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Registered nurses' handover practices in emergency care units

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CHAPTER ONE

OVERVIEW OF THE RESEARCH STUDY

1.1 Introduction

Handover is an internationally recognised practice carried out by healthcare professionals. Handover refers to the procedure of transferring a patient, as well as the patient's data, from one healthcare professional to another. Effective handover is more than just an exchange of information. It forms a vital link in the continuity of care chain, with regard to decision-making, patient treatment and ensuring patient safety.

Due to significant international staff shortages, the nursing profession is under strain. However, developing countries are affected significantly with limited healthcare resources, especially in specialised units. This is also the case in South Africa, especially in specialised areas such as emergency and critical care units. According to Scribante and Bhagwanjee's (2007:1316), national study undertaken in both private and public sector hospitals, there is a total of "4168 ICU and high care beds in South Africa that are served by 4584 professional nurses." As a result, there is less than one nurse per patient for every 12 hour shift. To ensure an adequate nurse to patient ratio, South Africa would require approximately 8340 nurses to just cover the national demands of the intensive care units (ICU). Scribante and Bhagwanjee (2007:1316) state that, of the 4584 nurses working in these units, "only 25.6% of nurses working in ICU were ICU-trained and of this group, 3.8% were trained as

neonatal ICU nurses, 42.8% had less than five years nursing experience and only 5.7% had more than twenty years nursing experience."

To date, a number of international studies (Lally, 1999; Payne, Hardy and Coleman., 2000; Manias and Street, 2000; Bruce and Suserud, 2005; Jenkin, Abelson-Mitchel and Cooper, 2007; McFetridge, Gillespie, Goode, et al., 2007; Meissner, Hasselhorn, Estryn-Bahar, et al., 2007; Ye, Taylor, Knott, et al., 2007; Ferran, Metcalfe and O'Doherty, 2008) have been undertaken regarding handover principles and practices within emergency and intensive care units. In South Africa, specialist nurses who are either ICU or trauma and emergency qualified, work in the emergency care units. Therefore, both of these qualifications fall under the broad category of critical care specialist nurses. This can be supported by the South African Nursing Council regulations, which stipulate that that clinical nurse specialists, fall under the category of "Medical and Surgical Nursing" according to the Nursing Act No. 50 of 1978, Regulation 212, as amended. In view of the fact that there are often not enough ICU beds available in the intensive care units, critically ill ventilated patients spend a significant period of time in the emergency care units being nursed by specialist as well as non-specialist nurses. According to Scribante and Bhagwanjee's research (2007:1316) the rationale for assessing all registered nurses, is because there is a limited number of specialist nurses working in emergency care units. Thus the so called "cross-over" is occurs, which means that specialist nurses are handing over to non-specialist nurses and vice-versa. Due to this taking place, there is a necessity to perform research regarding their handover practices; as the handover affects the continuity of care.

Therefore, the purpose of this study was to assess and describe the handover practices of registered nurses working in emergency care units at eight Gauteng private sector hospitals (N = 8) and to determine their opinion of current handover practices with regard to contents, sequence, frequency and usefulness of current handover practices. Furthermore, this study determined if there is a difference in opinions between specialists versus non-specialist registered nurses regarding current handover practices in emergency care units.

1.2 Background to the Study

The “handover” has become a ritual in daily nursing practice, according to Philpin (2006:92), encompassing interdisciplinary collaboration, which supports communication within the nursing team. Kerr (2002:126) defines a structured handover as a “form of communication encompassing both verbal and written pertinent information”. According to Hill (2003:235), the more effective a critical care nurse is in the skill of “handing-over” a patient, the greater their contribution is in effective continuity of care.

One of the key findings evident in the study of McFetridge, et al. (2007:264 - 265), was that “experience and the attitude” of the nurses handing over the patient as well as those receiving the patient play an important role. They compared the handover principles and practices to a game, therefore a continuation of a process, by using the example of “handing over of a baton in a race”. Thus, the goal of the handover is to ensure the best possible outcome for the patient.

Medical and nursing professionals are well aware that the race to save a patient’s life is a race against time. A win or lose situation. There is no other profession where the

stakes are so high. If doctors or nurses make mistakes with regard to judgement or patient care, the result may influence the patient prognosis. Hence, any imperative information that was not included in the verbal and written handover, for example an allergy to a specific medication, could have a detrimental outcome for the patient.

In the emergency care unit, the life and death decisions that the multidisciplinary team have to make are based on the information that the nurses give them. Manias and Street (2001:133) suggest that medical consultants and junior doctors often relied on “nurses’ specialised knowledge and experience” to aid them in making a medical decision that would affect the continuity of patient care. Similarly, Hill (2003:235) suggests that nurses can offer a lot with regard to patient treatment and health care plans; consequently decisions that will affect the continuity of care should involve the whole multidisciplinary medical team and not be made unilaterally. In other words, decisions should not be made by doctors only, but by the whole team including nurses. Nurses usually communicate with doctors during ward rounds. Therefore ward rounds play a pertinent role regardless of the clinical setting in the multi-professional decisions made regarding treatment and care.

Manias and Street (2000:375) reiterate in their study that the handover is a “complex form of communication,” which encompasses not only historical, but also social elements with regard to communication. A crucial factor in providing effective continuity of care is the content of the handover, in other words, what is being said and how it is being said. According to Jenkin, et al., (2007:144) information contained in the handover should be precise and contain important information that is pertinent to effective patient management and care. Another factor that may affect the quality of the continuity of care is where and when the handover took place, as

well as the type of handover. If the quality of the handover is sub-standard, the chain of the continuity of care is broken. If this was the case, then the quality of subsequent patient care is compromised.

The principal purpose of the bedside handover is to provide psychological and physical safety, thus the verbal, non-verbal and written components of the handover ensure patient safety and continuity of care. Manias and Street (2000:375) suggest that the “global handover” serves predominantly for shift leaders to co-ordinate and assign nurses to a patient, thus making it difficult for part-time nurses to orientate themselves with all the patients in the critical care units. On the other hand the “bedside handover” was more focused on the patient’s individual care needs, which plays a more integrated part in assuring the continuity of care. On the contrary, Broekhuis and Veldkamp (2007:109) articulate in their research study that “the bedside handover appears to be the weak link in the chain,” as sometimes less experienced nurses are not sure which information should be contained in an effective handover, in order to maintain the continuity of care.

Difficulties may be experienced in providing continuity of care, due to lack of education, knowledge, language barriers, training and understanding. Hill (2003:235) suggests that the ability of a nurse to effectively contribute to the patient’s care is influenced by that nurse’s experience and knowledge. This can be supported by Jenkin, et al., (2007:144), who suggest that importance and comprehensiveness with regard to performing the handover effectively, increases with seniority. Thus the handover plays a role in multidisciplinary communication, decision making and patient treatment, ensuring patient safety and maintaining the continuity of care. The function of the handover is communicating and conveying essential information to

nurses, from one shift to another. As a result, pertinent changes that took place within the last 12 hours will have an effect on what may take place within the next 12 hours. Moreover, it aids in the nurse predicting and anticipating what strategies need to be implemented in order to provide optimal patient management and care. Therefore, the handover plays the strongest link in the continuity of care chain. Hence, the handover can make the difference between life and death!

1.3 Problem Statement

The quality of handover practices may be compromised due to staff and specialist skills shortages within the nursing profession, as only a quarter according to Scribante and Bhagwanjee's study (2007:1316) of the nurses working in intensive care units are ICU qualified. It follows that the majority of registered nurses are not qualified in a specialty. Williams and Clark (2001:106 – 115) study states that at least 50% of nurses on specialised units should hold a post graduate specialist qualification, but ideally 75% should be specialist qualified. Scribante and Bhagwanjee's (2007:1317 - 1318) study state that South Africa faces challenges regarding an acute shortages of specialist qualified nurses with appropriate experience, which directly influences patient mortality and morbidity. In support, Philpin (2006:92) states that specialised knowledge and the appropriate experience enable a nurse to safely provide the continuity of specialised care. Thus non-specialist nurses have limited specialised knowledge and lack the necessary experience to provide the minimum required standard of specialized care. This may lead to incomplete and inconsistent handover practices, thus affecting the continuity of specialised care.

In recent years there has been a substantial increase in patient volumes requiring intensive care treatment. Intensive care units have a limited number of beds available and as a consequence many critically ill patients are spending a longer time in the emergency care units. Therefore, handovers of intensive care patients are taking place within emergency care units, which already have a significant patient load as well as patient turnover. Thus, the quality of the handover in the emergency care setting regarding the intensive care patient may be compromised.

Due to staff shortages within the nursing profession, especially in specialised areas like emergency care units, so called “cross-over” may be occurring. In other words ICU or trauma and emergency clinical nurse specialists may be handing over to non-specialist ICU or trauma and emergency nurses and vice versa. The consequence of this might lead to a breakdown in communication, which in turn could result in a loss of pertinent information that may very well play a crucial role in affecting the patients’ prognosis.

1.4 Purpose and Objectives of the Study

The purpose of this study was to determine the handover practices of registered nurses working in emergency care units, in private sector hospitals, in Gauteng, South Africa.

The objectives of the study were to:

- Determine the registered nurses’ opinion of information content on documentation used in current handover practices of registered nurses

- Determine the views and opinions of registered nurses regarding current handover practices with reference to the sequence, frequency and usefulness of handovers

- Determine whether there is a difference in opinions of reported handover practices between specialist versus non – specialist registered nurses

1.5 Researcher's Assumptions

South Africa is currently facing a number of challenges within the nursing profession, which may have an effect on the content as well as the structure of the handover procedure. According to the South African Nursing Council statistics for 2008 on nursing manpower there are only 107 978 registered nurses to 48 687 300 population. Thus the South African resource of registered nurses to inhabitants is 1 registered nurse to every 451 citizens. One of the most predominant problems within the nursing profession in South Africa is the shortage of registered nurses; especially specialist registered nurses. In other words those registered nurses who are in possession of a post basic qualification in either critical care nursing or trauma and emergency nursing. Registered nurses are working in emergency care units, which are nationally short staffed in both the public as well as the private sector, exposes these professionals to an environment with enormously high levels of stress. This was supported by Scribante and Bhagwanjee's (2007:1318) study, which found that South Africa has an acute shortage of specialist qualified nurse; in addition to this they also say that nurses are often tired, stressed, over-worked and unhappy in their working environment. In addition, registered nurses are expected to perform under

extreme mental and physical pressure in order to cope with an enormously higher caseload of critically ill or injured patients.

Another contributing factor that is influencing the staff shortages within emergency care units, are the working conditions with long shifts, which are in excess of twelve hours. Furthermore, registered nurses are required to work a large number of overtime hours to cover the staffing shortfalls. In conjunction with the previous statement, registered nurses are still being poorly paid for their highly skilled services within public sector hospitals, in spite of Occupation Specific Dispensation (OSD). The OSD was implemented by the Government in 2008, in order to upgrade nurses salaries based on their qualifications and years of experience. According to the South African Department of Health (15/01/2008), the proposed OSD starting salary for a registered nurse was in the region of R8840.50 (approximately $1148.12 or €830.87) per month. The long working hours and low salaries could leads to burnout of these highly skilled professionals, who may seek career opportunities in other professions or in other countries. This is supported by Scribante and Bhagwanjee's (2007:1317 - 1318) study which found that immigration of nurses, due to dissatisfaction and low morale, is one of the reasons that accounts for the acute shortage of nurses in South Africa. Currently, there is an extremely high level of registered nurses, in particular with a specialist qualification in critical care or trauma and emergency, who tend to be immigrating to countries such as Australia, the United Arab Emirates, the United States of America and the European Union. According to the Citizen newspaper (05/09/2000), 300 registered nurses leave South Africa per month. According to South African Nursing Council Verification and Transcript Statistics (2003 - 2008 records), approximately 1733 registered nurses left

South Africa for overseas nursing jobs per annum. Thus, it is assumed that in order to meet the shortfall of registered nurses, many hospitals (especially with in the private sector) tend to send their staff nurses (enrolled nurses) on so-called “bridging courses” in order to upgrade these staff members to registered nurses. Accordingly a proportion of registered nurses in current practice did not complete the general four-year nursing degree or diploma of higher education. Another contributing factor that may affect the content and sequence of handover practices is that most of these registered nurses working in emergency care units have limited clinical practice experience. Perhaps one of the major concerns affecting handover principles and practices is that a very small number of registered nurses are clinical nurse specialists, due to the possible lack of postgraduate education. Scribante and Bhagwanjee’s (2007:1318) study which found that the quality of the basic nursing education is questionable and that there is no effective recruitment as well as retention strategies in place to promote more specialist qualified nursing posts. It would be safe to assume that the current handover practices and sequence of the handover, is perhaps lacking when compared to Australian, European and North American nursing professions.

1.6 Operational Definitions

1.6.1 Emergency Care Units

A specialised unit within a hospital, where critically ill and injured patients who require close monitoring, advanced life support, intensive medical treatment and critical care nursing are cared for in the emergency admission stage. In the literature (Jenkin, et al. 2007:141 – 142) it is defined as a specialised unit that treats patients

from all sectors of society, of any age, that arrive with many different acute or chronic illnesses or acute major or minor injuries. For the purpose of this study all emergency care units in the private sector hospitals, where the study will take place, will be utilised. This is also known as an ER (Emergency Room).

1.6.2 Registered Nurse

For the purpose of this study a registered nurse, is a nurse who has completed a tertiary education programme in general nursing. There are four possible ways of obtaining the professional status of a registered nurse: by completing a four-year diploma or four-year degree in nursing science; a three-year diploma in general nursing; by completing a two-year bridging course from staff nurse to registered nurse; or by converting a foreign registered nurse qualification to the South African equivalent. They are registered with the South African Nursing Council in the category of a Registered Nurse (RN) according to the rules and regulations as set out in the Nursing Act N0 50 of 1978 as amended.

1.6.3 Specialist Nurse

For the purpose of this study a specialist nurse is a registered nurse, who has an additional qualification in intensive care or trauma and emergency nursing, and registered with the South African Nursing Council as a critical care or trauma nurse, according to the rules and regulations as set out in the Nursing Act N0 50 of 1978, regulation 212, as amended. Specialist registered nurses are also known as clinical nurse specialists.

1.6.4 Student Specialist Nurse

For the purpose of this study a student specialist nurse is a registered nurse, who is currently enrolled in an educational programme for an additional qualification, recognised by the South African Nursing Council in intensive care or trauma and emergency nursing.

1.6.5 Handover

Handover is an internationally recognised practice carried out by healthcare professionals, which refers to the procedure of transferring a patient and their data from one healthcare professional to another. In order to conduct this study, an audit of a private sector hospital groups' handover procedures and practices was undertaken using a self-administered questionnaire as a data collection instrument.

1.6.6 Private Sector Hospital

Private sector hospital is a hospital that is privately owned by a group of shareholders. Thus services rendered to a patient must be paid by the patient at a private rate. A private sector hospital does not receive funding from the government and has a reserved right of admission. In the care of a life treating emergency, were a patient is unable to pay for full services rendered. The private hospital staff is required to stabilise a patient and then transfer that patient to a government hospital, were free ongoing treatment will be available to the patient. Therefore a private sector hospital is a profit generating business within the healthcare sector.

1.7 Significance of the Study

Handover is one of the key factors in the continuity of patient care, thus this research will assist to ascertain the structure, contents and sequence of the current handover procedure.

The research was conducted in the emergency care units where the participating registered nurses work on a daily basis. The advantage of using this kind of setting for the research was that it was familiar environment to the participants.

This study extracts what key information is currently being utilised by registered nurses working in the private sector emergency care units. Therefore this research enables the researcher to establish the positives and limitations of current handover practices and procedures. This data can form the basis for further research studies regarding handover practices and procedures. Once data is gathered regarding what is deemed as important with regard to the handover procedure, then it is possible to make a comparison to international standards. The areas, in which the handover is lacking, (e.g. education, training, communication, etc) will indicate where future guidelines and standards with regard to registered nurses handover practices in emergency care units can be put into clinical practice.

1. 8 Overview of the Research Report

The research report's structure is as follows:

Chapter One: Overview of the study

Chapter Two: Literature review

Chapter Three: Research methodology

Chapter Four: Data analysis and results

Chapter Five: Discussion of results, conclusions, limitations and recommendations

1.9 Summary

In Chapter One an overview of the research has been presented, including the background of the study, the problem statement as well as the purpose and objectives of the study. The significance of the study in addition to the structure of this research report has also been given. In essence this research study provides an audit of what is contained in current handover practices of emergency care nurses, the views and opinions on current handover practices as well as the order and priorities may be important when conducting such handovers. Chapter Two will present a detailed literature review as a theoretical context for this research study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Handover is an internationally recognised formal procedure which has become a ritual in daily nursing practice. Thus, a structured handover plays a vital role in interdisciplinary communication, decision making and patient treatment. The more effective a handover is, the easier it is for the registered nurse taking over the care of the patient to continue a set standard of the patient's level of care. In order to maintain this high level of care, the handover has to contain vital information, for example the mechanism of injury, the illness or injury, signs and symptoms of the patient's condition, onset time of the presenting problems as well as the type of treatment rendered as well as the time of the rendered treatment. This information needs to be presented in a logical and structured manner in order to assist the multidisciplinary team to maintain the continuity of patient care.

2.1.1 South African Perspective

A South African study performed in the public hospital sector by Uys and Naidoo (2004:5) in which 137 nursing records were audited indicated that the quality of nursing records were generally unacceptable, which resulted in three out of four handovers being inadequate to maintain the continuity of care.

Essentially the handover's primary rationale is to transfer pertinent information to the oncoming shift, so that they can assume responsibility for the care of the patient.

Given this precise definition, the purpose of this study is to look at how this procedure is carried out in the South African emergency care units within the private sector hospital context, giving evidence to substantiate whether it is being done effectively or is there a need for South African healthcare professionals to rethink their approach. According to Scribante and Bhagwanjee (2007:1317), nurses must be alert to subtle changes in their patients' condition, accurately perform clinical assessments and respond accordingly, the handover forms the foundation for these skills.

Using research and evidence-based practice, medical and nursing professionals are enabled to improve their methods in delivering continuity of care. After reviewing the literature (Bruce and Suserud, 2005; Jenkin, et al., 2007; McFetridge, Gillespie, Goode, et al., 2007; Meissner, Haaselhorn, Estryn-Behar, et al., 2007 and Ferran, et al., 2008) the following main commonalities were identified: Verbal, written and non-verbal communication, listening skills, professionalism, competence, documentation, safety, handover structure and core nursing knowledge were encountered. All of these elements tend to form the cornerstone of the term "Handover." It is important to note that there are hardly any studies regarding this topic in the South African private sector emergency care unit setting. The purpose of evidenced-based practice and nursing research is to build on existing scientific knowledge, so that one can make a practical and implementable positive difference in the clinical arena.

There have been numerous studies (Bruce and Suserud, 2005; Jenkin, et al., 2007; McFetridge, Gillespie, Goode, et al., 2007; Meissner, Haaselhorn, Estryn-Behar, et al., 2007 and Ferran, et al., 2008) conducted in many of the first world countries, namely Europe, America and Australia with regard to handover practices and their

affect on the continuity of care. However, to date only a limited number of third world studies (Uys and Naidoo, 2004; Scribante and Bhagwanjee, 2007), especially from an African perspective, have been undertaken. Consequently many of the suggestions proposed in the current scientific research are not implementable in the South African setting due to a number of factors that are unique to this country. Examples are: the structure of the healthcare system, financial and staffing constraints as well as geographical factors, amongst others. South Africa unlike many of the European Union countries does not run on a national healthcare system. Therefore many people have private medical insurance similar to the United States of America and they are treated in private sector hospitals. Both government and private sector hospitals obtain a set annual budget for the administration of the hospital and its respective units. Therefore, nursing managers need to balance these staffing costs as well as the equipment costs out of this budget. South Africa is a very large country; therefore many hospitals are not accessible to the whole population. For example, in the rural areas hospitals are only capable of offering a primary healthcare service; therefore patients are often referred to larger specialised hospitals within the city centres. Hence, all these above factors need to be taken into account when pursuing a research study in the South African setting. South Africa also has one of the highest levels of trauma patients within the world and these patients are cared for by registered nurses in emergency care units.

Critically ill and injured patients, who are brought into the emergency room by the advanced life support paramedics, are frequently cared for in emergency and intensive care units. Normally the paramedic hands over the patient to the registered nurses working in these emergency care units. Once the patients have been

stabilised in these units they are then transferred to the intensive care unit where further definitive care occurs. Therefore, the handover forms a chain of communication which starts with the paramedics bringing the patient into the emergency department and after the patient has been stabilized in the emergency room, they then go for emergency surgery and from the operating theatre they come to the critical care unit to receive definitive intensive care. According to Scribante and Bhagwanjee, (2007:1316) there are “4168 ICU and high care beds in South Africa that are served by 4584 professional nurses.” In other words registered nurses work 12 hour shifts and patients need to be cared for 24 hours a day. Furthermore, if there are only 4168 ICU and high care beds in South Africa and nurses work 12 hour shifts then there is only 2292 nurses are available per shift to nurse these critically ill or injured patients. This translates into 1.82 patients per nurse on these intensive care or high care units. In other words every registered nurse working on an intensive care or high care unit within South Africa has to nurse at least two critically ill or injured patients per shift. From an international point of view, where the ratio is usually one registered nurse to one patient in intensive care units, South Africa is significantly understaffed within these specialised units.

In South Africa, due to the lack of intensive care beds, these critically ill patients often spend a number of hours, if not even days in the emergency care units, as they wait for a bed on the ICU to become available. Therefore, effective communication is the key component of a competent handover, therefore ensuring continuity of care.

2.1.2 Factors Influencing the Handover

In reviewing the literature (Bruce and Suserud, 2005; Jenkin, et al., 2007; McFetridge, Gillespie, Goode, et al., 2007; Meissner, Haaselhorn, Estryn-Behar, et

al., 2007 and Ferran, et al., 2008) it became apparent that South Africa (being very different to Europe, Australia and America) may have to broaden its outlook and develop its own instruments and research that is adapted to its own unique set of circumstances. For example not all nurses working on emergency care units are ICU or trauma and emergency clinical nurse specialists. Scribante and Bhagwanjee (2007:1316) stated in their South African national study that "only 25.6% (1490/5821) of nurses working in ICU were ICU-trained and of this group, 3.8% (233/5821) were trained as neonatal ICU nurses 42.8% had less than five years nursing experience and only 5.7% had more than twenty years nursing experience."

Other factors influencing the way the handover occurs in South African emergency care units may be due to eleven official languages and many different cultural philosophies. This can be supported by the study findings of Ye, et al., (2007:437 - 438) that states "confusion in communication" adversely affects the handover procedure and patient safety. Accordingly, this study is required in order to add to and improve upon current international documented knowledge, with regard to this topic, that is appropriate and implementable in third world countries. For that reason, after reviewing the international literature with regard to evidence based practice, there was a significant need to conduct this study in the Southern African context on the effectiveness of handover practices with regard to the emergency care units.

Scribante and Bhagwanjee (2007:1315) as well as a number of other nursing authors (Bruce and Suserud, 2005; Jenkin, et al., 2007; McFetridge, Gillespie, Goode, et al., 2007; Meissner, Haaselhorn, Estryn-Behar, et al., 2007 and Ferran, et al., 2008) advocate that "the quality of nursing directly affects morbidity and mortality, therefore affecting patient outcome." With the football world cup being hosted by

South Africa in 2010, it is in the interest of the international community as well as the local healthcare services to ensure that the South African healthcare system is able to attain optimal patient care with the resources at hand.

The problem addressed by this study was to perform an audit of current South African handover practice in emergency care units within the private hospital. This was achieved by conducting an audit using a self administered questionnaire. This determined the views and opinions of information used in handover practices, as well as frequency and usefulness of handovers performed by emergency nurses, working in private sector hospitals in the South African context.

Scribante and Bhagwanjee (2007:1315) state that the Department of National Health as well as the South African Nursing Council have acknowledged that there are severe shortages of registered nurses, particularly specialist nurses. Due to staff shortages within the nursing profession, especially in specialised areas like emergency care units, so called “cross-over” may be occurring. In other words ICU or trauma and emergency clinical nurse specialists may be handing over to non-specialist nurses and vice versa. The consequence of this might lead to a breakdown in communication, which in turn could result in a loss of pertinent information that may very well play a crucial role in affecting the patients’ prognosis and thus reducing the patients’ chances with regard to a positive outcome. Therefore the main purpose of the handover according to Jenkin, et al., (2007:145) is to facilitate consistency and continuity of care.

2.1.3 Summary

In summary the handover consists of handing the responsibility of caring and managing a patient over to another medical or nursing professional by virtue of verbal, as well as precise, accurate written documentation.

Hence, the handover should contain all the relevant treatment and care that has been provided to the patient from onset of the illness or injury up to the second that the patient is “handed-over” into the next stage of their treatment, whether at shift change or before and after an intervention, thus enabling expert continuity of care.

2.2 Verbal, Non- Verbal and Written Communication between Nurses

According to Philpin (2006:91) the end of shift information communicated between ICU nurses takes both a verbal and written route. This is an essential combination, as it empowers the nurse taking over the care of the patient to safely provide the continuity of care. As a result not only is the patient’s safety ensured, but also the multidisciplinary effort and the meaningfulness of continuity of care can be expressed, therefore demonstrating the importance of professional nursing care within an ICU or emergency care unit.

In a study by Jenkin, et al., (2007:141 - 146) investigating handover practices between the paramedics and the emergency room staff, collaborate the findings that handover plays a vital link in the chain of survival. Philpin (2006:86) further suggests that the rationale for the handover is not only a transfer of essential information, but also symbolically represents the many core nursing values such as caring, concern, compassion and empathy. All of these elements also play a fundamental role in the

continuity of care, from a nursing perspective. The handover can take place in many forms, whether in the global setting or at the bedside; it is imperative that patient safety must not be compromised.

Kerr (2002:126) defines a handover as a form of communication encompassing both verbal and written pertinent information that will assure and affect the quality of the continuity of care. Bhabra, Mackeith, Monteiro, et al., (2007:300) suggest that “the use of a pre-printed sheet containing important patient details almost entirely eliminates data loss during the handover”. Therefore, a structured handover allows for competent and comprehensive essential information to be conveyed in order to sustain the continuity of care.

Of practical value, Philpin’s (2006:89) study highlights the use of coloured pens in charting the different patient parameters. For example the use of a red pen, with regard to changing of ventilator settings, which at a glance enables the doctors and nurses to identify trends. The ability to identify and predict trends and react within due course, enables the multidisciplinary team to adjust their course of treatment, thus assuring optimally safe medical and nursing care.

Written information is a fundamental component of the handover procedure and it is common nursing practice to make brief notes of critical information that was contained in the handover. It is not always possible to remember all this essential information mentally, especially when a registered nurse is responsible for a number of patients within the clinical setting. This aspect was highlighted by Philpin’s (2006:90) study, where the utilisation of paper towels for brief notes was being implemented for notarising additional information that was not charted immediately, but was later utilised for writing up of nursing notes. This approach aided the nurse in

planning their continuity of care. The core nursing values of caring, professional and competent practice are carried over in the handover, assuring the continuity of care.

Patient report forms (PRF's) do not only contain written handover information, but also act as medico-legal documents. For that reason the written and verbal handover forms the fundamental building blocks of two way communication between paramedics and emergency room staff. According to Manias and Street (2000:380), within the conventional clinical setting information is mainly conveyed by written documentation that is not only a form of instruction but also the legal backbone of the profession. In opposition to this the nursing profession tends to make more use of verbal communication, therefore facilitating a loss of written pertinent information.

In essence this transfer of information contributes towards the patient's outcome, thus quality of care and patient safety. Ultimately there is a dual responsibility regarding handover practices. In other words the team handing over the patient must ensure that the team taking over the patient has adequate information. Furthermore, the team receiving the patient also needs to ensure that they have obtained sufficient information in order to continue with effective patient orientated care. Written information forms part of the handover process acting as the legal backbone of protecting the patient and guiding the nursing practitioner in their plan of care.

A key component of the handover process, which McFetridge, et al., (2007:265) pointed out in their study, was the skill of listening and paying attention to what is being said in the handover; thus attention to detail is important. Therefore, a need for a structured approach to the handover was particularly apparent in this study. Hence, a list of mandatory information and documentation that should accompany

every patient was recommended to be a useful adjuvant to an effective and safe handover.

In support of the above study Jenkin, et al., (2007: 144) reported that the lack of listening skills of the emergency room staff affects the effectiveness of the handover, as vital information is often lost or has to be repeated. The efficacy of the handover affects the subsequent care and thus has a direct impact on the continuity of care. The proficiency of listening and paying attention to detail is mandatory for the continuity of care. Therefore, in order to being proficient in conducting the handover procedure, a registered nurse needs to be able to utilise a number of skills. For example they need to be able to listen what is being said as well as being able to extract the pertinent information from the handover, whether written or verbal and utilise this information to ensure the best possible nursing care and outcome for the patient.

Many studies (Clemow, 2005; Bhabra, et al., 2007; Jenkin, et al., 2007; Ye, et al., 2007) on this topic, especially from McFetridge, et al., (2007:261) report that the transfer of information from the emergency room nurse to the intensive care nurse, when handing over a patient, is essential to maintain the continuity of effective, individualized and safe patient care.

Various studies (Clemow, 2005; Bhabra, et al., 2007; Jenkin, et al., 2007; McFetridge, et al., 2007; Ye, et al., 2007) recommended that nurses from both emergency as well as critical care departments would benefit from a structured framework to assist and guide them with the handover process. A type of checklist was suggested, that would collaborate work between different nursing teams, which

in turn could further enhance the understanding of the roles and expectations with regard to the continuity of care.

According to Kerr (2002:125), handover practices can be characterised by the flexibility of the nurse in "managing the competing demands", for example "maintaining patient confidentiality while still practicing family centred care." This study also implies that the significance of nurse to nurse communication should be acknowledged. Therefore all forms (spoken, written or non-verbal) of communication taking place between nursing colleagues, other medical professionals and patients are important.

However, Manias and Street (2000:373) state that the handover is a complex network of communication that has an impact on nursing interactions and state that the handover takes place in many forms and serves different purposes. For instance, the "global handover" (Manias and Street, 2000:375) was a broad handover that was done by the nurse co-ordinator or unit manager. In contrast to this the bedside handover was of a more personal nature, being strongly patient orientated and customised to the patients' specific care needs.

Philpin (2006:92) states that the handover has become a "ritual" in daily nursing practice. It encompasses interdisciplinary collaboration and supports communication within the nursing team. This aids in better understanding and cohesion with regard to patient focused continuity of care. The patient's social and medical history is usually conveyed by oral communication, which is the trend within the nursing profession. Thus, if no effective handover takes place this essential information, may well be lost.

2.3 Experience, Education, Reflection and Decision Making

Experience and education play a pertinent role in daily nursing practice. Knowledge is power, therefore according to the literature (Lally, 1999; Manias and Street, 2001; Kassean and Jagoo, 2005; Jenkin, et al., 2007) the more educated a registered nurse is the easier it is for them to plan as well as execute the continuity of patient care. In addition to education, experience also plays an important role in the handover procedure as well as subsequent patient care. The well educated registered nurse (clinical nurse specialist), with a number of years experience, is also able to reflect on the patient care rendered and is able to make an educated and informed decision on maintaining the continuity of patient care. Thus, experience and education aid the registered nurse in being more proficient in handover practices and procedures.

Hill (2003:231) states, that the effectiveness of a nurse contributing to the ward round is directly proportional to their experience, knowledge and the process of the ward round. One of the key issues addressed in this study is the nature of ICU nurses in being effective in participating in ward rounds, thus contributing to the delivery of the continuity of care. During ward rounds patient care issues are discussed and therapies are prescribed, therefore assuring the continuity of care.

Kerr's (2002:131) study suggest that teaching and education are also one of the functions of the handover as experienced nurses are able to impart their knowledge to more junior nurses, thus improving the continuity of care. The downfall of in-depth explanations and teaching while handing over a patient is often that the handover

may be more of an information overload, than just being comprehensive. It is important to find a balance between conveying sufficient information to maintaining the continuity of care and on the other hand not overwhelming the nurse taking over the care of the patient with superfluous information. Junior nurses, as well as nursing students can benefit from the interdisciplinary teaching that takes place during the handover.

One of the key findings that was evident in the study of McFetridge, et al., (2007:265) study was that “experience and the attitude” of the nurse in handing over the patients, as well as the experience of the nurse receiving the patient played a fundamental role in the continuity of care. The handover is a continuation of a process, in other words the continuity of care is dependent on the effectiveness of the handover. McFetridge, et al., (2007:264) compared the handover to a game, by using the example of “handing over of a baton in a race” and the goal consequently being the best possible outcome for the patient. Medical and nursing professionals are well aware that the race to save a patient’s life is a race against time, a win or lose situation. There is no other profession in the world where the stakes are so high. If they make mistakes with regard to judgement or patient care, the result can be that a patient dies. For this reason any pertinent information that was not included in the verbal and written handover, for example, an allergy to a specific medication, could have detrimental effects. As a result the experience and the attitude of the nurse performing the handover, as well as the nurse receiving the patient play a fundamental part in ensuring the continuity of care.

The ability of a registered nurse to reflect on their actions and their handover procedure enables them to become more proficient at the procedure. Reflection is

the art of being able to look back and reflect on one's actions, thus aiming for improvement and perfection where necessary. Broekhuis and Veldkamp (2006:109) suggest that the bedside handover was subjected to reflection by the registered nurse, in order to improve its effectiveness. This method of conscious reflection gives rise to improvements in the nature, structure, protocols, rules and atmosphere of the handover, thus ensuring the efficacy of patient centred care.

In addition Broekhuis and Veldkamp (2006:109) routinely articulate that "the bedside handover appears to be the weak link in the chain." This may hamper the effective delivery and continuation of optimal patient centred care.

The principal purpose of a clinical handover is to provide and receive accurate information about the patient's state of health; so that the correct medical treatment and nursing care decisions can be made, thus assuring safe, high quality care. Manias and Street (2001:129) iterate in their study called "The interplay of knowledge and decision making between nurses and doctors in critical care", that ICU Nurses' specialised knowledge plays a major role in influencing the doctors in their decision making, which will ultimately affect the continuity of care. A fundamental constituent of where the nurse's knowledge came from was addressed in this study and it included a combination of education, experience and the information that was obtained in the handover.

This all combined, aids the nurse in predicting the possible trends and outcome of the patients Thus, the multidisciplinary team can structure their care plan to the needs of the patients, therefore maintaining the continuity of care and maximising the probability of nursing the patient back to good health, or in patients with a poor prognosis allowing them to die with dignity.

The findings of Manias and Street (2001:133) study, suggests that there is a close correlation between knowledge and decision making. “Medical consultants as well as junior doctors often relied on the nurse’s knowledge and experience to guide them with decision making.” In support of the above study Hill (2003:235) also tends to collaborate that the multidisciplinary medical team needs to be involved in decision-making regarding the patients care. Therefore, decisions made about patient care should not be made unilaterally. In other words not by the doctors only, as clinical nurse specialists have a significant amount to offer when it comes to patient treatment and health care, as they spend most of their time at the patient’s bedside. Therefore, patient care plans and decisions should be made by multidisciplinary medical care team.

In summary, medical and nursing decisions are made on the information at hand; knowledge is power and in the medical and nursing professions, professionals cannot afford to make mistakes, as the patient’s life is in their hands.

2.4 Patient Safety and Continuity of Care

When critically ill or injured patients are admitted into emergency care units or in hospital wards, they are often defenceless and unable to fend for themselves. Therefore, it is crucial that the registered nurse acts as an advocate for the patient and ensures their safety while maintaining the continuity of care. Thus safety is a prerequisite for competent care, especially given that the core medical and nursing principles of, do no harm, beneficence and non-maleficence, are all correlated to patients’ safety. Lally (1999:35) states that “Nursing is a dynamic discipline and should have a profound effect on patient care.” Therefore the registered nurse is

responsible for the planning, implantation and maintaining of the continuity of patient care.

According to Cahill (1998:351), the inter-shift handover has become an international standard in nursing practice, irrespective of the clinical setting. The main purpose of the handover is for professional inter-disciplinary sharing and maintaining of patient safety, being both physical and psychological safety. Thus the verbal handover is vital in supporting the written documentation, which may be either illegible or incomplete. In addition to this, successful communication is an important attribute to effective nursing. This study focuses on registered nurses handover practices in emergency care units, thus auditing both the written as well as the verbal communication components of the handover procedure was performed in private sector hospitals in emergency care units.

Evidence from various studies (Cahill, 1998; Lally, 1999; Clemow, 2005; Kassean and Jagoo, 2005; Broekhuis and Veldkamp, 2006; McFetridge, et al., 2007) also suggest that a significant deviation from the time-honoured medical model, where a patient was regarded as a passive object. Nurses nurse patients who are real people; they are not just biological organisms that are ill or injured. Therefore, when the handover is performed in front of the patient it is imperative that the nurses greet the patient and asked them how they are feeling and whether their family or relatives have visited them while they are in hospital. This practice ensures that the patient feels included in the handover and is not left out. This is especially prevalent with the bedside handover.

The bedside handover was seen as a means of ensuring proficient and professional transfer of patient care. Thus sharing and passing on of updated information to the

oncoming shift. This information is crucial for the essential planning and delivery of effective, competent and safe nursing patient centred care**.**

A comprehensive study was performed by Meissner, et al., (2007:535 - 541) which explored the dissatisfaction of nurses regarding ten European Union Countries. It is highlighted throughout this study that the nurses' satisfaction in providing quality care is directly related to the quality of the handover, which has an influence on affecting the continuity of care. The main explanation for this dissatisfaction, according to Meissner, et al., (2007:538 - 540), was due to a number "insufficient information exchange, disturbances and lack of time." Furthermore, it was interesting to see that "poor leadership and poor support from colleagues" was noted as being contributing factors for this dissatisfaction. This international comparison demonstrated numerous similarities among the participating European Union Countries, which may have been due to them all having a comparable socio-economic status. The emphasis was on the continuity of nursing care being highly reliant on the effective transfer of information between nursing shifts. A South African study undertaken by Uys and Naidoo (2004:7) highlighted that there are a number of problems with regard to the handover, nursing documentation and the quality of the continuity of care given by non-specialist nurses.

In summary the core aims of health care professionals during the handover is to ensure that interdisciplinary patient centred care is provided, thus guaranteeing optimal safety and continuity of care.

2.5 Summary

This chapter discussed the key components that are derived from the literature that establishes the handover procedure. Some of the fundamental components in the handover procedure were verbal as well as non-verbal and written communication. The level of registered nurses' education and experience was directly proportional to the ability to reflect on their actions, as well as enabling them to make decisions that would maintain patient safety and continuity of care.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The purpose of this study was to determine the handover practices of registered nurses working in emergency care units, in private sector hospitals, in Gauteng, South Africa.

The objectives of the study were to:

- Determine the registered nurses' opinion of information content on documentation used in current handover practices of registered nurses
- Determine the views and opinions of registered nurses regarding current handover practices with reference to the sequence, frequency and usefulness of handovers
- Determine whether there is a difference in opinions of reported handover practices between specialist versus non – specialist registered nurses

3.2 Research Design

A descriptive, prospective and non-experimental design has been utilised in this study. This research design was chosen to obtain complete and accurate information about the handover process, so that the variables that occurred in this study could be measured, without data being manipulated in any way. In order to fully investigate the handover process, a quantitative approach was chosen. This flexible research

design allowed information regarding the content and sequence of the handover to be collected and placed in a numerical form, thus assessing the magnitude and reliability of relationships among them.

3.3 Research Methods

A self-administered questionnaire which was utilised in a study conducted in the United Kingdom by Jenkins, et al., (2007), to determine the handover practices of paramedics to emergency care unit staff, was used as the data collection tool in this study. This instrument has been slightly modified and adapted to the South African setting, with the support of a medical research biostatistician. Furthermore, this research study focuses on the handover practices of registered nurses working in emergency care units.

3.3.1 Population and Sample

The population is defined by Polit and Beck (2006: 506) as the entire set of individuals having some common characteristics, thus in this study it would be all registered nurses working in private sector hospital emergency care units. Polit and Beck (2006: 507) define a sample as a subset of a population, selected to participate in a study, thus an internal audit was conducted in March 2009. The target population of 142 registered nurses was identified by this internal audit.

In this study all these registered nurses (N = 142) working in the emergency care units at the eight Gauteng private sector hospitals (n = 8) were invited to participate in the study. After the data collection was completed an actual figure of 117 nurses (n = 117) of the population participated in this research study, which constituted the

final sample. Eight (n = 8) emergency care units were purposivley selected (out of a possible 20 Gauteng private sector hospital emergency care units). The selection of the units was based upon them being leading trauma centres, in other words they would have a number of specialist surgeons; for example trauma surgeons, maxilla-facial surgeons, orthopaedic and general surgeons on call, in addition to having specialist physicians and cardiologists on call. Thus being able to handle a number of medical illnesses or traumatological injuries at any given time. Therefore they were selected based on being the foremost and leading emergency units within the Gauteng private sector hospital group being used in the sample, as well as having standardised documentation and protocols. This allowed for uniformity regarding data collection.

The minimum sample size required (n = 70) for a feasible study must at least produce a confidence interval of 95%. Registered nurses who met the inclusion criteria were invited to participate.

Inclusion criteria for the registered nurse sample will be as follows:

- Current employment in one of the eight (n = 8) private sector emergency care units designated for the study
- Must at least have one month's employment experience in an emergency care unit

3.3.2 Sampling Method

The hospitals were purposivley sampled, whereby no sampling method was applied to selecting the registered nurses. Those registered nurses who participated by completing the questionnaire, constituted the final sample (n = 117).

3.3.3 The Research Instrument

The instrument that was utilised in this study is a (96-item / 17 question) self administered questionnaire (Annexure G). It comprised of a number of items that best determined the registered nurses' views and opinions of a particular procedure. It is composed of two sections (A and B). The cover sheet of the questionnaire contains an information sheet and an explanation of how to answer the questions in both sections. Section A is comprised of 5 questions (23 items) to elicit nominal data such as age, gender, qualification, employment status, etcetera. Section B is comprised of 12 questions (73 sub-items) relating to the sequence, usefulness, content, time, setting, structure and opinion of the current handover practices. The options to answers that will be utilised include: fixed choices, five point likert scales, ranking scales as well as open question with space for written responses.

The literature (Kerr, 2002; McFetridge, et al. 2007; Meissner, et al. 2007) states this is the most appropriate instrument and method to utilise for the purpose of data collection for this type of study, because it is relatively cost effective in addition to being easy to administrate and quantitative data can be obtained.

3.3.4 Validity and Reliability of the Instrument

The reliability of a measurement process is the "stability or consistency of the measurement" (De Vos, Strydom, Fouché, et al., 2006:162). Therefore it is the capability of the instrument (self administered questionnaire) to produce a consistent statistical result every time it is applied. Validity consists of two components according to De Vos, et al., (2006:160), pertaining to the instrument in this study, which is a 96 item self administered questionnaire, therefore does the "instrument

actually measure the concept" that it is designed to measure, "and that the concept is measured accurately". The self administered questionnaire that was utilised in this study was used in a previous study conducted by Jenkin, et al., (2007). Accordingly it was only slightly customised for the South African emergency care unit environment. Internal consistency of the instrument was conducted using Cronbach's Alpha, which was performed after the pilot study and necessary adjustments were to be made if necessary to the instrument in order to keep a reliability value of 0.70 or more. Polit and Beck (2006:498) define the Cronbach's Alpha as a widely used reliability index that estimates the internal consistency (the instruments reliability) of a measurement composed of several subparts. A Cronbach's Alpha was also performed on every question in the final study and each question scored a minimum of 0.743 or higher. Therefore it is a reliability coefficient Polit and Beck (2006:326), which indexes the internal consistency of the instrument, it ranges between 0.00 – 1.00, thus higher the reliability of the coefficient, the more accurate the measurement. Thus a Cronbach's Alpha value of 0.70 or greater is considered as a high-quality value, with regard to reliability. The validity and reliability of the research study was undertaken by a number of statistical tests as well as comparing findings to those in previous research studies on handover practices.

3.3.5 Data Collection Procedures

The procedure of data collection commenced with the administration of printed questionnaires to the various emergency care units (n = 8) being utilised in this study. The questionnaire was distributed to all registered nurses who made up the sample (N = 142), thus they met the inclusion criteria as set out by the operational

definitions of the study. Each registered nurse who met the inclusion criteria was given an information sheet regarding the purpose of the study.

Once these registered nurses had completed the questionnaire, they placed them in designated collection boxes in the emergency care unit at the nurses' station which was sealed by means of a padlock which only the researcher had access to. Questionnaires were collected on a daily basis by the researcher in person and then information contained in the research questionnaires was loaded onto a computer statistical programme with the aid of a medical research biostatistician.

Data were obtained from both the day and night shift handovers, by virtue of a 96 item (17 question / 5 page) self-administered questionnaire (data collection instrument), which ascertained the components of the handover procedure.

3.3.6 The Research Setting

The research was conducted in the emergency care units of private sector hospitals in one province (Gauteng) where the participating registered nurses work on a daily basis. The advantage of using this kind of setting for the research was that it was familiar environment to the participants. As a result the majority (82.4%; n = 117) of the accessible population group (N = 142) participated freely and willingly in this research study. Thus 17.6% (n = 25) of the registered nurses decided not to participate in the study.

3.4 Pilot Study

A pilot study was conducted at a selected site that is similar in nature to the site where the main study took place. The results of the pilot study were included in the

main study and no changes were made to the questionnaire utilised in this study, during or after the pilot study phase. The pilot study was used to test a small number of the self-administered questionnaires ($n_{\text{Pilot study}} = 11$) regarding registered nurses' handover practices in emergency care units, in order to determine instrument reliability and feasibility of the study. This allowed for checking comprehensiveness of selected items in the clinical setting, as well as for ease of administration and analysis. The Cronbach's alpha for the pilot study was 0.7038, which was performed in order to obtain the internal consistency and reliability of the instrument.

The sample used (n = 11) in the pilot study consisted of five male participants ($n_{♂} = 5$) and six female participants ($n_{♀} = 6$). Their ages ranged from 28 – 48 years, with a mean age of 36.09 years (SD = 7.78), (See table 3.4.1).

Table 3.4.1 Gender of the Registered Nurses

Gender	Frequency ($n = {}_{\alpha}$)	Percentage
Male (n = ♂)	5	45.45%
Female (n = ♀)	6	54.55%
Total (n = ♂ + ♀)	11	100%

A breakdown of the pilot study sample groups' (n = 11) basic nursing qualification was undertaken, which indicated that three (n = 3) of the participants had completed a four-year nursing diploma / degree, one participant (n = 1) had completed a three-year diploma in general nursing and the remaining seven participants (n = 7) had completed the two-year bridging course from staff nurse to registered general nurse, (See table 3.4.2).

Table 3.4.2 Basic Nursing Qualification

Basic nursing qualification	Frequency ($n={}_{\alpha}$)	Percentage
4 Year basic nursing diploma / degree	3	27.27 %
3 Year basic nursing diploma	1	9.09 %
2 Year bridging course - staff nurse to registered nurse	7	63.64 %
Total	11	100 %

The pilot study group was further broken down into the employment status of the participants. This indicated that two participants (n = 2) were employed on a full-time basis, one participant (n = 1) was part time employed, four participants (n = 4) were intensive care or trauma and emergency nursing student currently doing a practical rotation with in the emergency care unit and the remaining four (n = 4) were nursing agency staff that were employed within the emergency care unit, (See table 3.4.3).

Table 3.4.3 Emergency Care Unit Employment Status

Employment position - emergency care unit	Frequency ($n=_{\alpha}$)	Percentage
Full time employed	2	18.18 %
Part time employed	1	9.09 %
Intensive care or trauma & emergency nursing student	4	36.36 %
Nursing agency employed	4	36.36%
Total	11	100 %

In the pilot study sample four of the participants were either intensive care or trauma and emergency qualified (n = 4), then three of the pilot study participants (n = 3) had intensive care or trauma and emergency experience, where the remaining four of them (n = 4) were not intensive care or trauma and emergency qualified. The majority (54.55%) of the pilot study participants (n = 6) had two years or less of hands on experience in emergency care units, whereas three (n = 3) of the participants had between three and five years experience. One participant (n = 1) had 6 to 9 years experience and only one of the pilot study participants (n = 1) had more than 10 years hands on experience in an emergency care unit, (See table 3.4.4).

Table 3.4.4 Years of Working Experience within Emergency Care Units

Years of experience within emergency care units	ICU or ER qualified	ICU or ER experienced	Non-ICU or ER qualified	Total (n = Ω)
0 – 2 years	1	1	4	6
3 – 5 years	1	2	0	3
6 – 9 years	1	0	0	1
> 10 years	1	0	0	1
Total (n = α)	4	3	4	11

Data analysis was performed on the pilot study using the Spearman's statistical test. This analysis demonstrated that there was a statistically significant difference between intensive care or trauma and emergency specialist registered nurses versus intensive care or trauma and emergency non-specialist registered nurses, ($p = 0.0407$). Thus, the non-specialist registered nurses group were inversely proportional to the intensive care or trauma and emergency specialist registered nurses group, with regard to qualification and years of emergency care unit practical working experience.

3.5 Ethical Considerations

The following ethical concerns were taken into consideration

- The protocol was submitted to the University of the Witwatersrand's Postgraduate Committee for approval to conduct the study and approval was granted (Annexure D).
- Ethical clearance was obtained from the University of the Witwatersrand's Human Research Ethics Committee (Annexure B).
- Permission was obtained from the private sector hospital management (Annexure C) to conduct a research study within their hospitals.

- Informed consent was obtained from all professional nurses who wished to participate in the study. An information sheet (Annexure F) outlining the purpose of the study and the participants rights and were used to obtain informed consent. Submitting of a completed questionnaire was regarded as consenting to participate in the study.

- To ensure the anonymity and confidentiality of all participants, they were not required to put their name on the data collection instrument. A number was allocated to them during data collection and reporting.

- Participation in the study was purely on a voluntary basis and any participant was allowed to withdraw from the study at any time without fear of any recourse.

- Permission to use the instrument was obtained and from Annie Jenkin from the University of Plymouth, United Kingdom (Annexure A).

3.6 Summary

This chapter outlined, the research methodology adopted in the study, as well as giving a detailed description of the research instrument and ethical considerations. A pilot study was conducted in order to allow the researcher to modify the instrument for the South African emergency care unit setting. Data were collected by means of a self-administered questionnaire within the emergency care unit setting. The following chapter will present analysis of data as well as the results derived from the data.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

4.1 Introduction

Data analysis is a process whereby one takes raw data, collected during the data collection phase of the research and by means of appropriately selected statistical analysis, the data sets are analysed, evaluated and discussed. In this study, the data were collected by means of a 96-item (17 questions; 5 pages) self-administered questionnaire. This questionnaire focused on registered nurses' handover practices in emergency care units within a private sector hospital group. Raw data obtained from the self administered questionnaire, were then captured onto a statistical computer programme and analysed by the researcher with the aid of a biomedical statistician.

4.2 Data Analysis

Data analysis was conducted using descriptive statistics; Epi-Info and STATA version 10 statistical analysis software was used. The following statistical tests were used in the study to benchmark the data: percentage, mean (average) and standard deviation in conjunction with a range of other statistical tests: Cronbach's alpha, Spearman's test, Bartlett's test for equal variances, student T-Test, Chi^2, Pearson's r, correlation coefficients and Fisher's exact test were used.

The questionnaire was analysed statistically according to its two sections. Section A, comprised of socio-demographic data, while section B, comprised of the handover

procedure where questions targeted the sequence, structure, content, frequency and itemised order of importance of the handover.

To maintain a high level of accuracy regarding the internal consistency of the questionnaire, Cronbach's alpha was done on each question, resulting in an average Cronbach's alpha value of 0.7431 for the entire questionnaire. For this study the level of significance was set at $p \leq 0.05$.

In order to ascertain the statistical significance of differences between groups of registered nurses the sample was split into sub-categories as follows: specialist nurses who included intensive care as well as trauma and emergency specialist nurses, experienced registered nurses including intensive care as well as trauma and emergency experienced nurses. The last sub-category consisted of registered nurses and intensive care or trauma and emergency student nurses who were not qualified in intensive care or trauma and emergency nursing. These sub-categories formed the basis for comparison between specialist nurses, nurses with more than one month’s practical experience in emergency care nursing and general registered nurses, who had no experience within the emergency care units. Therefore the purpose of the analysis was to investigate any statistical significance (set at $p \leq 0.05$) concerning each question of the 96-item self administered questionnaire with regard to the handover practices of registered nurses’ emergency care units within a private sector hospital group.

4.3 Results

The results will be dealt with in the relevant sections so that reference can be made to the significance of the question, as well as the data derived from the answer. Where statistical significance was evident, the p value ($p \leq 0.05$) produced by Fisher's Exact has been included within the text, as well as in the tabular or figurative representation of data.

4.3.1 Results of Section A – Socio-Demographic Data

A total of 117 registered nurses completed the questionnaire and constituted the study sample ($n_{(♂+♀)} = 117$). The youngest participant was 23 years of age and the oldest was 58 years of age, which depicted the range of the participants. The mean age of the registered nurses (n = 117) who participated in the study was 36 years (SD = 7.88), which indicated that the majority of registered nurses currently working in private sector in emergency care units would be expected to have adequate experience as a registered nurse.

Nursing has always been a female dominated profession and the study sample showed the same trend; 24 participants were male ($n_{♂} = 24$) which constituted 20.51% and 93 were female ($n_{♀} = 93$) which constituted 79.49%. Therefore in this study the ratio of male $(♂)$ to female $(♀)$ registered nurses is 1: 4, (See figure 4.1).

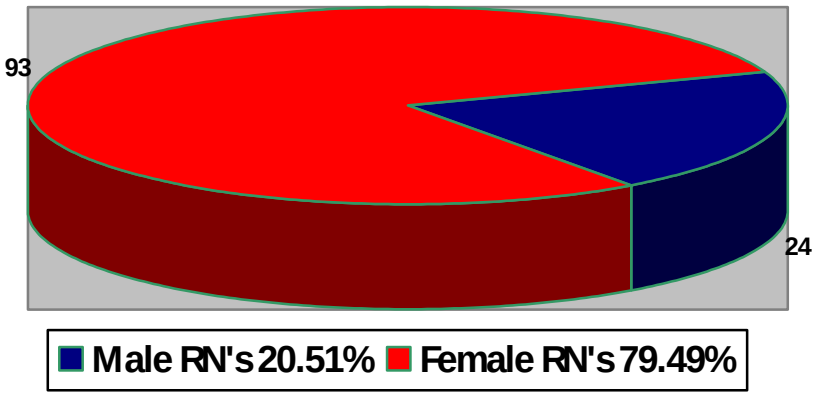

Figure 4.1 Ratio of Male vs. Female Registered Nurses (n = 117/ 1: 4)

4.3.1.1 Basic Nursing Education and Qualifications

The breakdown of the participants' basic qualification are as follows: 36.75% (n = 43) had completed either a four-year diploma or degree in nursing, 15.39% (n = 18) of the participants had completed a three-year diploma as a general nurse, 41.88% (n = 49) of the participants had completed the two year bridging course from staff nurse to registered nurse and 5.98% (n = 7) of the participants were registered nurses who converted their foreign registered nurse qualification to the South African Nursing Council equivalent. This allowed them to be registered and practice as professional nurses within the Republic of South Africa. When the sample group was broken down into categories the following was apparent; 37 were clinical nurse specialists, 36 were non-specialist registered nurses and the remaining 44 had experience in either intensive care or trauma and emergency nursing. This constituted the entire sample of 117 (n = 117) of registered nurses working in emergency care units, (See figure 4.2).

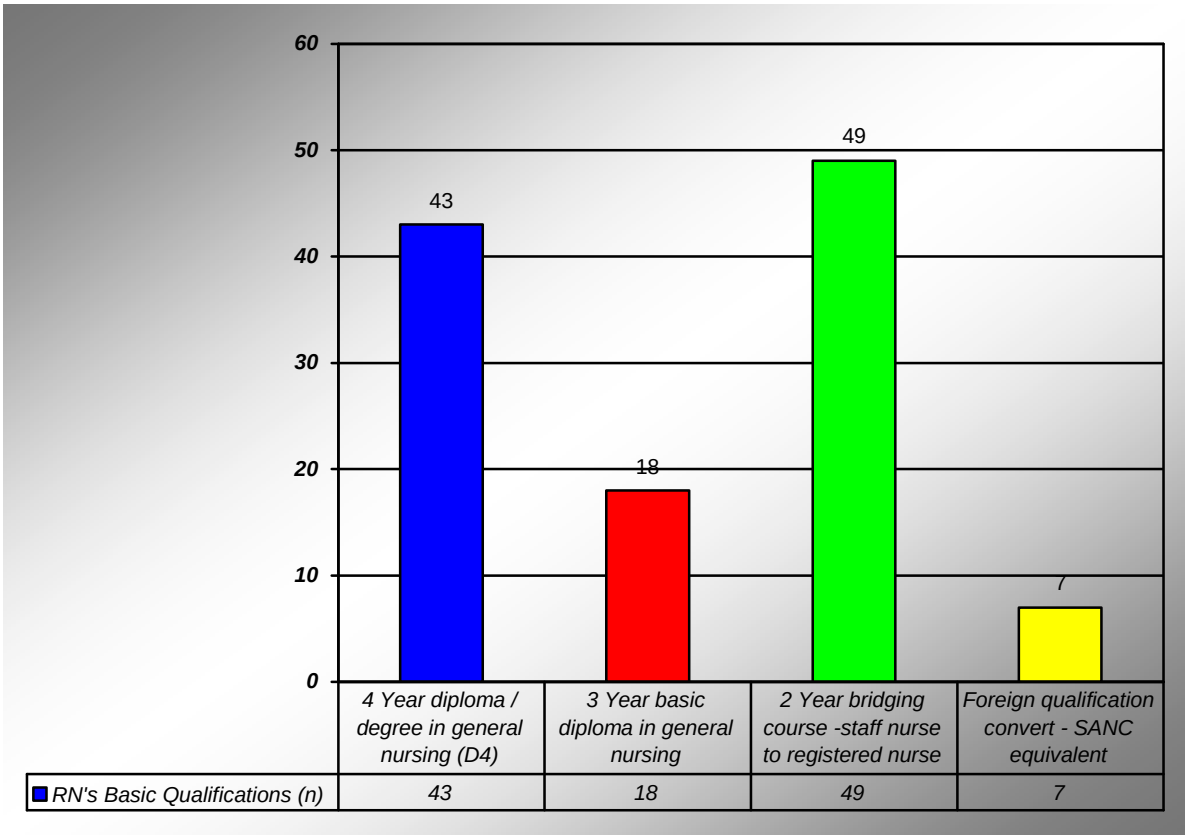

Figure 4.2 Registered Nurses' Basic Training (n = 117)

4.3.1.2 Basic Nursing Education of Specialist (n = 37) Vs. Non-Specialist (n = 36) Nurses

Once the overall breakdown of basic nursing qualifications was completed, a correlation was computed between intensive care or trauma and emergency specialist registered nurses' basic nursing qualification versus that of non-specialist registered nurses, which produced a Chi^2 value of $p = 0.023$. This difference in qualifications between specialists versus non-specialist nurses was statistically significant in this study at ≤ 0.05 level of significance, with reference to obtaining their basic nursing qualification. Therefore most clinical nurse specialists had

completed a four year nursing qualification, whereas the non-specialist nurses had obtained there basic nursing qualification by virtue of a bridging course.

The results showed that 54.05% (n = 20) of specialist registered nurses had completed either the four-year diploma or a degree in general nursing, whereas only 27.78% (n = 10) of the non-specialist registered nurses had completed either the four-year diploma or a degree in general nursing. The sample of specialist registered nurses was twice the size as the non-specialist registered nurses with regard to completion of either the four-year diploma or a degree in general nursing. The majority (61.11%) of non-specialist registered nurses obtained a basic nursing qualification by virtue of doing a two-year bridging course from a staff nurse to a registered nurse.

Twice as many (5.41%; n = 2) of the foreign qualified registered nurses who converted their foreign basic nursing qualification to the South African Nursing Council basic nursing equivalent, were specialist qualified, versus the number of foreign qualified nurses who converted their basic qualification to South African Nursing Council equivalent who were non-specialist qualified. Even though this is an extremely small sample group (n = 3), it tends to indicate that many foreign qualified registered nurses come to South Africa in order to acquire further education, as either intensive care or trauma and emergency qualified registered nurses. This may be the case, as these specialist nursing qualifications are not available or obtainable in their home countries, (See table 4.1).

Table 4.1 Basic Nursing Qualification of Registered Nurses

Basic Nursing Qualification of Registered Nurses	ICU or ER Qualified	Non – ICU or ER Qualified	Total (n = Ω)
4 Year diploma / degree in general nursing (D4)	20 (54.05%)	10 (27.78%)	30 (41.09%)
3 Year basic diploma in general nursing	6 (16.22%)	3 (8.33%)	9 (12.33%)
2 Year bridging - staff nurse to registered nurse	9 (24.32%)	22 (61.11%)	31 (42.47%)
Foreign qualification convert - SANC equivalent	2 (5.41%)	1 (2.78%)	3 (4.11%)
Total (n = Ω) / (p = 0.023)	37 (50.68%)	36 (49.32%)	73 (100%)

4.3.1.3 Practical Working Experience in Emergency Care Units

This research study ascertained what professional qualification or position the registered nurse held within the emergency care unit. This information was essential in order to ascertain if there are differences between specialist registered nurses versus non-specialist registered nurses. It was also an important to ascertain if experience plays a role regarding the handover practices; 25.64% (n = 30) of registered nurses who participated in the study were trauma and emergency qualified, 5.98% (n = 7) of the participants were intensive care qualified. Thus, in total of 31.62% (n = 37) of nurses currently working in the private sector emergency care units were specialist registered nurses. This translates into approximately one third of these registered nurses were clinical nurse specialist.

In the sample of registered nurses who were not registered clinical nurse specialists, but had either ICU or emergency care unit experience: 35.04% (n = 41) of the participants had experience in trauma and emergency care, while only 1.71% (n = 2) had experience in the intensive care. Then 11.11% (n = 13) of the participants were currently trauma and emergency nursing students, while 8.55% (n = 10) were intensive care nursing students.

The remaining 11.97% (n = 14) of the registered nurses working on the emergency care unit had no practical working experience with regard to trauma and emergency or intensive care nursing, (See table 4.2).

Table 4.2 Post Basic Nursing Qualifications and Experience (n = 117)

Post basic nursing qualifications and experience (n = 117)	Frequency (n = $_{\alpha}$)	Percentage
Non-ER qualified nurse, but ER experienced	41	35.04%
Trauma and emergency qualified registered nurse	30	25.64%
Registered nurse with no emergency care unit experience	14	11.97%
Student trauma and emergency registered nurse	13	11.11%
Student intensive care registered nurse	10	8.55%
Intensive care qualified registered nurse	7	5.98%
Non-ICU qualified nurse, but ICU experienced	2	1.71%
Total (n = $_{\Omega}$)	117	100%

The next set of data that was analysed was the number of years of experience working within emergency care units. According to the literature (Lally, 2009; Manias and Street, 2001;Bruce and Suserud, 2006; Jenkin, et al. 2007) only nurses with more than two years practical working experience with a specific nursing field can be considered as experienced within that specialty. As evidenced in the literature review, experience plays just as an important role as training and education does, with regard to handover practices and procedures. Data indicated that 34.19% (n = 40) of the registered nurses had less than two years practical emergency care unit working experience, whereas 27.35% (n = 32) of registered nurses had 3 to 5 years in practical ER working experience in emergency care units, while 16.24% (n = 19) of registered nurses had 6 to 9 years practical ER working experience and only 22.22% (n = 26) of registered nurses had more than 10 years practical emergency care unit working experience. Thus, just over one fifth (22.22% / n = 26) of the participants had more than 10 years experience, while just over one third (34.19% / n = 40) of the registered nurses had less than two years practical working experience in emergency care units, (See figure 4.3).

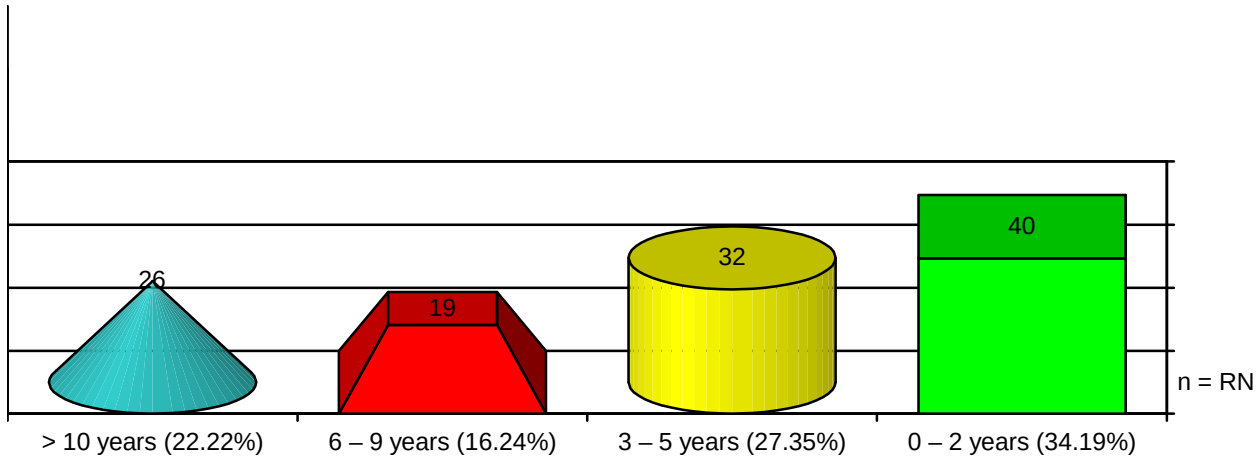

Figure 4.3 RN's Years of Practical Working Experience within Emergency Care Units (n = 117)

A further breakdown of the registered nurses years of practical working experience within emergency care unit was conducted. According to the literature reviewed, practical working experience within a particular hospital unit is directly proportional to knowledge and the rendering of a high-level of patient care, which is required within that particular hospital unit. (See table 4.3)

Table 4.3 Years of Working Experience within Emergency Care Units (n = 117)

Years of practical working experience within emergency care units (n = 117)	ICU or ER qualified	ICU or ER experienced	Non-ICU or ER qualified	Total (n = $_{\Omega}$)
0 – 2 years	5	14	22	41
3 – 5 years	10	13	9	32
6 – 9 years	10	6	2	18
> 10 years	12	11	3	26
Total (n = $_{\alpha}$)	37	44	36	117

4.3.1.4 ER Working Experience – Specialist vs. Non-specialist Nurse

A comparison was conducted between specialist registered nurses (n = 37) versus non-specialist registered nurses (n = 36), with regard to their years of practical ER working experience within emergency care units. The results indicated that the highest proportion (32.43%; n = 12) of specialist nurses had over ten years practical ER working experience, whereas the majority (61.11%; n = 22) of non-specialist registered nurses had less than two years practical ER working experience within emergency care units. Therefore with regard to years of working experience within emergency care units there was an inversely proportional relationship between the groups of specialist qualified nurses versus the non-specialist group. Therefore there was a statistical significance between the groups at ≤ 0.05 level of significance. This indicated that clinical nurse specialist were more likely many years of working experience within a specific specialty than non-specialist registered nurses.

Furthermore 32.43% the nurses who had more than ten years practical ER working experience were registered clinical nurse specialist, as opposed to 61.11% of the registered nurses who had less than two years practical ER working experience were non-specialist nurses. As a result the majority were not qualified or experienced in emergency medical care and the experienced registered clinical nurse specialists were in the minority, (See table 4.4).

Table 4.4 Years of Experience within Emergency Care Units

Years of experience within emergency care units	ICU or ER qualified	Non-ICU or ER qualified	Total (n = Ω)
0 – 2 years	5 (13.51%)	22 (61.11%)	27 (36.99%)
3 – 5 years	10 (27.03%)	9 (25.00%)	19 (26.03%)
6 – 9 years	10 (27.03%)	2 (5.56%)	12 (16.44%)
> 10 years	12 (32.43%)	3 (8.33%)	15 (20.55%)
Total (n = Ω) / (p = 0.00)	37(50.68%)	36 (49.32%)	73 (100%)

4.3.1.5 Employment Status and Working Capacity of Registered Nurses

Another key factor that plays an important role with consistency is how many of the registered nurses who participated in the study were in full time (40 hours a week) employment, versus the number of part-time (20 hours a week) and agency employed nursing staff. This information is useful in understanding why there may be inconsistency with the handover procedure, as staffs that do not work full-time in an emergency care unit and therefore may not be able to adhere to the standards set by that particular unit.

Of the registered nurses who participated in this study 56.41% (n = 60) were in full time employment in their respective emergency care units, while 15.39% (n = 18) of the emergency care unit staff was either trauma and emergency or intensive care nursing students. Thus, they had only short rotations on these emergency care units, whereas 1.71% (n = 2) of the registered nurses who participated in this study were volunteers, they were volunteering their time in these emergency care units in order to gain some experience within the private sector setting, whereas 10.26% (n = 12) of registered nurses working on the emergency care units were only part time (20 hours a week) employed, while 20.51% (n = 24) were nursing agency staff. Thus, 30.77% (n = 36) of the staffing requirements of the emergency care units was made up by part-time and agency registered nurses. In other words means that approximately one third of the units' registered nurses staffing was made up of staff who were not employed full time by these units, and therefore these registered nurses were possibly not able to follow the standards regarding handover practices and procedures as set out by these units, (See table 4.5).

Table 4.5 Registered Nurses Employment Status in Emergency Care Unit

Current employment status - emergency care unit	Frequency (n = $_{\alpha}$)	Percentage
Full time employed (40 hour week)	60	56.41%
Part time employed (20 hour week)	12	10.26%
Student ICU or trauma and emergency nurse	18	15.39%
Volunteer – RN wanting to gain ER experience	2	1.71%
Nursing agency employed	24	20.51%
Other – registered nurse (working overtime)	1	0.86%
Total (n = $_{\Omega}$)	117	100 %

With reference to employment the majority (64.86%; n = 24) of specialist registered nurses were employed on a full time (40 hours a week) basis by their respective emergency care units. The highest proportion (44.44%; n = 16) of non-specialist registered nurses was made up of either intensive care or trauma and emergency students that were currently doing a practical rotation in their respective emergency care units where the study took place. Approximately one third (30.55%; n = 11) of specialist staff were not employed on a full time basis and this sample consisted of 8.33% (n = 3) being employed part time (20 hours a week) and 22.22% (n = 8) being nursing agency employed. This comparison produced a statistical significance with a Chi^2 value of p = 0.00 and a Fisher's exact value of p = 0.00. Thus, it was more likely that intensive care or trauma and emergency qualified registered nurses were in full time (40 hour a week) employment within the private sector emergency care units compared with non-specialist registered nurses, (See table 4.6).

Table 4.6 Special vs. Non-specialist Nurses ER Employment Status

Current emergency care unit - employment status	ICU or ER qualified	Non-ICU or ER qualified	Total (n = $_{\Omega}$)
Full time employed (40 hour week)	24 (64.86%)	9 (25.00 %)	33 (45.21%)
Part time employed (20 hour week)	5 (13.51%)	3 (8.33%)	8 (10.96%)
Student ICU or student ER nurse	0 (0.00%)	16 (44.44%)	16 (44.44%)
Nursing agency employed	8 (21.62%)	8 (22.22%)	16 (21.92%)
Total (n = $_{\Omega}$) / (p = 0,00)	37 (50.68%)	36 (49.32%)	73 (100%)

4.3.2 Results of Section B – Handover Procedure

Section B elicited data relating to handover procedures.

4.3.2.1 Formal Handover Procedure Training of Registered Nurses

One of the first questions in this section related to the education or training those registered nurses received regarding handover practices. The majority (70.09%; n = 82) of registered nurses indicated that their skill of performing a handover was derived from listening to their other colleagues conducting a handover: 17.09% (n = 20) of the participants stated that they had learned handover practices and procedures from reading books and manuals, while only 10.26% (n = 12) of the participants had received some form of formal training with regard to handover practices. On the other hand, 2.56% (n = 3) stated they had received no training whatsoever regarding handover practices, (See table 4.7).

Table 4.7 Registered Nurses Formal Training Regarding Handover Practices

Main form of education or training that the entire sample group had received regarding handover practices	Frequency (n = α)	Percentage
Through listening to what colleagues say	82	70.09%
Through reading a book or manual	20	17.09%
Formal training during a course	12	10.26%
Had not received any form of education or training	3	2.56%
Total (n = $_{\Omega}$)	117	100%

4.3.2.2 Current Handover Patient Documentation

Registered nurses were then asked to give their opinion on current patient documentation. The following results were obtained. The majority (73.91%; n = 89) of the participants found that the design of information in patient documentation is clearly laid out. An analysis was conducted regarding the clarity of design of

handover information contained in current patient documentation, whereby a comparison was performed between specialist registered nurses versus non-specialist registered nurses. The majority (88.89%; n = 32) of specialist qualified nurses as well as the majority (77.14%; n = 27) of non-specialist nurses found that the design of handover information contained in current patient documentation is clearly laid out, but 17.14% (n = 6) of non-specialist nurses found they were not sure if the design of handover information contained in current patient documentation was clearly laid out. Statistical significance indicated that there were no specialist nurses that were unsure about the layout of current patient documentation, whereas some of the non-specialist registered nurses were. Chi^2 produced a value of p = 0.029 and Fisher's Exact produced a value of p = 0.026, when statistical analysis was performed on this question, (See table 4.8).

4.3.2.3 Logical Sequence of Current Handover Patient Documentation

The majority (75.47%; n = 80) of the participants found that information contained in current patient documentation utilised within the private sector emergency care units where the study took place followed a logical sequence, (See table 4.8).

4.3.2.4 Contents of Current Handover Patient Documentation

A question was posed to the sample in order to determine if current patient documentation that is utilised within the emergency care units contained all the necessary patient information required to perform the handover procedure. The majority (73.39%; n = 80) of the participants found that nursing documentation contained all the patient information they required for the handover, (See table 4.8).

4.3.2.5 Understanding the Contents of Current Documentation

The next question posed to the sample is the content of information used in current patient documentation easy to understand. The majority (78.90%; n = 86) of the participants reported that the content of the information was easy to understand, but 9.17% (n = 10) of the participants were not sure if the content of current patient documentation was easy to understand. South Africa has eleven official languages, but nursing documentation is written in English. As English is the official language used by the South African Nursing Council for legislation. So these results may be due to the fact that patient documentation is written in English, which is often not the nurses' mother tongue. It may also be due to the reality that the doctors or nurses handwriting is often illegible, (See table 4.8).

4.3.2.6 Finding the Information Required for the Handover

The next question that was posed to the participants was could they always find the information within current patient documentation that they required in order to perform the handover procedure. Just over half (56.07%; n = 60) of the participants said they could find the information they required to perform the handover. Almost one third (32.71%; n = 35) of the registered nurses said that they could not always find the patient information within the documentation that is required to be passed on in the handover, (See table 4.8).

Table 4.8 Current Patient Handover Documentation

Is the design of handover information contained in current patient documentation clearly laid out?	Frequency (n = α)	Percentage
Yes	89	73.91%
No	13	21.74%
Not sure	10	4.35%
Total (n = Ω)	112	100%
Is the sequence information contained in current patient documentation in a logical format?	Frequency (n = α)	Percentage
Yes	80	75.47%
No	16	15.09%
Not sure	10	9.43%
Total (n = Ω)	106	100%
Does current patient documentation contain all of the patient information you required for the handover?	Frequency (n = α)	Percentage
Yes	80	73.39%
No	17	15.60%
Not sure	12	11.01%
Total (n = Ω)	109	100%
Is the content of information used in current patient documentation easy to understand?	Frequency (n = α)	Percentage
Yes	86	78.90%
No	13	11.93%
Not sure	10	9.17%
Total (n = Ω)	109	100%
Could you always find the information that you required in order to perform the handover?	Frequency (n = α)	Percentage
Yes	60	56.07%
No	35	32.71%
Not Sure	12	11.21%
Total (n = $_{\Omega}$)	107	100%
Is the design of handover information contained in current patient documentation clearly laid out?	ICU or ER qualified	Non- ICU or ER qualified
Yes	32 (88.89%)	27 (77.14%)
No	4 (11.11%)	2 (5.71%)
Not sure	0 (0.00%)	6 (17.14%)
Total (n = 71) / (p = 0.026)	36 (50.70%)	35 (49.30%)

4.3.2.7 The Primary Handover

Registered nurses (n = 117) were then asked who was the first person they were required to hand over to within the emergency care unit. The following data was obtained from the sample group. The largest proportion (37.61%; n = 44) of the participants stated that their first handover would be to a doctor on duty, who treats the patients within the emergency care unit. Thereafter (27.35%; n = 32) of the

participants would perform a primary handover to another registered nurse who was in most cases the emergency care unit shift leader. Furthermore (19.66%; n = 23) of the participants would perform a primary handover to another nurse being either a staff nurse or nursing assistant. This was most likely done when the registered nurses had assessed the patient and decided that a less qualified nurse was able manage the stable patient and provide the appropriate level of nursing care in order to meet the patient's emergency treatment requirements, (See table 4.9).

Table 4.9 Primary Handover in Emergency Care Units

In the Emergency Care Unit, who was the First Person you normally needed to Handover to?	Frequency (n = α)	Percentage
Doctor working in the Emergency Department	44	37,61 %
Another Registered Nurse – ER Shift Leader	32	27,35 %
Another Nurse - Staff Nurse or Nursing Assistant	23	19,66 %
Another Registered Nurse working in the ER	12	10,26 %
The Unit Manager coordinating ER Admissions	6	5,12 %
Total (n = $_{\Omega}$)	117	100 %

4.3.2.8 The Primary Handover of Specialist vs. Non-specialist Nurses

A comparison was conducted between specialist nurses versus non-specialist nurses with regard to whom they normally need to perform their first handover to within the private sector emergency care units. The following results were obtained: In the specialist nurse group 47.22% (n = 17) would perform the primary handover to the emergency doctor on duty, whereas the non-specialist nurse group would perform a primary handover to either the registered nurse who was the shift leader on duty for that day (27.03%; n = 10), or to the emergency doctor on duty (27.03%; n = 10). About one quarter (24.32%; n = 9) of non-specialist registered nurses would perform their primary handover to the staff nurse or nursing assistance. Furthermore, 13.89% (n = 5) of specialist registered nurses would delegate the patient's care to a

staff nurse or nursing assistant with a primary handover. Specialist registered nurses perform their primary handover to the emergency doctor on duty and they were less likely to delegate patient care to a staff nurse or nursing assistant. Conversely the non-specialist registered nurse was more likely to perform their primary handover to the registered nurse, acting as the shift leader for that day, or to the emergency doctor on duty. Non-specialist nurses were more likely to delegate patient care to a lower qualified staff nurse or nursing assistants than a clinical nurse specialist was, (See table 4.10).

Table 4.10 Specialist vs. Non-specialist Nurses Primary Handover

In the emergency care unit, who was the first person you normally needed to handover to?	ICU or ER qualified	Non- ICU or ER qualified	Total (n = $_{\Omega}$)/($_{\alpha}$ %)
Doctor working in the emergency department	17 (47.22%)	10 (27.03%)	27 (36.99%)
Another registered nurse – ER shift leader	10 (27.78%)	10 (27.03%)	20 (27.40%)
Another nurse - staff nurse or nursing assistant	5 (13.89%)	9 (24.32%)	14 (19.18%)
Another registered nurse working in the ER	1 (2.27%)	7 (18.92%)	8 (10.98%)
The unit manager coordinating ER admissions	3 (8.33%)	1 (2.70%)	4 (5.48%)
Total (n = $_{\Omega}$) / (p = 0.072)	36 (49.32%)	37 (50.68%)	73 (100%)

4.3.2.9 Repetition of the Handover by Registered Nurses

Almost all registered nurses (98.29%; n = 115) said that they needed to repeat the handover regarding the same patient in the emergency care unit. Thus, it became evident that repetition of the handover is done on a regular basis.

It was evident that the handover was repeated mostly (78.26%; n = 90) in priority one patients, who are patients in need of immediate life saving emergency medical treatment and care. In 13.04% (n = 15) of the time the handover was repeated for priority two patients, which are patients whose treatment can be temporary delayed for up to a couple of hours. In only 8.70% (n = 10) of the time it was required to repeat the handover with priority three patients, which are patients whose treatment

can be delayed for a number of hours or also known as “the walking wounded.” Therefore the handover is most often repeated in priority one patients.

It was also found that 58.62% (n = 68) of the repetition of the handover in the category of “every time”, priority one patients. Handover repetition occurred in 20.69% (n = 24) of priority two patients, whereas only 10.43% (n = 12) of handovers were repeated in priority three patients and 9.57% (n = 11) of priority four patients, which are patients that are already dead or have little chance of survival despite the best medical intervention, required repetition of the handover.

The participants were then asked how often they are required to repeat the handover and 29.6% (n = 34) stated that they needed to repeat the handover only once, whereas 29.91% (n = 35) indicated they needed to repeat the handover more than twice and the remaining 41.03% (n = 48) said that they only needed to repeat the handover regarding the same patient twice. Thus it became apparent that the handover was usually repeated twice regarding the same patient within the private sector hospital emergency care unit, (See total 4.11).

Table 4.11 Repetition of the Handover in Emergency Care Units

Do you need to give more than one handover regarding the same patient in the emergency care unit?				Frequency (n = α)	Percentage
Yes				115	98.29%
No				2	1.71%
Total (n = Ω)				117	100%
Indicate what priority (P1 – P4) the patients are most likely to be, where it is required to repeat the handover?				Frequency (n = α)	Percentage
P1 - require immediate life saving medical treatment				90	78.26%
P2 - temporary delayed treatment for up to two hours				15	13.04%
P3 - delayed treatment for a number of hours				10	8.70%
P4 – patient is already dead / no chance of survival				0	0%
Total (n = Ω)				115	100%
How many times do you normally need to repeat the handover regarding the same patient?				Frequency (n = α)	Percentage
Once only				34	29.06%
Twice				48	41.03%
More than twice				35	29.91%
Total (n = Ω)				117	100%
Handover Repetition per priority?	Every time	Frequently	Occasionally	Not often	Total (n = Ω)
Priority one (P1)	68 (58.62%)	23 (19.83%)	14 (12.07%)	11 (9.48%)	116 (100%)
Priority two (P2)	24 (20.69%)	48 (41.38%)	24 (20.69%)	20 (17.24%)	116 (100%)
Priority three (P3)	12 (10.43%)	29 (25.22%)	46 (40.00%)	28 (24.35%)	115 (100%)
Priority four (P4)	11 (9.57%)	9 (7.83%)	19 (16.52%)	76 (66.09%)	115 (100%)

4.3.2.10 To Whom was the Handover Repeated

Registered nurses were then asked who would be the person that you usually need to repeat handover to within the emergency care unit. The results were as follows: the largest proportion 38.46% (n = 45) said the handover was to the doctor on duty in the emergency care unit, whereas only 3.41% (n = 4) would hand over to a consultant, surgeon or specialist; 22.22% (n = 26) handed over to another registered nurse, while 4.27% (n = 5) would repeat the handover to specialist registered nurses; 11.11% (n = 13) would repeat the handover to any nurse (staff nurse or auxiliary nurse) that was on duty. Thus, well over a half (57.25%; n = 67) of repeating patient handover is done between nurses. It was also noted that 17.09% (n = 20) of repeated handovers were given to the unit manager, whereas only 2.56% (n = 3) of

primary handovers were given to both trauma and emergency or intensive care nursing students, (See table 4.12).

4.3.2.11 Handover Repetition of Specialist vs. Non-specialist Nurses

An analysis was undertaken to compare specialist registered nurses to non-specialist registered nurses with regard to whom the registered nurses needed to repeat the handover information to. Results indicated that 45.95% (n = 17) of specialist registered nurses would repeat the handover to the doctor on duty; 8.11% (n = 3) of them repeat the handover to a consultant or specialist physician. Furthermore, 2.7% (n = 1) of them would repeat the handover to a surgeon. 27.03% (n = 10) of non-specialist registered nurses would repeat the handover to the doctor on duty and 27.03% (n = 10) of them would also repeat the handover to another registered nurse that was on duty. However, none of them repeated the handover to a consultant, specialist physician or surgeon. When statistical analysis was conducted between specialists versus non-specialist registered nurses, a Fisher's Extract value of p = 0.033 was produced, which indicated the statistical significance between specialist versus non-specialist nurses with regard to handing over to the doctor. Therefore, the non-specialist registered nurses were unable to identify when it was required to repeat the handover to a consultant, specialist physician or a surgeon. This is a skill, which is possibly only obtained once a registered nurse has attended and completed a training programme, which qualifies him / her as either an intensive care or a trauma and emergency clinical nurse specialist, (See table 4.13).

4.3.2.12 Location of Registered Nurses Handover Practices

In order to determine the spatial perception of where the handover took place, participants were asked where they normally perform the handover procedure. The majority 58.97% (n = 69) of the participants performed the handover within the emergency care unit, with 23.08% (n = 27) of the handover took place within the resuscitating room, 11.11% (n = 13) of handovers took place at the nurses' station, whereas 4.27% (n = 5) of handovers took place in the corridor, 0.85% (n = 1) in the reception area and the remaining 1.71% (n = 2) took place at the entrance of the emergency care unit. Therefore, over one fifth (23.08%) of the handover took place in the resuscitating room where critically ill or injured patients were stabilised using advanced life support techniques and sophisticated medical equipment, (See table 4.12).

Table 4.12 Persons to Whom the Nurse Needed to Repeat the Handover

Persons to whom the registered nurse needed to repeat handover information to.	Frequency (n = α)	Percentage
A doctor	45	38.46%
A registered nurse	26	22.22%
The unit manager	20	17.09%
A nurse – staff nurse / auxiliary nurse	13	11.11%
A specialist ICU or ER qualified registered nurse	5	4.27%
A consultant or specialist physician	3	2.56%
ICU or trauma and emergency nursing student	3	2.56%
A surgeon	1	0.85%
Another person within the emergency unit (paramedic)	1	0.85%
An anaesthetist	0	0.00%
Total (n = Ω)	117	100%
The area of the emergency care unit where the handover is most often repeated	Frequency (n = α)	Percentage
In the casualty unit	69	58.97%
In the resuscitating room / emergency room	27	23.08%
At the nurses' station	13	11.11%
In the corridor	5	4.27%
At the entrance of the emergency care unit	2	1.71%
In the reception area	1	0.85%
Total (n = Ω)	117	100%

4.3.2.13 Location of Specialist vs. Non-specialist Nurses Handover

On closer in-depth analysis of where the handover takes place the following trend became apparent. Approximately one third (32.43%; n = 12) of specialist trained nurses would repeat the handover in the resuscitation room whereas just over one fifth (21.62%; n = 8) of the non-specialist trained nurses would recognise the need to repeat the handover of these critically ill and injured patients. (See table 4.13)

Table 4.13 Specialists versus Non-Specialist Nurses Handover Repetition

Persons to whom the registered nurse needed to repeat handover information to.	ICU or ER qualified	Non- ICU or ER qualified	Total (n = Ω) / (α %)
A doctor	17 (45.95%)	10 (27.03%)	27 (36.49%)
The unit manager	9 (24.32%)	6 (16.22%)	15 (20.27%)
A registered nurse	5 (13.51%)	10 (27.03%)	15 (20.27%)
A nurse – staff nurse / auxiliary nurse	2 (5.41%)	6 (16.22%)	8 (10.81%)
A consultant - specialist physician	3 (8.11%)	0 (0.00%)	3 (4.05%)
A specialist ICU or ER qualified registered nurse	0 (0.00%)	3 (8.11%)	3 (4.05%)
A surgeon	1 (2.70%)	0 (0.00%)	1 (1.35%)
ICU or trauma and emergency nursing student	0 (0.00%)	1 (2.70%)	1 (1.35%)
Another person in the emergency unit (paramedic)	0 (0.00%)	1 (2.70%)	1 (1.35%)
An anaesthetist	0 (0.00%)	0 (0.00%)	0 (0.00%)
Total (n = Ω) / p = 0,033	37 (50.00%)	37 (50.00%)	74 (100%)
The Area of the Emergency Care Unit where the Handover is most often Repeated	ICU or ER qualified	Non- ICU or ER qualified	Total (n = $_{\Omega}$) / ($_{\alpha}$ %)
In the casualty unit	22 (59.46%)	23 (62.16%)	45 (60.81%)
In the resuscitating room / emergency room	12 (32.43%)	8 (21.62%)	20 (27.03%)
At the nurses' station	1 (2.70%)	4 (10.81%)	5 (6.67%)
In the corridor	1 (2.70%)	1 (2.70%)	2 (2.70%)
At the entrance of the emergency care unit	1 (2.70%)	1 (2.70%)	2 (2.70%)
Total (n = $_{\Omega}$)	37 (50.00%)	37 (50.00%)	74 (100%)

4.3.2.14 Information Contained in the Handover Procedure

The registered nurses (n = 105) were asked to list what information they usually include in the patient handover. The majority (89.52%; n = 94) stated that use of the "MIST" acronym offered by Hodgetts and Tuner (2006) formed the basic format for the handover. Therefore MIST stands for: M = mechanism of injury, I = illness or injury, S = signs and symptoms, T = treatment and time. Data indicated that 13.33%

(n = 14) said that in addition to (the mechanism of injury, illness or injury, signs and symptoms, treatment and time), the patient's name and age, patient management, examinations and diagnosis, was what they thought should be included in a good quality patient handover, (See table 4.14).

4.3.2.15 Additional Information that should be in the Handover

Registered nurses (n = 117) were asked to list additional information which they felt should be included in the handover practices of registered nurses working in the private sector hospital groups emergency care units, (See table 4.14).

Table 4.14 Information Currently Contained in ER Handover Practices

Information currently contained in RN handover practices in emergency care units. (n = 105)		
Mechanism of injury	Illness or injury	Signs and symptoms
Treatment and time	Patient's name and age	Patient management
Examinations	Patient's diagnosis	Vital signs
Allergies	Medication	Past medical history
Last oral intake	Cause of the injury	Blood type
Findings of examinations	Patient's doctors name	X-rays
Urine output	Neurological examinations	Patient observations
Additional information that should be contained in RN handover practices in emergency care units. (n = 117)		
Patient risk factors	Side effects of medication	Loss of consciousness
HIV status	On antiretroviral drugs Rx	Follow-up visits
Anti-tetanus injection	Patients weight-paediatric	Previous ER visits
Onset of pain	Chronic conditions	Patient's ER file opened
Patient's family informed	Discharge status	Past operations
Family medical history	Psychological status	Neurological deficits
Oxygen saturation	Bowel movements	Nursing care plan
Hemodynamic status	Mechanical ventilation	Lung compliance
Paramedic service used	Physiotherapy required	ICU / ward bed required

4.3.2.16 Itemized Structured Ranking of the Handover Procedure

Registered nurses (n = 117) were asked to rank (in order of importance phrases from 1 to 17) which they thought should be contained in the handover. Approximately one third (32.48%; n = 38) of registered nurses stated that the patient's name would be a most important item of the handover. Thereafter, 23.08% (n = 27) stated that the

patient's age would be of vital importance, 17.09% (n = 20) stated that the time of drugs and medication administered would-be in third place and then 12.82% (n = 15) feel that the reason for admission would be in fourth place. 12.82% (n = 15) stated that the patient's allergies would be ranked as fifth place, thereafter any significant previous medical history followed by the effects of treatment drugs and medication history. In eighth position (11.97%; n = 14), the time of accident illness or injury followed by problems requiring immediate medical intervention, which was then followed by the history of events, which was then followed by the location and address of the incident. Subsequently 21.74% (n = 25) of the participants rated the patient's social circumstances as number 14, then 31.03% (n = 36) stated that the details of the patient next of kin. This was followed by 27.19% (n = 31) of the participants felt that position 16 in the ranking system was whether the patient's family was aware that the patient was in hospital and 35.71% felt that any additional information such as medical aid or medical insurance would be contained as point 17 in the handover procedure, (Table 4.15).

Table 4.15 Registered Nurses Itemized Ranking of the Handover Sequence

Overall Ranking Order of Importance for the Handover	Rank
The patient's name	1
The patient's age	2
Time drugs and medication administered	3
Reason for admission	4
Allergies	5
Any significant previous medical history	6
Effect of treatment / drugs / medication history	7
Time of accident, illness or injury	8
Problems requiring immediate medical intervention	9
History of events	10
Location and address of incident	11
Treatment carried out since time of onset	12
Suspected injuries or illness	13
Social circumstances of the patient	14
Details of the patient's next of kin	15
Whether the patient's family are aware that the patient is in hospital	16
Any other information (Please specify) Medical aid / medical insurance	17

4.3.2.17 Specialist Nurses Itemized Structured Ranking of the Handover

The sample (n = 37) which consisted of the intensive care or trauma and emergency specialist qualified registered nurse were asked to rank the following phrases in order of importance with regard to their handover practices and procedures. The largest proportion (16.22%; n = 6) of them rated problems requiring immediate medical intervention in position one. Secondly 18.92% (n = 7) of them rated the patient's age in position two, as clinical nurse specialists know that the patient's age is crucial in order to work out the patient's medication dose which is related to weight especially in paediatric patients (Age x 2 + 8 = Paediatric Weight), as well as to anticipate the possibility of certain medical conditions which are prevalent in certain age groups. An example would include coronary artery and cardiac problems in patients over the age of 40. In third place with 13.51% (n = 5), they rated the reason for admission. This is important to a clinical nurse specialist in order for them to determine what the possible chief complaint of the patient is and therefore they can structure the nursing care plan accordingly. Allergies were ranked in position number seven with 24.32% (n = 9), by the specialist qualified registered nurses. Later ranking of allergies may be due to the fact that specialist qualified nurses were able to handle a patient who presents with anaphylactic shock due to an allergic reaction caused by medication administered, (See table 4.16).

Table 4.16 Specialist Nurses Itemized Ranking of the Handover Procedure

ICU or Trauma and Emergency Qualified Registered Nurses	Rank
Problems requiring immediate medical intervention	1
The patient's age	2
Reason for admission	3
Treatment carried out since time of onset	4
Time drugs and medication administered	5
Any significant previous medical history	6
Allergies	7
Suspected injuries or illness	8
History of events	9
Time of accident, illness or injury	10
Effect of treatment / drugs / medication history	11
The patient's name	12
Location and address of incident	13
Social circumstances of the patient	14
Details of the patient's next of kin	15
Whether the patient's family are aware that the patient is in hospital	16
Any other information (Medical Insurance)	17

4.3.2.18 Experienced Nurses Itemised Structured Ranking of the Handover

The sample (n = 42) which consisted of the intensive care or trauma and emergency experienced registered nurse, were asked to rank the following phrases in order of importance with regard to their handover practices and procedures. The largest proportion (31.71%; n = 15) rated the patient's name in position one. In second place 23.81% (n = 10) rated the patients age. This was then followed by the time drugs and medication administered; suspected injuries or illness and problems requiring immediate medical intervention, (See table 4. 17).

Table 4.17 ER Experienced Nurses Itemized Handover Ranking

ICU or Trauma and Emergency Experienced Registered Nurses	Rank
The patient's name	1
The patient's age	2
Time drugs and medication administered	3
Suspected injuries or illness	4
Problems requiring immediate medical intervention	5
Treatment carried out since time of onset	6
Allergies	7
Time of accident, illness or injury	8
History of events	9
Reason for admission	10
Effect of treatment / drugs / medication history	11
Any significant previous medical history	12
Location and address of incident	13
Whether the patient's family are aware that the patient is in hospital	14
Details of the patient's next of kin	15
Social circumstances of the patient	16
Any other information (Medical Insurance)	17

4.3.2.19 Non-specialist Nurses Itemized Structured Ranking of the Handover

The non-specialist registered nurse sample (n = 37) were asked to rank the phrases below (in order of importance 1 to 17) for their handover procedures and practices. The largest proportion (43.24%; n = 16) of non-specialist registered nurses ranked the patient's name in position number one. 27.03% (n = 10) ranked the patient's age in position number two, and 21.62% (n = 8) of them ranked the reason for admission in position number three. Problems requiring immediate medical intervention were ranked in position 5 by 18.92% (n = 7). Therefore, the non-specialist registered nurses had a total different priority system when ranking the order of information that was contained in the handover practices and procedures, (See table 4.18).

Table 4.18 Non-specialist Nurses Itemized Handover Ranking

Non- ICU or ER Trained Registered Nurses	Rank
The patient's name	1
The patient's age	2
Reason for admission	3
Time of accident, illness or injury	4
Problems requiring immediate medical intervention	5
Any significant previous medical history	6
Treatment carried out since time of onset	7
Time drugs and medication administered	8
Allergies	9
Suspected injuries or illness	10
Effect of treatment / drugs / medication history	11
History of events	12
Location and address of incident	13
Whether the patient's family are aware that the patient is in hospital	14
Details of the patient's next of kin	15
Social circumstances of the patient	16
Any other information (Please specify) Medical Aid or Medical insurance	17

On examination of this data, with regard to ranking of the sequence of phrases that are contained in handover practices, a comparison was conducted between specialist registered nurses (n = 37) versus non-specialist registered nurses (n = 36), in order to ascertain whether the difference in ranking was significant.

The first statistical significance that was prevalent was the patient's name, as 43.24% (n = 16) non-specialist registered nurses ranked it in position number one. Conversely, 18.92% (n = 7) of the specialist registered nurses ranked the patient's name in position number 12. This produced a Fisher's Exact value of p = 0.046, which indicated that the non-specialist nurses would like to know the patients name as this was a reference point for them to work from, as it personalised the patient. The specialist nurse knows that the name of the patient comes into the foreground, only after they have completed their handover of the essential life saving and life

sustaining pertinent information, as this will have an effect on the patients' outcome and the continuity of care.

The second statistical significance was the time of the accident, illness or injury in other words it's onset. Results indicated that 16.22% (n = 6) of non-specialist registered nurses ranked this in position number four, whereas 18.92% (n = 7) of the specialist registered nurses ranked this in position number 10. This produced a Fisher's exact value of p = 0.047, even although it is essential to know whether one's primary emergency care is initiated within the so-called "Golden Hour", which ultimately improves patient outcome. Generally, patients are often brought into the emergency care unit by paramedics, who have initiated life saving emergency care procedures in the field.

The third statistical significance that was prevalent was the treatment carried out since the time of onset of the patient's condition. Specialist registered nurses (21.62% / n = 8) ranked this in position number four, whereas 21.62% (n = 8) of non-specialist qualified registered nurses ranked this in position number seven. This produced a Chi^2 value of p = 0.008 and a Fisher's Exact value of p = 0.002. Therefore, it is important for the specialist qualified registered nurses to know which treatment the patient has already received, in order for them to predict which changes should occur in the patient, as well as for them to structure the nursing care plan in order to ensure the best possible outcome for the patient.

The fourth statistical significance that was prevalent was allergies. Almost a quarter (24.32% / n = 9) of specialist registered nurses ranked allergies as position number seven, whereas 18.92% (n = 7) of non-specialist qualified registered nurses ranked allergies as position number nine. This produced a Chi^2 value of p = 0.017 and a

Fisher's Exact value of p = 0.005. The recognition of allergies with regard to the handover is pertinent. This result was concerning as if an allergy is not declared emphatically in the handover and a medication is administered to that patient and that patient is allergic to it. This may result in an anaphylactic shock or in worst-case scenario, even death.

The fifth statistical significance that was prevalent was the patient's social circumstances. Almost a quarter (24.32% / n = 9) of specialist registered nurses rated the social circumstances of the patient in position number 14, whereas the 22.22% (n = 8) of the non-specialist registered nurses rated the social circumstances of the patient in position 16. This produced a Fisher's Exact value of p = 0.023. Thus, the specialist qualified registered nurse knows that often the patient's social circumstances, for example if the patient lives in an informal settlement under conditions of severe poverty, they are more likely to be infected with certain diseases for instance tuberculosis, conversely patients that come from very affluent backgrounds are more prevalent to suffer from diseases such as coronary artery disease. By the registered nurse knowing this information it aids them in structuring an adequate nursing care plan, thus ensuring the best possible outcome for the patient.

4.4 Summary

Sample characteristics indicated that most participants were female, the mean age 36 years (SD = 7.88) with 41.88% (n = 49) of them obtaining their registered nursing qualification by completing a two-year bridging course from staff nurse to registered nurse. Approximately one third of the participants (32%) were qualified as

either intensive care or trauma and emergency specialist nurses. The majority (98%) stated there was a need to repeat the handover at least twice, and it was most often repeated to either a doctor or another nurse. Information that should be contained in the handover was the patient's name, age, reason for admission, medication given, allergies and conditions requiring immediate medical attention. There was minimal statistical significant difference between the clinical nurse specialists and the experienced nurses as well as between the experienced nurses and the non-specialist nurses, but there was a statistical significance ($p \leq 0.05$) between clinical nurse specialists versus non-specialist registered nurses. From this it is possible to deduce that specialist nurses who had the additional qualification were able to differentiate the importance of content and sequence of the handover procedure. While some non- specialist registered nurses had emergency care unit experience, there was no statistical significance between experienced non-specialist or nurses with no emergency care unit experience. Only 10.26% of registered nurses had received formal training with regard to handover practices and procedures. Therefore 89.74% of them had not received any type of formal training on performing a handover, thus a need for formal training or a sequenced handover procedure pocket card maybe be useful.

CHAPTER FIVE

DISCUSSION OF RESULTS, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of this study was to determine the handover practices of registered nurses working in emergency care units in private sector hospitals. In order to determine this, the objectives were set firstly, to determine the views and opinions of registered nurses regarding the information content of the handover procedure. The second objective was to determine the views and opinions of registered nurses regarding current handover practices with reference to the sequence, frequency and usefulness and thirdly, to determine if there is a difference between specialist trauma and emergency or intensive care nurses versus non-specialist nurses, with reference to their views and opinions regarding handover practices and procedures.

5.2 Discussion of Results

A population size of 142 participants was obtained, of which 117 registered nurses participated in the study. Therefore 82.39% (n = 117) returned their completed 96 item self-administered questionnaire.

5.2.1 Demographics, Education and ER Employment Status

Nursing has always been a female dominated profession. According to The South African Nursing Council statistics for 2008, there were 6892 male registered nurses and 101 086 female registered nurses currently practicing. Thus a South African

national ratio of male ($RN_{♂}$) to female ($RN_{♀}$) is 1:15. This studies sample showed a similar trend, with 20.51% of the participants were male ($n_{♂}$ = 24) and 79.49% were female ($n_{♀}$ = 93) with a ratio of 1:4. Even though nursing is still a female dominated profession, this study indicated that the males are in a higher proportion in the private sector emergency care unit setting. The average age was 36 years (SD = 7.88). With reference to clinical nurse specialist this research showed that less than one third (n = 37; 31.62%) of the nurses working within these emergency care units are specialist registered nurses, who held a senior position within the unit.

Emergency care units are highly specialised units within a hospital and should ideally only be staffed by specialist registered nurses. In other words, registered nurses who have an additional qualification in either intensive care or trauma and emergency nursing science. The benefit is that clinical nurse specialists have a lucid consensus about what constitutes a high-quality handover, in that it is swift, goal-orientated and concise (Payne, Hardey and Coleman, 2000:283).

In this study less than one third (31.62%; n = 37) of nurses working in emergency care units are in possession of such a specialist nursing qualification. A study by Scribante and Bhagwanjee (2007:1318) indicated similar results; “nursing in South Africa faces the challenge of an acute shortage” of clinical nurse specialists and experienced nurses, staffing specialized units. They found that only 25.6% of the registered nurses working within specialised units were registered clinical nurse specialist, therefore 74.4% of them were not specialist registered nurses.

More than two thirds (68.38%; n = 80) of the registered nurses working in emergency care units possibly do not have the necessary education to be managing patients that are critically ill or injured. Uys and Naidoo’s (2004:7) study indicated similar

results and highlighted that there are a number of problems with regard to the handover, nursing documentation and the quality of care given by non-specialist nurses in South Africa. They suggested, however, that many of these issues could be resolved if these nurses received the appropriate training and education, as training results in better quality of healthcare. In the literature (Lally, 1999; Payne, et al., 2000; Manias and Street, 2001; Bruce and Suserud, 2005; Jenkin, et al., 2007; McFetridge, et al., 2007; Meissner, , et al., 2007; Ye, , et al., 2007 and Ferran, et al., 2008) reviewed, it was apparent that in Australia, Canada, the European Union and the United States of America, almost all registered nurses working in specialised units like emergency or critical care units hold a specialist nursing qualification.

Evaluation of the participants' basic nursing education and qualifications revealed that only 36.75% (n = 43) of them had completed either the four-year diploma or degree in general nursing. Just over one seventh (15.39%; n = 18) of the participants, had completed the three year diploma in general nursing. This diploma was offered in South Africa prior to 1988, therefore many of these nurses in possession of this qualification had over 20 years experience within the nursing field. Almost 6% (5.98% ; n = 7) of the participants had converted the foreign state registered nursing qualification to a South African Nursing Council registered nurse's equivalent qualification, thus allowing them to practice as registered nurses within the Republic of South Africa. Many of these foreign qualified registered nurses come to South Africa in order to gain experience or to upgrade to a specialist registered nurse, as often the specialist qualifications are not available or difficult to obtain in their home countries. This study indicated that 41.88% (n = 49) of the participants

were former staff nurses who had completed a two-year bridging course in order to be qualified as registered nurses.

A comparative analysis was performed on the basic qualification of the intensive care or trauma and emergency specialist registered nurses (n = 37) versus the non-specialist nurses (n = 36). It was noted that the majority (54.05%; n = 20) of specialist registered nurses had completed the four-year diploma or degree in general nursing (D4). On the contrary the majority (59.46%; n = 22) of non-specialist registered nurses had completed the two-year bridging course from staff nurse to registered nurse. Therefore the clinical nurse specialist had completed a four year basic nursing programme as opposed to the non-specialist nurses who mostly achieved their basic qualification by virtue of a bridging course. This analysis between the basic nursing qualifications of the specialist versus the non-specialist registered nurse group produced a statistically significant ($p \leq 0.05$) Fisher's Exact value of $p = 0.023$. It may be concluded that nurses who graduated with a four-year diploma or degree in general nursing, which is generally completed at university level, were more inclined to continue their studies and upgrade their qualification to a postgraduate specialist nursing qualification as either an intensive care or trauma and emergency specialist registered nurse.

Conversely registered nurses, who obtained their basic nursing qualification by virtue of a bridging course from staff nurse to registered nurse, were less likely to pursue a specialist nursing qualification once they had concluded their basic training. Therefore, basic nursing training may probably influence a registered nurses future career path with regard to further education and acquiring a specialist registered nurse qualification.

Education is imperative, but without the relevant practical working experience within a specialised environment it is of little use. The effectiveness of the emergency nurses' handover procedure (Bruce and Suserud, 2005:208), is influenced by their formal theoretical training as well as their practical experience. When an overview of the sample groups' (n = 117) relevant practical working experience within emergency care units was undertaken it indicated that 34.19% (n = 40) of the participants had less than two years practical working experience within emergency care units.

Data indicated that experience was related to a registered nurse obtaining a specialist nurse qualification. Statistical significance ($p \leq 0.05$) was evident in this analysis with a Fisher's Exact, which showed that approximately one third (32.43%; n = 12) of specialist registered nurses had more than 10 years working experience within emergency care units, as opposed to the majority (61.11%; n = 22) of non-specialist registered nurses having less than two years working experience in emergency care units. This indicated that specialist registered nurses were more likely to stay within a specialty. It may also mean that the management of the emergency care unit was less likely to keep non-specialist nurses within their units who did not wish to pursue a specialist qualification. Also non-specialist nurses are possibly more likely to leave the emergency care unit environment for a less pressurised ward post, as the daily expectations of the doctors and multidisciplinary team way exceeded their knowledge and practical experience. This can be supported by the literature (Lally, 1999; Manias and Street, 2001; Bruce and Suserud, 2005; Broekhuis and Veldkamp, 2006; Jenkin, et al., 2007; McFetridge, et al,. 2007) who state that experience, knowledge and training have a direct impact on the quality as well as the continuity of care.

Specialist nurses are not only highly trained nursing professionals, but also have a vast knowledge of medical conditions, medications, invasive medical and surgical procedures as well as a holistic patient orientated nursing care, due to their extensive years of experience within emergency care units. In support of this (Bruce and Suserud, 2005:204), the specialist nurse is able to relay important information in the handover by virtue of their training, experience and using their “clinical eye”, which would assist them to evaluate the patient’s condition during the handover procedure. Furthermore, this would support and maintain the continuity of care. Therefore the combination of specialist training and qualification goes ‘hand in hand’ with years of experience, ensuring a high standard in safety, quality patient care and ultimately the continuity of care. Specialist nurses incorporate handover information into their nursing care plans and are able to perform a high quality handover (Meissner, et al., 2007:540), due to their “superior knowledge and experience.”

While the non-specialist registered nurses are unable to offer the same level of care to the critically ill or injured patient that is treated on a daily basis within emergency care units, due to the fact that they lack the necessary training as well as emergency care unit specialised practical working experience. Therefore, in an ideal clinical practice context all emergency care units should only be staffed with clinical nurse specialists.

Another possible problem affecting the handover procedure can very well be the staffing requirements of the emergency care units. Scribante and Bhagwanjee (2007:1315) state that the Department of National Health as well as the South African Nursing Council have acknowledged that there are severe shortages of registered nurses, particularly specialist nurses. The majority (56.41%; n = 60) of

registered nurses working in emergency care units were employed on a full time basis (40 hour week), but 43.59% (n = 57) of the staffing requirements are covered by either part time (20 hours a week), student ICU or ER nurses, volunteers or by nursing agency staff. According to Payne, et al., (2000:283) non-specialist and student nurses often encountered problems with the handover process and often favoured slower handover, with a reduced amount of medical terminology, thus neglecting to pass on relevant patient information. This can create problems with regard to handover practices, as these nurses are not working in these emergency care units on a regular basis, thus they may not be integrated into the full time staff's nursing team. As a result they are not familiar with the units' standards regarding the handover practices and procedures. This also indicated that the management was more committed to keep clinical nurse specialist full-time employed within their units.

A comparison was made between specialist (n = 37) and non-specialist registered nurses (n = 36) with regard to their employment capacity within emergency care units. Results (Fisher's Exact $p \leq 0.05$) indicated that the majority (64.86%; n = 24) of specialist registered nurses were working in full time employment in their respective emergency care units, whereas just under one third (30.55%; n = 11) of the non-specialist registered nurses, which consisted of part time (20 hours a week) together with nursing agency staff. Therefore the specialist registered nurses were more likely to be in full time employment, thus in a stable working relationship with their relevant private sector hospital group emergency care unit. They have the advantage of being able to familiarise themselves with the units standards with regard to handover practices and procedures.

On the other hand the staff members that were not employed in a full time capacity often were not able to familiarise themselves with unit-standards and the handover procedure. This is especially the case with nursing agency staff concerned, as when an emergency care unit is short-staffed and requires to enhance its staffing requirement to meet patient case loads, they simply phone a nursing agency and a registered nurse will be sent to that unit for a limited period of time and in some cases only one 12 hour shift. The South African National Audit conducted by Scribante and Bhagwanjee (2007:1316) indicated that about one third of the staff of specialised units was sourced from nursing agencies and that the vast majority (91.2%), of units in the private sector utilised agency staff. In this study 30.77% (n = 36) of the emergency care units staffing requirements was made up of part-time and agency staff, of which only 22.22% (n = 8) of them were specialist nurses. Therefore, in most cases these part-time and agency registered nurses are not clinical nurse specialists and they often have limited experience with working in emergency care units and subsequently with handover practices and procedures. This research produced almost identical results to another South African research performed in specialised units by Scribante and Bhagwanjee (2007), in that both found that just under one third of these units staffing requirements are sourced from nursing agencies.

The severe shortage of registered nurses especially clinical nurse specialists in South Africa (Scribante and Bhagwanjee, 2007:1317) is concerning. Due to staff shortages in emergency care units, often nursing agency staff is called upon to cover these shortages, but with units having budget constraints, it is often decided to rather employ non-specialist registered nurses than specialist registered nurses as they are

more economically viable for the unit. Scribante and Bhagwanjee (2007:1317) state that registered nurse staffing ratios directly affect “patient mortality and morbidity.” Ultimately this decision will impact upon the handover practices and procedures which will have an effect on the quality as well as the continuity of patient care within emergency care units.

5.2.2 Handover Training, Documentation and Procedures

In order to be deemed competent at any procedure, a registered nurse is required to receive both theoretical as well as practical training. This would also be the case with the handover, as it is deemed a procedure that routinely takes place within the nursing profession. In this study only 10.26% (n = 12) of the registered nurses working in emergency care units had received some form of formal training regarding handover practices and procedures. A study undertaken by McFetridge, et al., (2007:266) demonstrated that there is a deficiency in “consistent structure to the patient handover”, due to a lack of formal training. Therefore, the formal handover training gives the registered nurse a structure to perform a handover that contains all the relevant information to maintain patient safety and the continuity of care. According to Manias and Street (2001:373), nurses learn to how to handover via prescribed training programs. In this study the majority (70.09%; n = 82) said that they had learned how to conduct a handover by listening to what other colleagues say. A study conducted in the United Kingdom by Jenkin, et al., (2007:143) also indicated that preponderantly registered nurses learnt how to handover by listening to how colleagues performed the handover. The problem with this is that if more than two thirds (68.37%; n = 80) of the registered nurses working in emergency care units are not registered clinical nurse specialist, which implies that the likelihood of non-

specialist staff learning how to perform a proper, logical and quality handover was not available. This was also indicated by a South African study undertaken by Uys and Naidoo (2004:4), which indicated that three out of four nursing handovers were inadequate and that quality of nursing records was very poor. Therefore, if only a quarter of nursing handover are adequate and if just over 10% of nurses received some form of formal training regarding handover practices and procedure, this is an indication that there is a need for structured training in South Africa. It is apparent that handover training needs to be offered in addition to short courses, at both basic as well as post basic South African nursing training institution. The literature (Uys and Naidoo, 2004; Ferran, et al., 2008; Wayne, Tyagi, Reinhardt, et al., 2008) suggests that standardised handover structure along with relevant training improves handover practices and procedures.

Nursing and handover documentation forms the basis for the effective handover. Therefore a number of questions were then posed to the sample group regarding the structure, layout and sequence regarding the handover documentation and procedure. A South African study performed by Uys and Naidoo (2004:5) in which 137 nursing records were audited indicated that the quality of nursing records were generally unacceptable. This resulted in three out of four handovers being inadequate to maintain the continuity of care. This may have medico-legal implications as well as an effect on patient outcome.

In order to extract the correct handover information from the patient documentation, the clarity and design needs to be user friendly. A comparison was made between specialist (n = 37) versus non-specialist registered nurses (n = 36) regarding the clarity of design of the handover information contained in current patient

documentation and the following results (Fisher's Exact produced a value of p = 0.026) were obtained: the majority (88.89%; n = 32) of specialist registered nurses found that the design of handover information contained in current patient documentation is clearly laid out, but on the contrary, 17.14% (n = 6) of the non-specialist registered nurses were not sure if the design of the handover information contained in current patient documentation was clearly laid out or not. This statistically significant result (p = 0.026) again emphasised that due to the lack of specialised training regarding handover practices and procedures these non-specialist nurses were unable to identify if the documentation contained adequate structured information in order for them to perform an effective handover.

The majority (75.47%; n = 80) of the registered nurses who participated in the study found that the sequence of information contained in current patient documentation is in a logical format. According to Wayne, et al., (2008:484) a logical and standardised sequence of the handover "increases its accuracy and completeness". Therefore in this study the format of patient documentation was not a primary problem. However, it became apparent that the main problem with the handover was the skill of the registered nurse in locating, extracting and summarising the pertinent information that should be contained in a handover. This is one of the skills that will need to be addressed in future training programmes on handover practices and procedures.

The sample (n = 109), was asked if the current patient documentation contains all of the patient information you require for the handover. The majority (73.39%; n = 80) of the participants stated that current patient documentation does contain all of the patient information they required to perform the handover, whereas in 11.01% (n = 12) of them stated that they were not sure and 15.60% (n = 17) of them said that

current patient documentation does not contain all of the patient information they required to perform the handover. A South African study undertaken by Uys and Naidoo (2004:6) indicated that patient documentation skill were gravely lacking and that often documentation for a particular patients was not completed for days, thus making the continuity of care hard to follow. This study indicated that the lack of training regarding patient documentation and handover skill seemed to substantiate why registered nurses were battling to find information required for the handover.

Then the registered nurses (n = 109) were asked if the content of information used in current patient documentation was easy to understand, 11.93% (n = 13) stated that the content of information used in current patient documentation was not easy to understand, while 9.17% (n = 10) of them were not sure if the content of information used in current patient documentation was easy to understand or not.

The sample group (n = 107) was asked if they could always find the information that they required in order to perform the handover. Just over half (56.07%; n = 60) stated that they can always find the information they require in order to perform the handover, whereas almost one third (32.71%; n = 35) stated that they could not always find the information that they required in order to perform the handover and 11.21% (n = 12) were not sure if they could find the information that they required in order to perform the handover. Therefore 43.93% (n = 47) had problems in finding the information required to perform the handover, this indicates that there was a lack of training offered on correct documentation practices and on extracting the essential information required to perform the handover.

Generally the specialist nurses were relatively satisfied with current patient documentation and what information they were able to extract from it to perform the

handover. However, 19.36% of all the participants were not content with the documentation and perhaps something of concern is that a 9.03% of all the participants and 17.14% of the non-specialist nurses were not sure at all if patient documentation was up to the required standard in order for them to perform the handover. This evidently creates concern, as 28.45% of the participants were unsure about documentation or dissatisfied with documentation, which indicated that documentation was of an inadequate standard in order to perform a handover. In this study only 31.62% (n = 37) of the participants were clinical nurse specialists. Payne, et al., (2000:283) state that a significant amount of a specialist nurses' time is dedicated to the formation of written documentation, which constitutes the fundamentals for an ideal handover. Therefore the lack of active ongoing training regarding documentation skills, locating pertinent information and handing it over, appears to be the area this study established that requires more regular training in order to maintain the continuity of care.

It was important to find out to whom the primary handover was conducted. The data indicated that 37.61% (n = 44) of the registered nurses that participated in this study stated that their first handover was usually to the emergency doctor on duty, as the doctor would assess the patient once the nurse had stabilised the patient and finished with their primary assessment. In second place with 27.35% (n = 32) of the participants said that they would conduct the first handover to the registered nurse that was acting as the emergency care unit shift leader for that day. The shift leader was responsible for allocating beds to the patients as well as making the decision when to close the emergency care unit and go on to divert, which means that the

resuscitation room is full and ambulances would have to redirect their patients to another hospital for a limited period of time.

A comparison was made between specialist (n = 37) versus non-specialist (n = 36) registered nurses with regard to whom they conducted their first handover to. Almost half (47.22%; n = 17) of specialist registered nurses would hand over to the emergency doctor on duty, which showed they would seek the highest medically qualified person within the unit to assess the patient and thereafter the multidisciplinary team could make a decision on the continuity of patient care. Manias and Street (2001:133) state that doctors frequently relied on specialist nurses knowledge and experience to guide them in making clinical judgments that would be in the patient's best interest, in order to maintain the continuity of care.

Conversely 27.03% (n = 10) of the non-specialist registered nurses would hand over to the emergency doctor on duty, whereas 27.03% (n = 10) of them would hand over to the emergency care unit shift leader. Only 13.89% (n = 5) of specialist registered nurses would delegate their patient care with their primary handover to a staff nurse or nursing assistant, while 24.32% (n = 9) of the non-specialist registered nurses would be satisfied to delegate a patient's care with their primary handover to a less qualified staff nurse or nursing assistant. Almost one quarter (24.32%; n = 9) of non-specialist registered nurses reported that they would let a staff nurse or nursing assistant take care of a critically sick or injured patient that came into the emergency care unit. Specialist registered nurses had the insight, with their high level of training to realise that most patients that arrive at the emergency care unit require advanced life support skills and therefore their primary handover would be to the emergency doctor on duty, in order that a multidisciplinary team decision could be made on how

best to stabilise and continue treatment on that patient, thus ensuring the continuity of care. This is supported in a study undertaken by McFetridge, et al., (2007:266) which indicated that the experienced specialist nurse had a superior capability in “prioritizing the information” that should be conveyed in the handover.

It was then important to investigate how often the registered nurses required repeating the handover regarding the same patient in the emergency care unit. Almost all (98.29%; n = 115) of the participants said that they needed to repeat the handover. Then 78.26% (n = 90) of the participants stated that it was most likely to repeat the handover by priority one patients which were patients that required immediate life saving medical treatment. This study indicated that 41.03% (n = 48) needed to repeat the handover twice. Similar results were obtained by a study done in the United Kingdom (Jenkin, et al., 2007), which found that the handover was hardly ever repeated more than twice; 29.91% (n = 35) of the participating registered nurses said that they are required to repeat the handover more than twice. Therefore it became evident that repetition of the handover regarding the same patient is standard practice and registered nurses should be proficient in this procedure. Jenkin, et al., (2007) suggest that the handover should be performed in two phases. In other words the crucial information should be articulated immediately and then the handover can be repeated once preliminary treatment has been initiated. Since repetition of the handover is so prevalent within emergency care units, registered nurses should be just as proficient in the handover procedure as they are in other procedures. For example: setting up intravenous lines, giving medication, taking blood pressure or inserting a urine catheter. Just as these invasive and non-invasive procedures are expected to be carried out without harming or endangering a

patient's life, so should the handover procedure be carried out in a safe manner which ensures optimal continuity of patient care. Thus structured formal training needs to be an ongoing process, in order to ensure the handover is performed routinely and correctly.

In this study an investigation was undertaken regarding to whom the registered nurse needed to repeat the handover information to; 38.46% (n = 45) would hand over the patient to the emergency doctor on duty. A comparison was made between specialist registered nurses (n = 37) versus non-specialist registered nurses (n = 36), regarding to whom they need to repeat handover information to, the statistical tests showed a statistical significance between these two groups with regard to repeating the handover to the doctor on duty, with the Fisher's Exact value of p = 0.033. Therefore the clinical nurse specialist would see the need to keep the doctor updated on the patient's condition, as the doctor would prescribe the medical treatment, whereas the non-specialist nurse would not anticipate this. The majority (56.76%; n = 21) of specialist registered nurses would repeat the handover to the emergency doctor on duty, a consultant, a specialist physician or a surgeon. While only 27.03% of the non-specialist registered nurse group would hand over to the emergency doctor, none of them would handover to a consultant, specialist physician or surgeon. Therefore, the specialist qualified registered nurse would often recognise the need to repeat the handover for possibly two reasons: One was for interdisciplinary collaboration and the other to maintain the continuity of nursing care.

Specialist nurses were more likely to hand over the patient's condition, treatment and triage category to either the doctor that was on duty in the emergency unit or to a consultant or specialist. Bruce and Suserud (2005:208), state that the specialist

nurse plays an effective role in ensuring accurate triage and correct treatment, by virtue of their highly specialized skills, which are derived from formal education and significant practical experience. This indicates that specialist registered nurses frequently have the pathophysiology of the condition of the patient in the back of their mind. Therefore they would often choose to hand over to a consultant or specialist as they felt that the doctor on duty in the emergency unit was not able to give orders or advice about the specialised level of care the patient may require. Conversely, non- specialist registered nurses would often handover the patient to another nurse, which indicates that the lack of specialised knowledge and training often did not allow them to have in-depth understanding as to the optimum patient management and care.

The exact location of where the repetition of handover took place within the emergency care unit was of primary relevance to this study. The majority (58.97%; n = 69) of handovers took place within the casualty unit. When a comparison was made between specialist (n = 37) versus non-specialist (n = 36) registered nurses, the following appeared: 32.43% (n = 12) of specialist registered nurses would most often repeated the handover in the resuscitating room whereas only 21.62% (n = 8) of the non-specialist registered nurses would repeat the handover in the resuscitation room. Even though there was no statistical significance between specialists versus non-specialist nurses with regard to repletion of the handover in the resuscitation room, the results indicated that the clinical nurse specialist was more likely to repeat the handover in the resuscitation room than the non-specialist nurse. This was also evident in a study conducted by Jenkin, et al., (2007:144), who found that the handover was regularly repeated for priority one patients in the

resuscitation room. This demonstrated once again that almost one third (32.43%) of specialist qualified registered nurses saw the need for repeating the handover of the critically ill or injured patient on a regular basis. Therefore, they would repeat the handover in the resuscitating room where priority one patients are treated; as the patient's condition would change they would update the doctor, so that appropriate management could be carried out, thus ensuring the continuity of patient care.

5.2.3 Content and Structured Ranking of the Handover

The sample (n = 105) was asked what information their current handover contained. The majority (89.52%) stated that use of the “MIST” acronym offered by Hodgetts and Tuner (2006) formed the basic format for the handover. Therefore MIST stands for: M = mechanism of injury, I = illness or injury, S = signs and symptoms, T = treatment and time. The participants then further added that the patient's name and age as well as patient management, examinations, diagnosis, vital signs, allergies, medication, past medical history, and last oral intake, cause of the injury, blood type, findings of examinations, the name of the attending emergency doctor who's responsible for that patient, x-rays, urine output, neurological examinations and patient observations form the basis for the handover routine.

The sample of registered nurses (n = 117) were then asked what additional information should be contained in the handover and the following answers were provided: patient's risk factors for example asthma, diabetes, epilepsy, thyroid problems, heart conditions, and so forth. Then the side-effects of any medication that they have been administered, that the patient had any loss of consciousness on scene or did they currently have a decreased level of consciousness according to the Glasgow Coma Scale. Similar results were obtained in study undertaken by

Jenkin, et al., (2007:145), where they stated that the most common additional information requested during the handover was: the “exact mechanism of injury” and “circumstances of the accident or event” that had led to hospital admission, in addition to this the “patient’s social history” as well as “down times” during Cardio-pulmonary-resuscitation (CPR), was deemed important.

Thereafter what was the patient's HIV status and were they on any antiretroviral drug therapy. This was deemed important as South Africa has a high HIV / AIDS prevalence; therefore many patients are at higher risk to infection and other diseases such as tuberculosis due to their compromised immune status. Also of importance seemed to be if patients being treated in the emergency care unit were there for follow-up visits or if they needed to be informed to come back for follow-up visit; for example to remove a plaster cast or the removal of sutures. Similar results were obtained in a study undertaken by Ye, et al., (2007:439), which indicated that “discharge planning and follow up” appointments played a vital role in the handover, in order to maintain the continuity of care.

Subsequently what played an important role was whether or not the patient had received their anti-tetanus injection, as this is standard procedure in almost all trauma patients. The patient's weight was extremely pertinent in paediatric patients due to working out the dose of medicine required.

Previous emergency room visits played an important role, especially in cases where neglect or abuse was suspected. The onset of pain was also of importance especially in patients suffering from chest pain. Chronic conditions such as high blood pressure, asthma or chronic obstructive pulmonary disease were of importance as they would have an effect on the choice of treatment rendered to

these patients. Then another important item was whether the patient's emergency room file had been opened or not, this was important so that registered nurses could make nursing notes regarding the progression of care of the patient as well as it is where the stock charge sheet is kept, as this study was undertaken within the private sector hospital group.

Registered nurses were concerned if the patient's family were informed that the patient was in the hospital and the discharge status of the patient seemed to be important to them. For example, when a patient is discharged would they have relatives at home to look after them or if they were discharged with a prescription for medication were they able to obtain this medication from the local pharmacy. Items such as: the patients' past family medical history, past operations that they have had, psychological status of the patient, whether the patient has a neurological deficit for example from a spinal injury, was also identified. Then items such as the patient's oxygen saturation, whether the patient had bowel movements or not in order to prevent an ileus (mechanical or paralytic bowl obstruction, which is a life threatening condition) from occurring, and whether a nursing care plan had been put into action, as this would ensure the continuity of care, were identified. The haemo-dynamic status of the patient, as well as whether the patient required mechanical ventilation and the lung compliance to that ventilation seem to also be an important factor. Then whether the patient required physiotherapy; if the patient required an intensive care unit; or ward bed and if it had been organised for the patient. Thereafter which paramedic service brought the patient into the emergency care unit, was important as it would give the registered nurse some indication of what level of pre-hospital care was rendered to the patient in the field, whether it was basic life support,

intermediate life support or advanced life support, this would influence the prognosis of the patient, as the paramedics often rendered the vital life saving skills and treatment within the so-called golden hour. This is essential as withholding intermediate or advanced life support from a patient, could cost them their life.

The final item this study looked at was how registered nurses (n = 117) working in the private sector emergency care units (n = 8), would rank in order of importance certain items that are contained in the handover. Most important was what the first five items would possibly be. Ye, et al., (2007:438) state that; the challenge with handover practices lies in the successful conveyance of all the essential patient information in the most “time-efficient” manner. Overall, the registered nurses found that the patient's name, followed by the patient's age, the time drugs and medication were administered, reason for admission and the patient's allergies were at the top of the list. In a study undertaken in the United Kingdom (Jenkin, et al., 2007): the reason for attendance, problems requiring immediate medical intervention, treatment carried out since the time of onset of the incident and any significant previous medical history were considered as essential information that should be contained in the handover. A comparison was conducted between specialist (n = 37) versus non-specialist (n = 36) registered nurses there seemed to be a number of differences with this ranking.

Specialist registered nurses ranked problems requiring immediate medical intervention in position number one. This is of vital importance as once immediate life saving have been performed, the patient needs to be reassessed to make sure the life threatening problem does not arise again. For example if a patient comes into the emergency care unit with a tension pneumothorax immediate thoracentesis

needs to be performed, this condition needs to be monitored until an underwater chest-drain can be put into place; if there is a pressure build-up again within the patient's chest cavity a second emergency chest decompression needs to be performed.

In position number two was the patient's age, which is extremely important especially in paediatric patients as by using the formula (Age x 2 + 8 = Paediatric Weight), they are able to work out which drug dose needs to be given (paediatric drugs are usually administered in Δ milligram per kilogram body weight) so certain diseases are more prevalent in certain age groups for example myocardial infarction in over 40 year old and cerebral insults in over 60-year-olds. Thereafter the reason for admission was important to them as this would be an indication of the patient's chief complaint and from this they were able to start diagnostic procedures and treatment.

In fourth place they ranked treatment carried out since the time of onset. This was important in order to ascertain if the patient's condition was improving or not and which medication had been given or what was still a quiet to be given it would also give insight into possible side effects and complications that may arise as well as allowing the specialist qualified registered nurse to structure a nursing care plan in order to suit the patient’s requirements. In fifth place they ranked the time of drugs and medication administered. This would allow the clinical nurse specialist to anticipate when more medication was required for example pain medication, as they know the half life of drugs that have been administered to the patient. Therefore specialist registered nurses anticipate and calculate the outcome of the patient within the emergency care unit based on these specialised training, experience and

qualification. This allows them to plan further care and anticipate complications that may arise, which allows them to provide optimal continuity of patient care.

The non-specialist registered nurses ranked the patient's name in position one, followed by the patient's age, followed by the reason for admission, in fourth place they ranked the time of accident illness and injury and only in fifth place that they ranked problems requiring immediate medical intervention. A number of statistical significance of this became evident in this section regarding specialist registered nurses (n = 37) versus non-specialist registered nurses (n = 36). The first one was regarding the patient's name, where non-specialist registered nurses ranked it in position number one. On the contrary specialist qualified registered nurses ranked it in position number 12. This produced a Fisher's Exact value of p = 0.046. This is due to the fact that specialist nurses often concentrate on what is important to stabilise a patient first and only later will they find out the patient name, once the patient is stable. This can be supported by the findings of McFeridge, et al., (2007:264) that specialist “nurses immediately focused on the critical needs of the patient”; any superfluous information become secondary.

The non-specialist registered nurses ranked the time of the accident illness or injury in position number four where as the specialist registered nurses ranked this in position number 10. This produced a Fisher's Exact value of p = 0.047. Even though it is imperative to know whether primary emergency medical care was initiated within the so-called “Golden Hour”, specialist registered nurses realised that generally patients are brought into the emergency care unit by paramedics, who have initiated life saving emergency care procedures such as setting up intravenous therapy within the field. Therefore, it was not a priority for them in the handover procedure as this

topic would be covered under the heading treatment carried out since the time of onset of the patient's condition. Specialist registered nurses ranked the treatment carried out since the time of onset of the patient's condition in position number four and non-specialist registered nurses ranked this in position number seven, which produced a Fisher's Exact value of p = 0.002. This shows that specialist nurses look at patient treatment from a pathophysiological point of view from onset to the present, whereas non-specialist nurses tended not to be able to see the big picture of patient treatment. In other words where the patient has come from and in which direction they are moving with regard to the continuity of care.

With reference to allergies the overall or group rated it in position number five, the specialist qualified registered nurses rated allergies in position number seven. This was possibly done by specialist registered nurses who were able to react to and treat anaphylactic shock. On the other hand the non-specialist registered nurses rated allergies in position number nine. Therefore the comparison of specialist versus non-specialist registered nurses with regard to allergies produced a Fisher's Exact value of p = 0.005. The recognition of allergies with regard to the handover is pertinent. This result was concerning, as if an allergy is not declared emphatically in the handover and a medication is administered to the patient and that patient is allergic to that medication this may resulting anaphylactic shock and in a worst-case scenario, even death.

With regard to the patient's social circumstances the specialist registered nurses rated this in position number 14, whereas the non-specialist registered nurses ranked this in position number 16, which produced a Fisher's Exact value of p = 0.023. Therefore, the specialist qualified registered nurse knows that often the

patient's social circumstances. For example, if the patient lives in an informal settlement under conditions of severe poverty, they would be more likely to be infected with certain diseases such as tuberculosis; on the contrary patients that come from very affluent backgrounds are more prevalent to suffer from diseases such as coronary artery disease. If registered nurses know this information, it aids them in structuring an adequate nursing care plan, thus ensuring the best possible outcome for the patient. This was supported by Jenkin, et al., (2007:145) study, were they also found that the patients social history played an important role in the handover process, as it aided the emergency room nurse to anticipate and plan further treatment or social aid prior to the patients discharge.

When this studies research data were analysed in its entirety there was a definite difference between intensive care or trauma and emergency specialist registered nurses versus non-intensive care or non-trauma and emergency specialist registered nurses. These specialist registered nurses by virtue of their training, experience and qualifications seem to be more competent with handover practices and procedures carried out in the emergency care units. Therefore, education plays a definite role in the efficiency and information content of handover practices and procedures. This in turn has an effect on the continuity of patient care.

5.3 Conclusions Drawn

After data analysis and review the following conclusions were drawn:

- Documentation used in current handover practices: The majority (> 73%) of the registered nurses found that the patient documentation was clearly laid out, easy to understand and contained most of the patient information

required to perform for the handover. Whereas just over half (56.07%) of the participants said that they can find the information required to perform the handover. This may have been due to lack on training in extracting the information required to perform a handover as well as to a lack in documentation skill, thus allowing documentation to be incomplete.

- Sequence, frequency and usefulness of the handover: The primary handover was most often conducted to the doctor (37.61%) or to the nursing shift leader (27.35%). Frequently of the handover repartition regarding the same patient was twice in 41.03% of the cases. The majority (58.97%) of the time the handover took place within the casualty unit, followed by the resuscitation room (23.08%) as location of where the handover was most often performed. The usefulness of current handover practices were perceived differently between specialist versus non-specialist nurses, as they would prioritise the handover structure differently. Although all registered nurses found that the handover was a task they all performed on a daily basis.

- Differences between specialists versus non-specialist registered nurses: There were a number of statistical significant differences between specialists versus non-specialist registered nurses with regard to prioritising of what should be contained in the handover. Clinical nurse specialists top five ranked as follows: Problems requiring immediate medical intervention, patients' age, reason for admission, treatment carried out since time of onset and time of drugs or medication administered. Whereas the non-specialist nurses top five ranked as follows: Patients name, patients age, reason for admission, time of accident, illness or injury and problems requiring immediate medical

intervention. Therefore specialist nurses were superior in prioritising the handover sequence and thus more proficient at the handover procedure.

- Formal education regarding handover practices and procedures: Only 10.26% of registered nurses in emergency care units had received any type of formal training regarding handover practices and procedures. Thus, the majority (89.74%) of registered nurses working in emergency care units had not received any form of formal training with regard to handover practices or procedures. In addition to this only 31.62% of them were registered clinical nurse specialists. Therefore, more than two thirds (68.38%) of the registered nurses working on emergency care units were not clinical nurse specialists. In other words specialist nurses were in the minority.

This studies result indicated that there are differences between clinical nurse specialist and non-specialist registered nurses with regards to training and proficiency regarding handover practices and procedures. Hence, there is room for improvement regarding handover practices and procedures, especially by registered nurses who have no experience or formal training with regard to working in emergency care units. These are highly specialised units where highly specialised care should be rendered at all times and ideally should only be staffed by registered nurses who are in possession of an additional qualification, in either intensive care or trauma and emergency nursing science.

5.4 Limitations of the Study

The limitations of this study are that the study was only conducted within one private sector hospital group in one province. Another limitation would be that this study was

purely an audit of what is contained in the current handover practices of registered nurses working in emergency care units. Therefore it did not measure the quality and effectiveness of current handover practices with regard to the continuity of patient care.

5.5 Recommendations

A number of recommendations are made in respect of clinical practice, nursing education, nursing management and nursing research.

- Clinical Practice: Theoretical training and research recommendations need to be applied in the practice. Therefore the implementation of a handover pocket card will assist in improving the handovers structure and sequence. It will also aid registered nurses in extracting the pertinent information the handover should contain. This pocket card can be simply placed over every resuscitation-bay and on the foot table on the emergency unit beds. This can be supported by Bhabra, et al., (2007:300) study which states that “the use of a pre-printed sheet containing important patient details almost entirely eliminates data loss during the handover.”

- Nursing Education: Only 10.26% of the registered nurses had received any kind of formal training regarding handover practices and procedures. Therefore, another recommendation would be regular training courses offered by the employer regarding handover practices and procedures, in order to upgrade their staff members’ handover procedures to a more competent level. The willingness to learn and the willingness to accept change is the key to education. Therefore it is imperative to encourage registered nurses to attend

training sessions, as training will ultimately improve the continuity of care and at the end of the day nursing is all about the patients' health.

- Nursing Management: Firstly, Unit-standards also need to be implemented with regard to handover documentation, as well as the verbal communication and logical order including pertinent information that the handover procedure needs to contain. Therefore, a type of checklist, which would audit patient documentation randomly on a weekly or monthly basis, could be implemented to improve this process. Secondly, emergency care units within a private sector hospital group where the study took place all were understaffed in terms of specialist registered nurses (31.62%). Therefore it is recommended that these unit attempt to employ more registered clinical nurse specialist. Thirdly, funding and time needs to be budgeted in order to implement these training programmes, which will ultimately improve the continuity of care.

- Nursing Research: Further research needs to be undertaken once these changes have been implemented in order to ascertain if they have had an improvement on the continuity of care with regard to handover procedures and practices.

In order to solve lack of formal handover training problem, the researcher has established an acronym by using the word "HANDOVER"©, which may aid registered nurses with the handover practices and procedures. Thus, offering the handover structure and more user-friendly format. This acronym can be placed on a small laminated pocket card which is easily accessible to the registered nurses and they can look at this pocket card when performing the handover and it should act as a memory jolter, so that they don't forget any of the pertinent information that should

be conveyed in the handover, (See table 5.1). A detailed explanation on the handover pocket card is included in Annexure H.

Table 5.1 Handover Acronym Pocket Card

The acronym for handover practices and procedures: "HANDOVER" ©	
H	Haemodynamics and History
A	ABC's, ABG's, Allergies and Analgesia
N	Nursing Care, Neurological Status and Nutrition
D	Diagnosis and Differential Diagnosis
O	Observations and Oxygenation
V	Vital Signs and Ventilation Status
E	Examinations and Excretions
R	Rx = Treatment and Recommendations

Therefore, this acronym "HANDOVER"© pocket-card can be utilised in a future study in emergency care units to ascertain its effectiveness with regard to handover practices and procedures. This research study was purely an audit. Therefore, it is recommended that a number of research studies are conducted in the public and private hospital sector, encompassing the other provinces of South Africa, in order to ascertain the magnitude of training required, quality and effectiveness of the continuity of care with regard to handover practices and procedures.

5.6 Conclusion

This research was an audit of registered nurses' handover practices in private sector emergency care units and indicated that just over ten percent of nurses had received some kind of prescribed training with regard to handover practices and procedures.

The majority of registered nurses who participated in this study were female and averaged around the age of 36 years old. Just over one third of them had completed either the four-year degree or four-year diploma in nursing science, whereas almost half of the participants had become registered nurses by virtue of the staff nurse bridging course. Almost one third of these nurses had an additional qualification as a

clinical nurse specialist, whereas just over a third had practical working experience in emergency care units. Only one fifth of these registered nurses had more than ten years emergency care unit practical working experience and just over a third of them had less than two year's emergency care unit practical working experience. Furthermore just over half of the participants were employed full time while on the other hand almost a third of the registered nurses who participated in the study were employed on either a part time or nursing agency basis.

There were also a number of differences between registered clinical nurse specialists and non-specialist registered nurses with regard to their view and opinions regarding the handover. Therefore, it is suggested that emergency care units invest in training as well as setting unit-standards with regard to handover practices and principles. This needs to be accomplished in order to maintain a high level of standard that is in line with international standards and guidelines, with reference to handover practices and procedures. For that reason it is recommended that training regarding handover procedures and practices start at grassroots level. Therefore, it should start within the first year of student nursing training and continue throughout the years of training, into postgraduate education.

Implementation of the acronym "HANDOVER ©" laminated pocket card will also assist registered nurses in maintaining a structured handover without leaving any pertinent patient information out. This could ultimately affect the continuity of patient care. Since the effectiveness of a handover can make the difference between life and death!

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APPENDICES and ANNEXURES

ANNEXURE A – Instrument Approval Certificate

Datum: Tue, 3 Mar 2009 08:12:28 +0000

Von: Annie Jenkin <A.Jenkin@plymouth.ac.uk>

An: "icu.nurse@networld.at" <icu.nurse@networld.at>

Betreff: RE: Master of Science in Nursing Research - Urgent - Please Help!

Teil(e): 2 14 appendix for research 5.doc application/msword 407552 KB

Hello Anthony
Here you are

I wonder in return if you could let me have a summary of your work once completed.
Or if you publish - let me have a copy.

Best of luck
Annie

-----Original Message-----
From: icu.nurse@networld.at
Sent: 03 March 2009 07:18
To: Annie Jenkin
Cc: n.abelson.mitchell@plymounth.ac.uk; Simon Cooper
Subject: Master of Science in Nursing Research - Urgent - Please Help!

Anthony Kaufrinder RN
P.O. Box 9739
Edenglen
ZA - 1613

Good morning dear Sir/Madam!
Please could you be as kind as to help me as I am a registered nurse with UKCC and currently studying my master's degree in nursing - Intensive care nursing at the University of the Witwatersrand. My research topic is handover practices of [redacted] nurses, thus I require an instrument (e.g. Checklist), that was used and proven in a previous study in order to measure the [redacted] of the handover. I am making reference in my research to your article, so I am appealing to you to please help me and allow me to use / purchase your instrument you used in your study. How do I go about getting a copy of your instrument? I would be most grateful for your assistance and prompt response.
Thanks again for you help and support.
Many thanks & have a great day!
Best wishes

Anthony

ANNEXURE B – University Ethics Clearance Certificate

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
R14/49 Mr Anthony P Kaufrinder

CLEARANCE CERTIFICATE	**M090417**
PROJECT	Registered Nurses' Handover Practices in Emergency Care Units
INVESTIGATORS	Mr Anthony P Kaufrinder.
DEPARTMENT	Department of Nursing Education
DATE CONSIDERED	09.04.29
DECISION OF THE COMMITTEE*	Approved unconditionally

Unless otherwise specified this ethical clearance is valid for 5 years and may be renewed upon application.

DATE 09.06.10 **CHAIRPERSON** .....
(Professor P E Cleaton Jones)

*Guidelines for written 'informed consent' attached where applicable

cc: Supervisor : Prof J Bruce

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University.
I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to a completion of a yearly progress report.**

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES...

.....

ANNEXURE C – Private Hospital Group Approval Certificate

07 July 2009

Anthony Kaufrinder
Department of Nursing Education
Faculty of Health Sciences – University of the Witwatersrand
7 York Road
Parktown
2193

Dear Anthony

You are hereby given permission to conduct your research in trauma units of the hospital group under the following conditions:

- Participation in your research project must be stated as voluntary to the potential participants
- Your research findings to be submitted to me
- Your research recommendations to be submitted for consideration in our strive fo continuous improvement

I wish you luck with your study.

Kind Regards

ANNEXURE D – University Research Title and Approval Certificate

Faculty of Health Sciences
Medical School, 7 York Road, Parktown, 2193
Fax: (011) 717-2119
Tel: (011) 717-2745

Reference: Ms Tania Van Leeve
E-mail: tania.vanleeve@wits.ac.za
12 June 2009
Person No: 9504494J
PAG

Mr AP Kaufrinder
PO Box 9739
Edenglen
1613
South Africa

Dear Mr Kaufrinder

Master of Science in Nursing: Approval of Title

We have pleasure in advising that your proposal entitled "*Registered nurses' handover practices in emergency care units*" has been approved. Please note that any amendments to this title have to be endorsed by the Faculty's higher degrees committee and formally approved.

Yours sincerely

Mrs Sandra Benn
Faculty Registrar
Faculty of Health Sciences

ANNEXURE E – Private Hospital Group Research Request Letter

Anthony Kaufrinder

Department of Nursing Education
Faculty of Health Sciences -University of the Witwatersrand
7 York Road
2193 – Parktown
Dated: 09/03/2009.

The Chief Executive Officer and Management

_____ Hospital Group
Corner of ___ and ___ Roads
Johannesburg, Gauteng,
Tel: (011) ___ - _____

Re: REQUEST TO CONDUCT RESEARCH AT _____ HOSPITAL GROUP

Dear Sir / Madam,

I am a registered student at the University of the Witwatersrand, in the Department of Nursing Education. I would like to ask for your permission to conduct research within the ____ Hospital Group. I am currently studying for the degree of Master of Science in Nursing - Intensive Care Nursing. I wish to conduct a research project to determine the views and opinions of registered nurses working in emergency care units within the private sector: _____ Hospital Group - Johannesburg, South Africa, regarding HANDOVER PRACTICES and PROCEDURES.

I will be using a 96 item (17 question / 5 page) self administered questionnaire to collect data from registered nurses who are currently working in emergency care units and who agree to participate in the study. It will take approximately 15 - 25 minutes of their time to complete. I feel privileged and excited to be able to conduct this research study and would be most grateful if you would give your consent.

I wish to undertake the research project in order to audit and document the effectiveness of the handover procedure and hope that the research will be helpful in giving information to management to assist smoother, time saving and effective systems to be used in patient hand over.

You have my assurance, that I will respect all participants, the institution, personnel and patients/or their families. I will not divulge their names in my report. I will obtain verbal consent from all participants. A copy of the report will be made available to you on completion.

If you require any further information please feel free to either e-mail me: icu.nurse@networld.at or contact the Department of Nursing Education at the University of the Witwatersrand on (011) 488 – 4272.

Yours faithfully,

A. Kaufrinder RN

Anthony Kaufrinder *RN*

ANNEXURE F – Research Information Letter - Registered Nurses

REGISTERED NURSES' HANDOVER PRACTICES IN EMERGENCY CARE UNITS

INFORMATION LETTER TO REGISTERED NURSES

Dated: July- August 2009

Dear Colleague,

My name is Anthony Kaufrinder, Registered Nurse and ICU Qualified (*Advanced Diploma in ICU Nursing from Wits*). I am currently registered as a student at the University of the Witwatersrand, in the Department of Nursing Education for the degree of Master of Science in Nursing - Intensive Care Nursing.

I wish to conduct a research project to determine how HANDOVER PROCEDURES and PRACTICES takes place between registered nursing staff in the emergency care units of a private sector hospital. Consent has been obtained from your Hospital Groups Head Office to conduct the research within your unit, therefore if you wish to participate, it has been approved by management and please note participation is entirely voluntary.

I hereby invite you to be part of the research by completing a questionnaire, which will take you approximately 15 – 25 minutes to complete. The questionnaire contains questions about the documentation used during handover and your opinion on the handover process.

By completing this 96 item (17 question / 5 page) self administered questionnaire and then returning it to me, you are consenting to participate in the research study. If you agree to participate, please complete the attached questionnaire and place it in the box provided at your emergency care units' nurses' station. Should you choose not to participate, you will not be penalized in any way. Please understand that participation is entirely voluntary and anonymous.

You will not personally derive any benefit from participation in the study but your participation may provide valuable information to enhance the effectiveness of the handover procedure.

Thank you for taking the time to read the information letter. If you require any further information please feel free to either e-mail me: icu.nurse@networld.at or contact the Department of Nursing Education at the University of the Witwatersrand on (011) 488 – 4272.

Yours faithfully,

A. Kaufrinder RN

Anthony Kaufrinder *RN*
MSc – Nursing Student

ANNEXURE G – Research Questionnaire and Instrument

Questionnaire

By **completing this questionnaire and then returning it to me** via placing it in the box provided at your emergency care units' nurses' station, **you are consenting to participate in the research study**. If you agree to participate, please complete the attached questionnaire. Should you choose not to participate, you will not be penalized in any way. Please understand that participation is entirely voluntary and anonymous.

Instructions:

This questionnaire is for the following personnel working in emergency care units:

- Registered ICU qualified specialist nurses
- Registered trauma and emergency qualified specialist nurses
- Registered nurses
- Student ICU nurses
- Student trauma and emergency nurses

1. All participants to complete sections A and B
2. Please answer all questions by ticking (√) the box, unless asked to do otherwise
3. This questionnaire is to be filled out only once by yourself
4. Once you have completed the questionnaire, please place it in the box provided at your nurses' station in the emergency care unit.

Statement of confidentiality

No names are to be placed on the questionnaire, thus once the data is entered into a database, all links between the participants and their replies will be removed.

Section: A – Socio-demographics

1. Biographical Data?

1.1	What is your age? _____Years	1.2	Gender:	Male	Female

2. Please tick your registered nurse qualification, based on your basic education or training.

2.1	Registered Nurse (4 year basic degree or diploma)	
2.2	Registered Nurse (3 year basic diploma)	
2.3	Registered Nurse (2 year bridging from staff nurse / enrolled nurse)	
2.4	Registered Nurse (Foreign qualification converted to SANC Equivalent)	

3. Please tick your professional qualification / position within the emergency care unit?

3.1	Specialist Nurse (Trauma and Emergency Trained)	
3.2	Registered Nurse (Trauma and Emergency Experienced; Not Trained)	
3.3	Registered Nurse (Trauma and Emergency Student)	
3.4	Specialist Nurse (Intensive Care Trained)	
3.5	Registered Nurse (Intensive Care Experienced; Not Trained)	
3.6	Registered Nurse (Intensive Care Student)	
3.7	Registered Nurse (No Experience)	

4. Please tick the length of your experience as a nurse working in an emergency care unit?

(Please tick the block that BEST reflects the number of whole years)

4.1	0 – 2 years		4.3	6 – 9 years	
4.2	3 – 5 years		4.4	10 years or more	

5. In what capacity are you employed at this emergency care unit?

5.1	Full time employed		5.3	Student		5.5	Agency employed	
5.2	Part time employed		5.4	Volunteer		5.6	Other (Specify)_____	

Section: B - Handover Procedure

1. What is the main form of education or training that you have received regarding patient handover practices? (You may tick more than one box from the list below)

1.1	Through listening what colleagues say	
1.2	Through reading a book or manual	
1.3	Formal training during a course and what type of course was this? _____	
1.4	I have not received any form of education or training	

2. What, is in your opinion, the most appropriate answer regarding the current patient documentation or patient report form used in the handover?

		Yes	No	Not Sure
2.1	Is the design of the information clearly laid out?			
2.2	Is the sequence of the information logical?			
2.3	Does it contain all of the patient information required?			
2.4	Is the content of the information easy to understand?			
2.5	Can you always find the information you require?			

3. At the emergency care unit, who is the first person you normally need to hand over to?

3.1	The unit manager coordinating the emergency department admissions	
3.2	Another registered nurse coordinating the emergency department admissions (For example: Shift Leader)	
3.3	Another registered nurse working in a specific area of the emergency department	

3.4	Another nurse working in a specific area of the emergency department (For example: Staff Nurse/ Enrolled Nurse or Auxiliary Nurse / Enrolled Nursing Assistant)	
3.5	A doctor working in a specific area of the emergency department (e.g. ER - Doctor)	
3.6	Other, please specify_____	

4. Are there occasions when you need to give more than one handover regarding the same patient in the same emergency care unit?

4.1	Yes		4.2	No	

5. If you answered "Yes" to the previous question, then please indicate what priority the patients are most likely to be?

5.1	Priority One – Patients who need immediate life saving emergency medical treatment and care (P1) – Code: Red	
5.2	Priority Two – Patients whose treatment can be temporarily delayed for up to a couple of hours (P2) – Code: Yellow	
5.3	Priority Three – Patients whose treatment can be delayed for a number of hours or also known as the "walking wounded" (P3) – Code: Green	
5.4	Priority Four – Patients who are already dead or who have little chance of survival despite the best available medical interventions and efforts (P4) – Code: Blue	

6. Please indicate how often you think repetition of the handover occurs for patients in the following categories?

		Every Time	Frequently	Occasionally	Not Often
6.1	Priority One (P1) - Red				
6.2	Priority Two (P2) - Yellow				
6.3	Priority Three (P3) - Green				
6.4	Priority Four (P4) - Blue				

7. How many times do you normally need to repeat the handover?

7.1	Once only		7.2	Twice		7.3	More than twice	

8. To whom did you need to repeat the information? (Please tick one box only)

8.1	The unit manager		8.6	A doctor	
8.2	A specialist nurse		8.7	A consultant	
8.3	A registered nurse		8.8	A surgeon	
8.4	A post basic nursing student		8.9	An anaesthetist	
8.5	A nurse		8.10	Another person (Please Specify_____)	

9. In what area of the emergency care unit is the handover most often repeated?

(Please tick one box only)

9.1	In the corridor		9.6	At the nurses' station	
9.2	In the casualty unit		9.7	In the reception area	
9.3	At the entrance of the emergency care unit				
9.4	In the resuscitation room, besides the trolley to which the patient is to be transferred to				
9.5	In another location of the emergency care unit known as the _____ area / room.				

10. Please list information that you normally include in the patient handover?

(For example: Mechanism of Injury, Injury or Illness, Signs and Symptoms, Treatment and Time, Name and Age, Patient Management, Examinations, Diagnosis, etc.)

10.1		10.4		10.7	
10.2		10.5		10.8	
10.3		10.6		10.9	

11. What additional information do you commonly have to ask for that is not included or provided in the patient handover or the nursing notes and patient documentation?

(Please write your answer in the space provided)

11.1		11.3		11.5	
11.2		11.4		11.6	

12. Of the handover information below, how would you rank the order of importance of all of the following items?

For example, if you think that the "*reason for admission*" is essential and consider that point to be the most important item, write the number one (1), in the box, then if you consider the "*history of events*" to be the second most important point, write the number two (2), in the box and then proceed ranking the remaining points in order of importance to you.

		Order of importance
12.1	The patient's name	
12.2	The patient's age	
12.3	Reason for admission	
12.4	History of events	
12.5	Time of accident, illness or injury	
12.6	Problems requiring immediate medical intervention	
12.7	Location and address of incident	
12.8	Suspected injuries or illness	
12.9	Treatment carried out since time of onset	
12.10	Time drugs and medication administered	
12.11	Effect of treatment / drugs / medication history	
12.12	Any significant previous medical history	
12.13	Allergies	
12.14	Social circumstances of the patient	
12.15	Details of the patient's next of kin	
12.16	Whether the patient's family are aware that the patient is in hospital	
12.17	Any other information (Please specify) _____	

ANNEXURE H – Handover Acronym Pocket Card and Explanation

In order to offer the handover structure and a more user-friendly format, the researcher has come up with an acronym by using the word "HANDOVER"©, which may aid registered nurses with the handover practices and procedures. This acronym can be placed on a small laminated pocket card which is easily accessible to the registered nurses and they can look at this pocket card when performing the handover and it should act as a memory jolter, so that they don't forget any of the pertinent information that should be conveyed in the handover, (See table 5.1).

Table 5.1

The acronym for handover practices and procedures: "HANDOVER" ©	
H	Haemodynamics and History
A	ABC's, ABG's, Allergies and Analgesia
N	Nursing Care, Neurological Status and Nutrition
D	Diagnosis and Differential Diagnosis
O	Observations and Oxygenation
V	Vital Signs and Ventilation Status
E	Examinations, Excretions and ECG's
R	Rx = Treatment and Recommendations

The breakdown of the acronym "HANDOVER" © is as follows:

- H = Haemodynamics and History

Therefore the patients haemodynamic status can be discussed, whether the patient is haemodynamically stable or unstable, this information can be supported by the

patient’s blood pressure, mean arterial pressure, CVP or cardiac output. Thus the registered nurse is able to ascertain if they are dealing with the patient that is stable or unstable. Then the patient’s history needs to be discussed: signs and symptoms, allergies, medication, previous medical-surgical-gynaecological history, last oral intake, events leading up to the illness or injury. Then underlying medical conditions such as diabetes, drug addiction, emphysema, epilepsy, asthma, thyroid problems, haemophilia or heart conditions.

- A = ABC’s, ABG’s, Allergies and Analgesia.

Airway, breathing and circulation (ABC’s), therefore is the patient's airways open, protected and maintained (Intubated or self maintained), then how is the patient breathing (spontaneous, assisted or ventilated) and Circulation (pulse, blood pressure, heart rate). Arterial Blood Gases (ABG’s) are important to tell the metabolic status of the patient on a cellular level. Allergies, is the patient allergic to any medication, is the patient on any analgesia and when was the last dose given, what analgesia is it, for example by morphine its half life is important as well as it is respiratory depressive so the registered nurse needs to titrate the dosage to the patient's requirements. This can be done by using the visual analogue scale to ascertain the patient's level of pain and discomfort.

- N = Nursing Care, Neurological Status & Nutrition.

The patient's nursing care plan is important to handover to maintain the continuity of care. Then the neurological status of the patient is important in order to ascertain if the patient is orientated to place, time and person. The patient's Glasgow Coma Scale is the standard used within emergency care units to ascertain the patient's

level of consciousness. Then does the patient have any neurological fallout, deficit or paralysis. Then the patient's nutritional status is important as this relates to the nursing care plan, is the patient nil per mouth as they require surgery, or is the patient receiving enteral or par-enteral nutrition.

- D = Diagnosis and Differential Diagnosis.

The diagnosis of the patient's condition is vital in order for the registered nurses to anticipate whether the patient's condition is improving or deteriorating, it also plays an important role in the administration of treatment and medication. The differential diagnosis is important for the registered nurses to have in the back of their mind in case complications arise, so that they can put necessary strategies into place.

- O = Observation and Oxygenation.

This includes all observations done on the patient for example the head to toe examination, temperature, saturation, mobility, sensibility, perfusion, ECGs, x-rays, blood tests and lab results, etcetera and all other changes regarding the patient that are normally charted. Oxygenation is what flow rate and what type of oxygen mask or administration device is used on the patient.

- V = Vital Signs and Ventilation Status.

Vital signs would include things like blood pressure, pupil’s reaction to light, pulse rate, cardiac rhythm, core temperature, capillary refill, oxygen saturation, air entry, etcetera and all other possible vital signs that are normally charted. This includes whether the patient is being ventilated by a mechanical ventilation device, which mode of ventilation as well as the ventilator settings or if the patient is receiving oxygen via a specific type of oxygen mask and the relative flow rate.

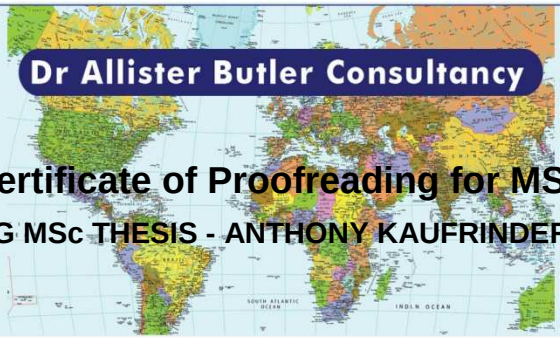
- E = Examinations, Excretions and ECG’s.

This would include all examinations that the patient may require or that have been done for example chest x-rays, blood tests, IVP’s, electro cardio graph (ECG’s), urine dipsticks and so forth. Excretory status of the patient also needs to be monitored such as urine output which is an indicator of the patient's renal functions as well as the patient's bowel movements and whether or not blood was present in the stool, also included in this section would be things such as diarrhoea and vomiting as all these factors affect the fluid input / output balance of the patient.

- R = Rx (Treatment) and Recommendations.

This would include all kinds of treatment whether physiotherapy, medication, wound care, dressing changes, surgery or any other recommendations for example changes in the patient's lifestyle would be included in the section.

The “HANDOVER”© pocket-card will act as a “memory jogger” for registered nurses within emergency care units and will aid them with the structure as well as content of the handover process, therefore ultimately improving the continuity of patient care.



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ANNEXURE I – Certificate of Proofreading for MSc Thesis

INVOICE FOR EDITING MSc THESIS - ANTHONY KAUFRINDER

Invoice Statement		
Date	**Item**	**Amount**
19 January 2010	Editing MSc Thesis Post Net	R 2 500 R 120
TOTAL		**R 2 620**

Date of Invoice: 19 January 2010

Invoice Statement: R 2 620

Respectfully submitted

Dr Allister Butler

Private Consultant

I can acknowledge that full payment for this service was received on 19/1/2010