-tidal CO2 monitoring (capnograph)	1	2	3	4
6.4	Peak expiratory flow monitoring (e.g. asthma patients)	1	2	3	4
7	• Non-invasive mechanical ventilation	1	2	3	4
8	• Mechanical ventilation	1	2	3	4
9	• Drawing an arterial blood gas (ABG) sample	1	2	3	4
10	• Interpretation of arterial blood gas (ABG)	1	2	3	4
11	• Manipulation of treatment according to arterial blood gas (ABG)	1	2	3	4
12	• Occlusive dressing for open pneumothorax (tape only three sides)	1	2	3	4
13	• Emergency needle decompression of tension pneumothorax	1	2	3	4
14	• Emergency placement of an underwater drain for treatment of tension pneumothorax	1	2	3	4
15	• Emergency placement of an underwater drain for treatment of a pneumothorax and/ or haemothorax	1	2	3	4
16	• Chest drainage system management	1	2	3	4

17	• Chest X-ray interpretation	1	2	3	4

B6	**Circulation with haemorrhage control**				
1	• Haemodynamic monitoring of the critically ill patient	1	2	3	4
2	• Analyse 12-lead ECG: myocardial infarction	1	2	3	4
3	• Analyse ECG strips : lethal rhythms	1	2	3	4
4	• Analyse ECG strips : non-lethal	1	2	3	4
5	• Contol external bleeding	1	2	3	4
6	• Suturing of skin lacerations	1	2	3	4
7	• Administration of rescusitation fluids	1	2	3	4
8	• Military Anti-shoc garment (MAST) suit application	1	2	3	4
9	• Intavenous access :				
9.1	Peripheral line access	1	2	3	4
9.2	Internal jugular venous access	1	2	3	4
9.3	External jugular access	1	2	3	4
9.4	Femoral venous access	1	2	3	4
9.5	Intraosseous access	1	2	3	4
9.6	Central line access	1	2	3	4
9.7	Peripheral vein cutdown	1	2	3	4
9.8	Umbilical venous access	1	2	3	4
9.9	Umbilical arterial access	1	2	3	4
10	• Emergency pericardiocectesis for treatment of a pericardial tamponade	1	2	3	4
11	• Effective performance of CPR (ventilation and compression)	1	2	3	4
12	• Splitting of limbs	1	2	3	4
13	• Splitting of pelvis	1	2	3	4
14	• Limb X-ray interpretation	1	2	3	4
15	• Pelvic X-ray interpretation	1	2	3	4
16	• Measures to reverse fluid overload	1	2	3	4

B7	**Disability, differential diagnosis, defibrillations and drugs**				
1	• Monitoring patient's level of consciousness	1	2	3	4
1.1	AVPU scale	1	2	3	4
1.2	Glasgow coma scale	1	2	3	4
1.3	Neonatal stress syndrome	1	2	3	4
2	• Blood glucose monitoring	1	2	3	4
3	• Differential diagnosis for cardiac arrest(correctable causes)	1	2	3	4
4	• Defibrillations	1	2	3	4
5	• Cardio version	1	2	3	4
6	• External pacing	1	2	3	4

7	• Vagal maoneuvres	1	2	3	4
8	• Prescribe appropriate medication :	1	2	3	4
8.1	Sedation	1	2	3	4
8.2	Analgesia	1	2	3	4
8.3	Skeletal muscle relaxation	1	2	3	4
8.4	Treatment of cardiac arrest	1	2	3	4
8.5	Correction of hypoxia	1	2	3	4
8.6	Increased cardiac output with the use of positive inotropes	1	2	3	4
8.7	Correction of metabolic acidosis	1	2	3	4
8.8	Thrombolysis in acute myocardial infarction	1	2	3	4
8.9	Treatment of acute pulmonary oedema	1	2	3	4

B8	**Exposure and environmental control**				
1	• Measures to reverse hypothermia	1	2	3	4
2	• Measures to reverse hyperthemia	1	2	3	4

B9	**Adjuncts**				
1	• Arterial line insertion	1	2	3	4
2	• Nasogastric tube insertion	1	2	3	4
3	• Urine catheter insertion	1	2	3	4

	Skills	SD	D	A	SA
C1	**Special circumstances**				
1	• Supportive management for obstetric emergencies	1	2	3	4
1.1	Normal Delivery	1	2	3	4
1.2	Breech presentation	1	2	3	4
1.3	Prolapsed cord	1	2	3	4
1.4	Shoulder presentation	1	2	3	4
1.5	Multiple pregnancy	1	2	3	4
1.6	Placenta abruptio	1	2	3	4
1.7	Placenta previa	1	2	3	4
1.8	Premature labour	1	2	3	4
2	• Supporting the rape victim	1	2	3	4
3	• Collecting forensic evidence from the rape victim	1	2	3	4
4	• Neonatal stress management	1	2	3	4
5	• Selecting an appropriate transport mode for the critically ill or injured patient.	1	2	3	4
6	• Detecting victims of child abuse	1	2	3	4
7	• Detecting adult victims who are subjected to abuse	1	2	3	4
8	• Poisoning and managements	1	2	3	4

C2	**Please feel free to add any remarks** …….. …….. …… …… …… …… …… …… …… …… ……

Section D- Essential attitudes and values for the emergency nurse.

1.1 Indicate to what extent you personally agree or disagree about the inclusion of the following statements in emergency nurse training programme:

(1): Strongly disagree (SD)
(2): Disagree (D)
(3): Agree (A)
(4): Strongly agree (SA)

D1	A practicing emergency nurse should:	SD	D	A	SA
1	• have self respect	1	2	3	4
2	• respect others	1	2	3	4
3	• respect the possessions of others	1	2	3	4
4	• respect the values of others	1	2	3	4
5	• respect the views of others	1	2	3	4
6	• respect the religious beliefs of others	1	2	3	4
7	• be aware of the need for the clinical specialists to have applicable knowledge, skills, attitudes and values	1	2	3	4
8	• accept accountability for his/her decisions	1	2	3	4
9	• accept accountability for his/her activities	1	2	3	4
10	• acknowledge his/her own limitations	1	2	3	4
11	• acknowledge the importance of legislation	1	2	3	4
12	• acknowledge the importance of scope of practice	1	2	3	4
13	• acknowledge the importance of attitudes	1	2	3	4
14	• acknowledge the importance of values	1	2	3	4

D2 If you would like to add an attitude and/or value not included in the above list please specify and indicate to what extent you personally agree or disagree with its inclusion in the training programme.

A practicing emergency nurse should:	SD	D	A	SA
• ……..	1	2	3	4
• ……..	1	2	3	4
• ……..	1	2	3	4
• ……..	1	2	3	4
• ……..	1	2	3	4
• ……..	1	2	3	4
• ……..	1	2	3	4

D3	**Other suggestions and/or comments will be appreciated** ……

Thank you for your participation!

ANNEXURE F

Letter from statistician

Frankline Magaki Onchiri
Biostatistician

P.O. Box 13050-00100; GPO-Nairobi
Tel: 0712109889

December 22nd 2009

TO WHOM IT MAY CONCERN

I, Frankline Magaki of P.O. Box 13050-00100; GPO-Nairobi
Tel: 0712109889
herewith declare
that I rendered professional biostatistical services in December 2009 to

Judith M.A. Apondo

Analyszing Data for her master's dissertation,
which she then submitted as a requirement for the
Degree of Master of Arts
in the subject of
Health Studies (Trauma and Emergency)

under the supervision of

Professor Susan Hattingh D. Litt et Phil (UNISA); MA (Cur) (UNISA); BA (Cur) Hons (UNISA)
of the Department of Health Studies of the University of South Africa.

I further declare that the content of the research study that I have seen
has remained, and will remain, strictly confidential and anonymous,
and that it therefore complies with all the ethical requirements of her research.

Frankline Magaki Onchiri

REQUEST FOR CONSENT TO PARTICIPATE IN A RESEARCH

Title of the research

A study to identify core competencies that should be included in the emergency nurse training programme: Based on nurses and doctors views

Dear Colleagues

The above study is to be carried out in your department/unit. Permission to conduct the study in your department has been granted by the relevant authorities in the hospital. This study aims to identify and describe the core competencies that should be included in the emergency nurse training programme as viewed by emergency nurses and doctors working in the emergency units.

I am writing to ask you to volunteer as a participant. All registered nurses and doctors working in the following departments/units are eligible to take part in this study as well as nurses who lecture in emergency science in the school of nursing:

- High Dependency Unit
- Cardiac Catheterisation Laboratory
- Emergency Unit/Department
- Critical Care Unit
- School of Nursing.

Detailed orientation as to what the research is about and what is expected of you as a participant will be provided.

This study will require you to complete a questionnaire which will take between 15 and 20 minutes, and no physical harm whatsoever is anticipated. Anonymity will be assured

since you will not be required to include any form of identity on the questionnaire. Your answers/choices and scores will therefore be confidential and anonymous and cannot be linked to you.

If you agree to participate in this study, please fill in the required details below. This consent form will not be attached to the questionnaire or your work documents.

Thank you

Judith MA Apondo (Researcher)

CONSENT FORM

NAME ……

Staff No…….

I agree to participate in the above-mentioned study. I certify that the purpose of this study has been fully explained to me. I am aware that my participation is voluntary.

Signature……Date……..