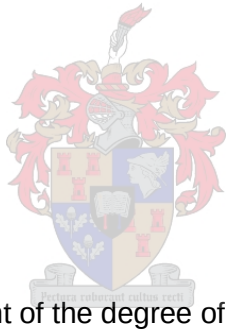
A RETROSPECTIVE ANALYSIS OF NURSING DOCUMENTATION IN THE INTENSIVE CARE UNITS OF AN ACADEMIC HOSPITAL IN THE WESTERN CAPE

by

Dawn Sharon Hector



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Supervisor: Dr. E.L.Stellenberg

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DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the owner of the copyright thereof (unless to the extent explicitly otherwise stated) and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

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ABSTRACT

Critical care nursing is the specialty within nursing that deals with an individual's response to life-threatening problems. These life threatening problems require continuous in-depth assessment and intense therapeutic measures and interventions. The level of nursing care is intense and the amount of documentation is enormous in the intensive care unit. Failure to document any aspects, may threaten the continuity of care and patient safety. Furthermore, it may result in negligence that may result in litigation.

The purpose of this study was to retrospectively analyse nursing documentation in the intensive care units of an academic hospital in the Western Cape.

The objectives set for this study were to determine whether the documentation of the:

- assessment of the patients were adequate;
- diagnoses were based on the assessment;
- nursing care plans were based on the diagnoses;
- nursing care plans were implemented and
- nursing care plan shows evidence of continuous evaluation

A retrospective exploratory- descriptive research design with a quantitative approach was applied to audit objectively the status of nursing documentation of patients who were admitted to the ICU's of an academic hospital in the Western Cape in the first 48 hours of admission.

Ethical approval was obtained from the University of Stellenbosch and consent from the Chief Executive Officer of the academic hospital to conduct the research in the hospital under study.

The research population (N) was the documentation (files) of patients admitted in the ICU's between 1 July 2008 and 31 December 2008. A stratified sample was drawn consisting of 151 files.

The researcher collected the data personally utilising a pretested audit instrument. The reliability and validity was assured through experts in nursing science and intensive care nursing, a statistician and a research methodologist. A pilot study was conducted to

pretest the instrument and the feasibility of the study. Modifications to the instrument were done based on suggestions from the experts and findings of the pilot study.

Data analysis included statistical associations between variables using the Chi-square test on a 95% confidence level. Data is presented in the form of figures, tables and frequencies.

The findings of the study show that the nursing documentation in the intensive unit is inadequate with the following total mean scores:

- Assessment 62.6%
- Nursing diagnosis 53.1%
- Nursing care plans 37.1%
- Implementation 72.6%
- Evaluation 40.5%.

In conclusion nursing documentation of patients admitted to an ICU is inadequate during the first 48 hours of admission. Poor documentation threatens the safety of patients and demands urgent improvement.

Recommendations to improve the documentation include nursing practice supervision, quality improvement programmes, in-service training, evidence based practice and further research.

OPSOMMING

Kritieke-sorg verpleging is die spesialiteit in verpleging wat betrekking het op die individu se reaksie.op lewensgevaarlike probleme.Hierdie lewensgevaarlike probleme benodig deurlopend deeglike beraming en intense terapeutiese benaderings en intervensies. In die intensiewesorg eenheid is die vlak van verpleegsorg baie intens en die dokumentasie hoeveelheid is enorm. Versuim om enige aspekte van sorg deeglik en akkuraat te dokumenteer, kan die deurlopendheid van sorg sowel as die veiligheid van die pasient bedreig. Verder kan dit tot regsstappe lei as gevolg van nalatigheid.

Die doel van hierdie studie was om ‘n retrospektiewe analise van verpleeg dokumentasie in die intensiewe sorgeenhede van ‘n akademiese hospitaal in die Wes Kaap te doen.

Die doelwitte van hierdie studie was om vas te stel of die dokumentasie van die:

- beraming van die pasiênt voldoende gedoen is
- verpleegdiagnose gebaseer is op die beraming
- verpleegsorgplan gebaseer is op die diagnose
- implementering van die verpleegsorgplan en
- verpleegsorgplan bewyse toon. van deurlopende evaluasie

‘n Retrospektiewe eksploratiewe-beskrywende navorsingsontwerp met ‘n kwantitatiewe benadering is toegepas ten einde die status van verpleegdokumentasie van pasiente wat toegalaat is tot die intensiewesorg eenhede van ‘n akademiese hospitaal in die Wes Kaap in die eerste 48 uur na toelating te bepaal.

Etiese goedkeuring is verkry van die Universiteit van Stellenbosch asook vanaf die Hoof Uitvoerende Beampte van die akademiese hospitaal om die navorsing daar uit te voer.

Die navorsings populasie (N) was die dokumentasie (lêers) van die pasiente wat opgeneem is in die intensiewesorg eenheid tussen 1 Julie 2008 en 31 Desember 2008. ‘n Gestratifieerde steekproef is getrek bestaande uit 151 lêers. Die navorser het die data persoonlik kollekteer deur gebruik te maak van ‘n voortoets oudit instrument. Die betroubaarheid en geldigheid is verseker deur kundiges in verpleegkunde en intensiewesorg verpleging, asook ‘n statistikus en ‘n navorsingsmetodoloog. ‘n Loodstudie is gedoen om die instrument vooraf te toets en om die uitvoerbaarheid van die navorsing

te bepaal. Veranderinge is aangebring op grond van die voorstelle van die kundiges sowel as die bevindinge van die loodstudie.

Data analise het ingesluit die statistiese assosiasies tussen veranderlikes deur gebruik te maak van die Chi-kwadraat toets tot ‘n 95% sekerheidsvlak. Data is aangebied in die vorm van figure, tabelle en frekwensies.

Die bevindinge van die studie wys dat die verpleegdokumentasie in die intensiewesorg eenheid is onvoldoende met die volgende gemiddelde telling:

- Beraming 62.6%
- Verpleegdiagnose 53.1%
- Verpleegsorgplanne 37.1%
- Implementering 72.6%
- Evaluering 40.5%

Ten slotte, verpleegdokumentasie van pasiënte wat tot die intensiewesorg eenheid toegelaat is, is onvoldoende gedurende die eerste 48 uur van toelating. Swak dokumentasie bedreig die veiligheid van pasiënte en verg

dringende verbetering. Aanbevelings om die dokumentasie te verbeter sluit in toesig oor verpleegpraktyke kwaliteit verbeteringsprogramme, indiensopleiding, bewysgebaseerde praktyke en verdere navorsing.

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- Dr Kidd, for analysis of the data
- The hospital for their permission to conduct the study

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

ABC Airway Breathing Circulation

CVP -Central venous pressure

CVS -Cardiovascular system

DVT -Deep venous thrombosis

ECG - Electrocardiogram

ENDO -Endocrine system

FAST HUG -Feeding, analgesia, sedation, thrombo-embolic prophylaxis, head, ulcer and glucose

GCS -Glasgow coma scale

GIT -Gastro-intestinal system

G-U -Genito- Urinary system

ICU -Intensive care unit

ISE -Intensiewe sorg eenheid

LOC -Level of consciousness

NEURO - Neurological system

NP -Nursing process

PTCA - Percutanious transluminal coronary angioplasty

R - Regulation

RESP - Respiratory system

RN -Registered nurse

SD -Standard deviation

SANC -South African Nursing Council

VAP -Ventilator associated pneumonia

CHAPTER 1: SCIENTIFIC FOUNDATION OF THE STUDY

1.1 Introduction

Documentation is used extensively in the nursing profession and plays an important role in the caring of patients. This is motivated by Bååth, Hall-Lord & Larson (2007:12), who states that nursing documentation is an essential element of professional practice because written evidence of nursing reflects the nurses' accountability regarding patients' care. The nursing profession is currently being transformed and regulated by the new Nursing Act No. 33 of 2005. In terms of the Regulation 2598, Scope of Practice and 387 Acts and Omissions as promulgated by the Nursing Act No. 50 of 1978 it is expected of nurses to document all interventions applied to patient care. Failing to do so may result in disciplinary action. This act is also applicable to the nurses working in the intensive care units (ICU) caring for the critically ill patients. The Nursing Act No. 33 of 2005 stipulates that nurses should create and maintain an environment that fosters safety, compassion and caring for adequate nursing practice. Furthermore, nurses should promote the continuity of health care and take the appropriate action to safeguard health care users when any person or circumstances endanger their care and safety.

1.2 Rationale for the study

According to Rothschild, Landrigan, Cronin, Kaushal, Lockley, Burdick, Stone, Lilly, Katz, Czeisler and Bates (2005:1694) critically ill patients require high-intensity nursing care and may be at especially high risk of injury because they are severely ill. Rothschild studied the incidence and nature of adverse events and serious errors in the critical care setting which determined that adverse events and serious errors, involving critically ill patients, were common and often potentially life-threatening. Although many types of errors were identified, failure to carry out intended nursing treatment correctly was the leading category. Documenting the information needed for continuity of care must be part of the nursing process. Björvell, Wredling and Thorell-Ekstrand (2003:206) found that registered nurses perceived nursing documentation to be beneficial in their daily practice and increases patient safety.

The researcher is an intensive care trained registered nurse and worked for 10 years in the ICU of an academic hospital in the Western Cape. Through her clinical practice she identified that there were numerous incidences where nurses failed to document interventions, which consequently resulted in no follow up care or double actions to the same patient. This could be illustrated by an example in which a patient received a double dose of morphine for chest

pain. The nurse, who administered the prescribed morphine for chest pain failed to record and communicate the intervention. Consequently, a second nurse who also observed the same patient with chest pain decided to administer the prescribed dose of morphine. No written record or any evidence was available to show that the patient had received the medication. An overdose of morphine may lead to respiratory distress and subsequently possible death of the patient.

Documentation is the written proof of the interactions between and amongst health care professionals, patients, their families and health care organisations. This entails the administration of tests, procedures, treatments, client education and the result or patients response to diagnostic tests and interventions. Additionally documentation provides written records that reflect the patient care provided on the basis of assessment data and the patient's response to the interventions. Data to be documented include the patient's condition prior to the specific intervention performed, the patients' response to the intervention and the patient's outcome (White, 2003:73). White (2003:58) further stresses that this documentation not only constitutes a legal record, but it also allows for valuable communication amongst other health care team members for the purpose of ensuring continuity of care and evaluating progress toward expected outcomes.

Communication is a dynamic, continuous and multidimensional process for sharing information as determined by standards or policies in health care (White, 2003:73). Documentation is a communication method that confirms the care provided to the patient and clearly outlines all important information regarding the patient (White, 2003:75). Nurses are key coordinators and communicators of patient care and in the health of patients. In an acute care setting, nurses are responsible for communicating patient status and responses to treatment and are the centre of communication between interdisciplinary care givers, patients and family members (Dykes, Cashen, Gallagher, Kennedy, MacCallum, Murphy, Schleyer & Whetstone, 2006: 8). Additionally, reporting and documentation is the major communication technique used by health care providers in directing patient-based decision-making and continuity of care (White, 2003:73).

Nursing documentation should be adequate as the professional responsibility of the health care practitioners is to provide written evidence of the practitioner's accountability to the patient, the institution, the profession and society (White, 2003:74). A study was done about auditing nursing content in patient's records by Ehrenberg, Ehnfors and Smedby (2001:133) with the objective to explore different approaches in reviewing records. The researchers suggest that to gain a more complete reliable picture of the quality of documentation a study in nursing documentation requires a comprehensive approach in combination with a

critical review of the knowledge base of assessment, diagnosis, interventions, evaluation and outcomes of patient care reflected in the patient records. This finding supports the researcher's intention to determine the status of documentation in the ICU's utilizing the nursing process as guideline.

The nursing process serves as an organizational and conceptual framework for the practice of nursing and covers all the phases taken by the nurse in caring for the patient. These phases include assessment, nursing diagnosis, planning, implementation and evaluation (Schrefer, Como & Myers 2002:1202). The nursing process requires a systematic approach in documenting the performance of specific interventions and other relevant information necessary for the orderly care of the patient. The nursing process guides the nursing care of the patient in the intensive care unit and requires documentation on what was done.

As shown in figure 2.1, are the phases of the nursing process regarding documentation of nursing activities (White, 2003:70). This process starts off with the assessment phase of the nursing process. The focal point is to document the data collected about the patient's health history, physical examination, psychological aspects of the patient's health, the patient's perception of health, the health risk factors and the patient's coping mechanisms. It also entails documentation on the continuous monitoring of the patient and the observations on an hourly basis, or more regular depending on the haemodynamic status of the patient.

Following the assessment phase in the nursing process, is the diagnosis phase. A list of the patient's problems or diagnoses as identified in the assessment phase is documented during this phase.

The third phase of the nursing process is the planning phase. Actions are planned and based on all problems or diagnoses identified and should be documented to facilitate the course of action in the resolution of the problems. Documentation of highly complex decision making of the critically ill patient takes place during this phase. The patient's care plan related to the specific diagnoses is documented and updating the patient's plan of care should be evident. This phase also includes documentation on critical expectations and preparation for the patient's needs as required after discharge.

The fourth phase of the nursing process is implementation, which entails documentation on execution of the nursing care plan, i.e. documentation of the nursing activities performed. It also involves documentation on the patient's condition prior to the intervention, the specific nursing intervention performed, the patient' response to the intervention and the outcome of the intervention.

The last, but continuous phase of the nursing process is evaluation. Documentation on whether the patient's goals have been met or not and the haemodynamic status (stable or unstable) of the patient, forms part of the evaluation phase. This phase also involves documentation on reassessing the patient and modifications made to the care plan.

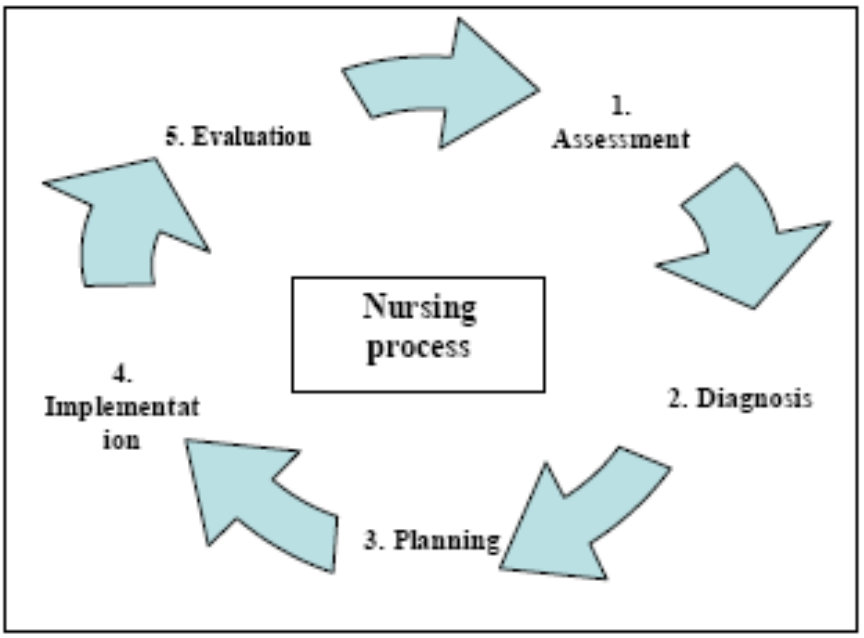

Figure 1.1: Phases of the nursing process (White, 2003:70).

In the ICU in particular, it is the nursing documentation that provide a framework for the decision making concerning diagnosis and prognosis in health care. The adult intensive care department of the academic hospital in the Western Cape includes seven (7) intensive care units and occupies 10% of the total number of beds available in this hospital. These are:

- General Surgery unit
- Burn unit
- Cardio-thoracic unit
- Neuro-surgery
- Lung unit
- Cardiology unit
- Renal unit

The total number of patients admitted with life threatening conditions over a 6 months period, July 2008 to December 2008, to the intensive care units was 1501. Many of these patients had additional health conditions which included diabetes mellitus, hypertension, arrhythmias, abnormal electrolytes and cardiac failure. Most of the patients were admitted as emergencies such as following motor vehicle accidents, heart attacks, and others admitted for elective major surgery. Furthermore, these patients undergo procedures that include a variety of invasive and diagnostic procedures such as cardio- version, chest x-ray, ECG, coronary angiogram, percutaneous transluminal coronary angioplasty (PTCA), mechanical ventilation, neurologic assessment, intra-aorta balloon pump monitoring, pulmonary artery wedge pressure monitoring and cardiopulmonary resuscitation. An ICU is characterized by the intense and continuous cardiac monitoring for arrhythmias and mechanically ventilated patients. These interventions require close observation around-the- clock and allow early intervention with medication, cardio-version or defibrillation to maintain stability, improve the prognosis and maintain vital organs to function. As arrhythmias are relatively common in these groups of patients an intense level of nursing care is required. In addition, patients' being ventilated mechanically poses challenging nursing care interventions, as it includes maintaining normal blood gas levels and a haemodynamic stable patient. Consequently, in the ICU there is an increase in patient associated workload, a greater burden of communication and a large and increasing volume of information which needs to be documented during the course of the illness. This leads to more opportunities for errors in the nursing care of patients in the intensive care unit (Manor-Shulman, Beyene, Ferndova & Parshuram, 2008:250).

During the first 48 hours of admission to the ICU, the patient's condition is unpredictable. The initial assessment is rapid to facilitate successful diagnosing and treatment of the patient. A study done by Rello, Diaz, Roque and Vallés (1999:1742) shows that they monitored two hundred and fifty intubated patients during the first 48 hours after intubation in order to identify potential risk factors for developing pneumonia within this period. The researchers found that 32 (12%) of these patients developed pneumonia during this time. During the first 48 hours after admission prompt and accurate decision-making power is required by the nurse, which is based on an accurate assessment, diagnosis, planning, implementing and evaluating phases. These actions are mostly executed at a high speed and are thus prone to errors. Therefore, the documentation required during this time should be accurate, concise, without ambiguity and reflect the patient care given and status of a highly volatile and vulnerable changing condition of the patient.

In conclusion Urden (2006:26) states that nurses caring for acute and critically ill patients in the ICU are not only required to take appropriate actions in the delivery of patient care, but they are also required to accurately document their findings, results of interventions and the patients' response to those interventions. Failure to document any aspects of care thoroughly and accurately, may give rise to negligence that may result in litigation.

Prior studies have demonstrated that documentation is significant in patient care in the intensive care unit. These reports highlight the fact that nursing documentation with the nursing process as guideline is most important in the continuity of patient care in the intensive care unit. The purpose of this study is to analyze the nursing documentation in the intensive care units of an academic hospital in the Western Cape.

The significance and benefits which this research will provide are the following:

- To identify problem areas with reference to nursing documentation in the intensive care units
- To identify short comings in nursing documentation that have an influence on patient care
- To identify the course of continuity of care in the intensive care units
- To identify the standard of the nursing process implementation in the intensive care units
- To identify the accurate account of treatment and care planning
- To determine whether the professional legal requirements for nursing documentation are being met in the intensive care units.
- To make recommendations to policy makers, nursing managers and training institutions that lead to changes in nursing documentation in the intensive care units

1.3 Statement of the research problem

In the light of the above discussion, documentation in the ICU is of utmost importance as the continuity of care may seriously be compromised when failing to document all patient data related to the phases of the nursing process namely assessment, diagnosis, planning, implementation and evaluation. Furthermore, documentation is especially of critical importance in an ICU where the critically ill patient is constantly subjected to interventions.

Failing to document may jeopardize the continuity of patient care and the safety of patients in the ICU.

1.4 Research question

As a guide to this study the researcher poses the following research question: “Does the retrospective analysis of nursing documentation in the intensive care units of an academic hospital in the Western Cape reflect the adequate use of the nursing process within first 48 hours of admission?

1.5 Research purpose

The fundamental purpose of this study is to undertake a retrospective analysis of nursing documentation in the ICU’s of an academic hospital in the Western Cape during the first 48 hours after admission. The literature, research, significance, benefits and objectives support the research purpose.

1.6 Research objectives

The following objectives are specified for this study:

- To determine whether the documentation of the assessment of the patients are adequately done in the ICU.
- To determine whether the documentation of the nursing diagnoses are based on the assessment of the patients in the ICU.
- To determine whether the documentation of the nursing care plan is based on the patient diagnoses.
- To determine whether documentation of the implementation of the nursing care in the ICU was done according to the care plans.
- To determine whether the documentation shows evidence of continuous evaluation of the nursing care plan.

1.7 Research methodology

In this section the research methodology as planned for the study is described and more detail related to the literature and implementation of the methodology is described in chapter 3.

1.7.1 Research design

A retrospective descriptive research design was applied with a quantitative approach will be applied to audit objectively the status of nursing documentation of patients who were admitted to the ICUs of an academic hospital in the Western Cape.

1.7.2 Population and sampling

For the purpose of this study the research population (N) is the documentation (files) of patients admitted in the ICU's between 1 July 2008 and 31 December 2008 at an academic hospital in the Western Cape. Table 1.1. show the total population of admissions per month over a 6 month period (July-December2008) in each unit of the academic hospital in the Western Cape. For the purpose of this study a 10% stratified sample will be drawn from each ICU as shown in table 1.2, a total of 151 of the files which is representative for the population. In consultation with a statistician the sample was validated. The statistician will support the process of the sample selection. The researcher will gather all the file numbers of the population and the statistician will use a stratified random sampling process to select 10% of each ICU for the purpose of the research study. Each file drawn by the statistician for the sample will be allocated a number and this number will be reflected on the audit instrument. The data will then be analysed according to the numbers allocated and not according to patient file numbers. The researcher will therefore only be working with these numbers and not the patient file numbers of the patients.

Table 1.1: Total population of admissions per month over a 6 month period (July-December 2008) for each ICU.

ICU	July	August	September	October	November	December
Unit 1	50	64	66	66	64	56
Unit 2	15	15	12	12	9	8
Unit 3	64	67	51	55	45	34
Unit 4	9	18	16	13	12	10
Unit 5	37	26	22	22	27	26
Unit 6	68	46	67	57	61	63
Unit 6	23	20	26	28	27	24
TOTAL	266	256	260	253	245	221

Table 1.2: Total population of admissions and sample for each intensive care unit over the 6 month period (July to December 2008).

ICU	Total Population (N)	Sample 10% (n)
Unit 1	366	37
Unit 2	71	7
Unit 3	316	32
Unit 4	78	8
Unit 5	160	16
Unit 6	362	36
Unit 7	148	15
TOTAL	N= 1501	n=151

1.7.3 Selection criteria

The following selection criteria set for the sample:

- Files of adult patients (18-years-and older)
- Files of adult patients who were admitted to one of the ICU's as listed in tables 1.1 and 1.2.
- Files of adult patient admitted between July 2008 and December 2008

1.7.4 Pilot study

Preliminary data will be collected by conducting the pilot study. A pilot study is defined as a smaller version of a proposed study (Burns & Grove, 2003:42).The researcher will draw a 1% sample for the pilot study. Each file drawn by the researcher for the sample will be allocated a number. The researcher will only be working with these numbers and not the file numbers of the patients. These files will be excluded from the main study. The pilot study will being done to test the instrument for any inaccuracies and ambiguity. In addition the pilot study will eliminate failing to obtain data that the researcher has planned for the study. The pilot study will enable the researcher to refine the instrument and be assured of the feasibility of the study.

1.7.5 Instrumentation

The researcher will utilize an audit instrument to gain data for the study (See annexure A). The researcher developed the audit instrument based on evidence-based clinical guidelines, documentation principles, and the foundation of the nursing care researched literature. The instrument was validated by experts in ICU, research methodology and a statistician.

The audit instrument will focus on the following:

- • Essential documentation principles
- • Documentation of assessment data of the patients
- • Documentation of nursing diagnosing data of the patients
- • Documentation of planning data of the patients
- • Documentation of implementation of the care plans
- • Documentation of patient evaluation

1.7.6 Reliability and Validity

Reliability is concerned with how consistently the measurement technique measures a variable or concept (Burns & Grove, 2003:45). The consistency of the audit instrument was assured through experts in nursing science and intensive care nursing, a statistician and a research methodologist. A pilot study will be conducted to establish uniformity in the instrument. In addition the feasibility of the study will also be tested through the pilot study.

Validity is the extent to which the instrument actually reflects or measures what it is supposed to measure (Burns & Grove, 2003:45). Content validity will be secured by literature, experts in intensive care nursing, a statistician and research methodologist. The content of the audit instrument is substantiated by the scientific nursing process. The measuring instrument on intensive care nursing documentation was circulated to experts in intensive care nursing for validation of the audit instrument. The instrument was adapted according to the feedback received.

1.7.7 Data Collection

Data collection is the specific, systematic gathering of information relevant to the research purpose or the specific objectives and questions of the study (Burns & Grove, 2003:45). The researcher will collect the data personally using the audit instrument as described in 1.8.5. The purpose of data collection is to achieve the objectives of the study.

1.7.8 Data analysis and interpretation

Data will be analyzed with the use of statistical programmes, with the support of the statistician. Data will be expressed in frequencies, tables and histograms. In addition to

descriptive statistics, statistical tests will be done to determine associations between the various variables by means of the Chi square test or other relevant tests as required.

1.8 Operational definitions

Documentation:
Documenting patient data on a clinical record form (Schrefer *et al*., 2002:541).

Intensive care units (ICU):
A hospital unit, in which patients requiring close monitoring, contains highly technical, sophisticated monitoring devices, equipment and is staffed by personnel who deliver critical care (Schrefer *et al.,* 2002:905).

Nursing Process
The nursing process is therefore a systematic, problem-solving approach to nursing that involves: interaction with each patient to assess needs and problems, making decisions regarding the patients' needs and problems, and implementing the planned nursing actions based on the assessed needs and problems (Young, Van Niekerk & Mogotlane, 2003:182). It encompasses assessment, nursing diagnosis, planning, implementation and evaluation (Schrefer *et a*l., 2002:1202).

Retrospective study:
A retrospective study investigates a phenomenon, situation, problem or issue that has happened in the past, conducted on the basis that data are available for that period (Kumar, 2005: 99).

1.9 Ethical consideration

The proposal of this study was presented to the Health Research Ethics Committee of the Stellenbosch University to obtain ethical clearance to conduct the study (See annexure B). A waiver of consent was also obtained from the ethical committee to audit the files of patients without their consent (See annexure C). In addition a written informed consent was obtained from the Chief Executive Officer and head of nursing of the academic hospital to conduct the research in the hospital and specifically to gain access and to utilize patient files (See annexure D). To ensure confidentiality and anonymity each file drawn by the statistician for the sample will be allocated a number. The researcher will only be working with these numbers and not the file numbers of the patients. This will ensure confidentiality, privacy and anonymity of patient information. Only the researcher will have access to any information

and data obtained for the purpose of this study. Data will be kept for a period of 5 years in a locked cupboard allowing only access by the researcher.

1.10 Outline of thesis

The thesis will comprise the following:

- Chapter 1 will consist of the introduction, rationale, brief description of proposed research and a short description of the research methodology
- Chapter 2 will contain the discussion of the literature review concerning documentation, nursing process and intensive care nursing.
- Chapter 3 will cover the discussion of the research methodology, the design, population, sampling, validity, reliability, the pilot study and limitations
- Chapter 4 will describe the data analysis, interpretation and discussion of findings
- Chapter 5 will include the discussion and recommendations based on the scientific evidence obtained in the study.

1.11 Conclusion

In this chapter the rational for the study, the problem statement, goal, objectives and research methodology to be applied was described. Documentation is of critical importance in an ICU where the critically ill patient is constantly subjected to interventions. Failing to document may jeopardize the continuity of patient care and the safety of patients in the ICU. Furthermore, the continuity of care can seriously be compromised when failing to document all patient data related to the phases of the nursing process namely assessment, diagnosis, planning, implementation and evaluation.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Nursing is a profession that has to adhere to the acts and regulations within an ethical framework; it should therefore conform to the required standards (Young *et al.*, 2003:10). Principles of professional practice include the laws entrenching the rights of citizens, the cultural heritage and the ethics of the society, the philosophy of nursing and the parameters of practice of other health professionals (Searle, 2000: 3). Muller (2003:16) identifies eighteen (18) criteria, upon which nursing is judged in order to be recognized

as an international profession. The 14th criterion states the following: “Critical analysis of activities, which leads to a change in practice on the basis of such analysis, with the result that a profession is always subjected to change and development and is never static”. This facilitates the use of research and the nursing process as a scientific framework for documenting the assessment, nursing diagnosis, planning, implementation and evaluation. This criterion is satisfied as the data gathered during the assessment will give rise to analysis leading to change and development in nursing care.” Mahler, Ammenwerth, Wagner, Tautz, Happek, Hoppe & Eichstädter (2006:274) state that nursing training and therefore practice, is based on the nursing process and thus require an adequate documentation of nursing care.

2.2 Nursing documentation

2.2.1 The character of nursing documentation

Documentation as a nursing intervention is defined as “recording relevant patient data in a clinical record” (Schrefer, *et al*., 2002:541). It is any written or electronically generated information about a patient that describes the care or service provided to that patient.

Health records may be paper documents or electronic documents, such as electronic medical records, faxes, e-mails, audioor video tapes and images. Through documentation, nurses communicate their observations, decisions, actions and outcomes of these actions for patients. Documentation is an accurate account of what occurred and when it occurred. It allows nurses and other care providers to communicate about the care provided. Documentation also promotes good nursing care and supports nurses in the meeting of professional and legal standards. (College of Registered Nurses of British Colombia, 2007:5).

The term 'nursing documentation' is used interchangeably with the term 'record keeping' in the nursing profession. Record keeping is related to the rules and codes of conduct for all qualified professionals especially when there is a discrepancy among the health team over how the patient should be treated (Fletcher & Buka, 1999:138).

2.2.2 Purpose of nursing documentation

Documentation allows nurses and other care providers to communicate with respect to the care provided. Documentation also promotes good nursing care and enables nurses to meet professional and legal standards. When in doubt as to whether it is appropriate to document, nurses are encouraged to go ahead and document. They should document who, when, where, and why. They should also document the facts only and only opinions that are supported by facts. Nurses should document the objective and not the subjective behaviours, information and interventions of the patient. An all- inclusive documentation is the most important tool in avoiding malpractice, since it can save the nurse and the patient (College of Registered Nurses of British Colombia, 2007:np and Ashley, 2004, 75-76).

The nursing notes provide a comprehensive and regular record of the care the patient receives from a nurse. Not only does it communicate to other healthcare professionals so that continuity of care is provided for the patient; it is also a legal record that will be the basis of the defense in a malpractice court case (Ashley, 2004:75-76).

2.2.3 The conditions of effective nursing documentation

The Nurses Board of South Australia (2006:np) identified that comprehensive and complete documentation should: be a clear, concise and complete record of nursing or midwifery care; be a factual, accurate, true and honest. Records should be timely, legible and permanent and representative of professional observations and assessments. Furthermore it should be a contemporaneous record of care, including date and time, avoid duplication of information and should identify the person who provided or documented the care.

Nursing documentation is an important part of clinical documentation. Thorough nursing documentation is a precondition for good patient care and for efficient communication and cooperation within the health care professional team (Ammenwerth, Mansmann, Iller & Eichstädter, 2003:70).

The Nurses Board South Australia (2006:np) further identified that nursing documentation should identify the source of information such as information provided by another nurse, midwife, other health care professional or provider or family; contain meaningful and relevant information avoid meaningless phrases. Nursing documentation should contain minimal

transcription of data; be easy to interpret over time; avoid use of abbreviations and should therefore facilitate registered nurses' and midwives' supervision of documentation by enrolled nurses and or unlicensed healthcare workers.

Muller (2001:63) identified that there are five (5) problem areas with reference to clinical record keeping. These are inadequate, incomplete documentation, absence of documentation, all or part of the clinical record missing, alteration of a record, falsification in the clinical record or even fabrication in the clinical record.

2.2.4 Effects of poor nursing documentation

According to Keenan, Yakel and Arbor (2005:385), documentation arising from the nursing process including the care plans, is often filed in the medical record at the beginning of a patient's hospital stay and is soon forgotten. This gives rise to problems such as low quality of documentation. Nursing documentation that is not up to standard takes a toll on patient care and facility as well as on the nursing profession (Childers, 2005:32).

Disruption of the nursing process may contribute to errors in the acute care and delay in effective caring of the patients (Potter, Boxerman, Wolf, Marshall, Grayson, Sledge & Evanoff, 2004:102).

Shortcomings identified by Pullen and Loudon (2006:282) were recognized as the effects of poor record-keeping according to the Audit Commission. These include:

- the low priority given to records management
- the lack of awareness of the importance of good record-keeping
- the lack of information-sharing between professions
- work units
- the tendency to treat records as personal rather than corporate assets
- the lack of coordination between paper, electronic information and strategies; and include the need to maintain confidentiality while legitimately freeing information.

Thus, findings that emerge again and again include: a lack of clarity in the planning and coordination of care, poor record-keeping, inadequate communication between professionals, agencies and or families and poor implementation of legislative obligations, national and local guidance. These may result from the problems of multidisciplinary and

multi-agency working when clear priority is not given to recording and communicating activity to an accepted standard (Mackay in Pullen & Loudon, 2006:282).

2.2.5 Legislation and nursing documentation in nursing practice

Clinical record keeping in nursing is a professional responsibility that is often neglected, resulting in litigation. Evidence of care can only be found in the documentation of the patient's clinical record (Muller 2003:63). The recording of observations, management and relevant data signifies a legal record. The South African Nursing Council, which is the governing body of the nursing profession in South Africa, directs that nursing documentation must not be taken for granted (Searle, 2000:151 & 2005:262).The Nursing Act, Acts and Omission Related to Nursing Practice and the Scope of Practice form the legal framework of the nursing profession of South Africa (Young *et al*., 2003:61).

The South African Nursing Council ‘s regulation relating to the Scope of Practice of persons who are registered or enrolled under the Nursing Act 50 of 1978 states that assessment, diagnosing, planning, implementing and evaluation of the care plan is the task of all registered nurses. The assessment should gather data for nursing care. This data should include identifying the needs of the patient in order to formulate a nursing diagnosis that emphasizes the problems of the patient. The nursing diagnosis will facilitate the development of the nursing care plan to be implemented and evaluated on a continuous basis. The execution of the nursing care plan should include:

- medical prescriptions and instructions
- health education
- coordination of overall health care
- assist with operative, diagnostic and therapeutic procedures
- maintain an environment that facilitates the recovery of patients and should prevent disease.

Continuous monitoring and recording of patients’ progress and their responses to treatment is part of the evaluation task of the registered nurse. Utilizing good nursing care, employing critical thinking combined with a good documentation technique is the best approach to use to avoid an adverse legal outcome. A hospital has vicarious liability for the negligence of its nurses, which allows a patient to bring a lawsuit against either the nurse individually, or the hospital as the employer, or both. In terms of nursing documentation, a patient’s attorney

may suggest the nursing care was not done in a particular situation, because there is no supporting documentation (Giordano, 2003:107).

The most common cause of malpractice cases against nurses include failure to properly monitor and assess the patient's condition and failure to properly supervise a patient resulting in harm to the patient. Properly kept records protect the nurses from becoming liable for error by demonstrating that they have done everything in their power to prevent harm, including consulting with others (Ellis and Hartley, 2008:324). During an investigation, if something has not been recorded, it will be treated as not having happened at all as there will be no proof that the action took place. Therefore, as no health care worker can foresee all eventualities, outcomes of treatment or side effects of a particular drug, good records are absolutely vital, as this leaves less room for negligence (Fletcher & Buka, 1999: 56 and 84). Courts look at the standards of nursing practice for guidance when malpractice cases are investigated (Burkhardt & Nathaniel, 2002:146).

2.3 Relationships of documentation in nursing practice

Documentation in nursing has an essential relationship with coordination of treatment, communication, accountability, responsibility and decision making in nursing care as shown in figure 2.1(Page 18). Nurses are the coordinators of care and are central to supporting efficient and effective care planning and communication of vital nursing care information (Keenan *et al*., 2005:385). Professional responsibility and accountability are two primary reasons for documentation. Documentation provides written evidence of the practitioner's accountability to the patient, the institution, the profession and society (White, 2003:74).

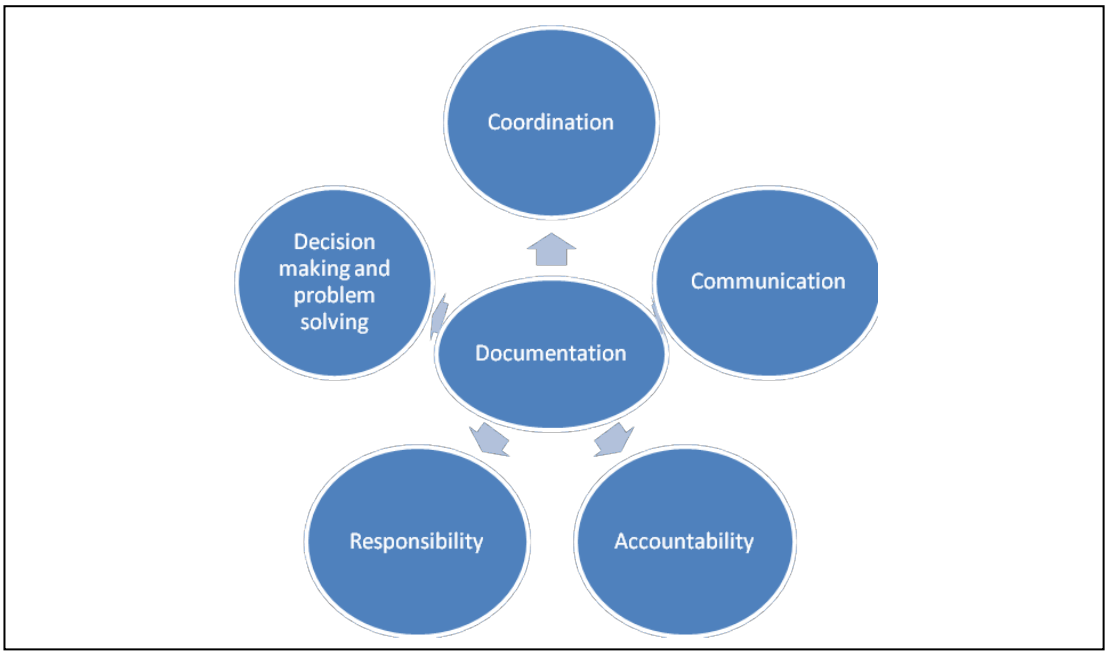

Figure 2.1: Relationships of documentation in nursing practice

2.3.1 Coordination

As a leader and coordinator of care, the professional nurse has the responsibility and accountability for assessing, planning, implementing, and evaluating the care of patients and their loved ones. Nurses are key coordinators and communicators of patient care in the hospital environment. In an acute care setting, nurses are responsible for communicating patient status and responses to treatment and are the centre of communication between interdisciplinary care givers, patients and family members (Dykes *et al.*, 2006: 8). Coordination may include many people and disciplines as in a multidisciplinary team approach as well as face-to-face communication between two nurses sharing a change-of-shift report. To coordinate care of the patient, the intensive care unit relies on documentation assessment and efficient planning of nursing care (Sparbel & Anderson, 2000:18). Coordination implies the orderly synchronisation of different activities in the ICU in order to establish a focus and unity in goal achievement and to facilitate quality, efficiency and effectiveness (Muller, 2003:150).

Documentation is the written proof of the interactions between and amongst health care professionals, patients, their families and health care organizations. This entails the administration of tests, procedures, treatments, client education and the results or patient response to diagnostic tests and interventions. Additionally, documentation provides written records that reflect the patient care provided on the basis of assessment of data and the patient's response to the interventions. Data to be documented include the

patient's condition prior to the specific intervention performed, the patient's response to the intervention and the patient's outcome (White, 2003:73).

2.3.2 Communication

Documentation is essential and has formed the basis of good nursing care communication since the time of Florence Nightingale (Castledine in Cornick, 2005:75). Documentation as a communication tool is basic to all nursing and other health care professionals and contributes to the development of therapeutic relationships. Communication is interactive behavior between people and involves the transmission of a message from one or more persons to another or other persons. Effective communication implies that the message that is received is the same as the message that was intended (Muller, 2003:221). Communication is a dynamic, continuous and multidimensional process for sharing information as determined by standards or policies in health care (White, 2003:73).

White (2003:58) stresses that documentation not only constitutes a legal record, but it also allows for valuable communication amongst other health care team members for the purpose of ensuring continuity of care and evaluating progress towards expected outcomes. Prevention of ill health and promotion of wellness depend on communication of the patient's status relating to the documentation (Young *et al*., 2003:291). Oral communication is insufficient in the event of patient deterioration. Written records provide clear evidence of the actions of the team members in the event of an enquiry (Fletcher & Buka, 1999:136).

According to Carlson (2009:5), nurses must be as proficient in communication skills as they are in intensive care clinical skills. This communication promotes efficient patient care and is the foundation of a health care work environment. In the intensive care unit, it is essential that important information obtained from an assessment that demands immediate intervention, should not only be documented in the medical record but also communicated orally to those other practitioners involved in the patients care. The factor of time on intervention should give direction to decision making when critical information in the intensive care is obtained. Communication via documentation establishes and records what was done to achieve the outcome.

2.3.3 Accountability

The intensive care nurse is required to document all nursing interventions and communication in order to maintain continuity of care of patients in the intensive care unit. Professional accountability refers to the responsibility and liability of the intensive care nurse for the acts and omissions during the nursing care of a patient (Muller, 2003:53).

Accountability is being accountable or responsible for the moral and legal requirements of proper patient care (Schrefer *et a*l., 2002:14). This implies that the nurse should act according to the rules and regulations of the profession, and be willing to be judged accordingly. Carrying out a physician's order may insulate a nurse from liability (Giordano, 2003:105).

According to Bååth *et al*. (2007:12) nursing documentation is an essential element of professional practice because written evidence of nursing reflects the nurses' accountability regarding patients' care. Kelly (2004:31) reveals that accountability form part of the fact that ICU nurses should portray a confidence of holistic care of patients.

2.3.4 Responsibility

"Responsibility is the obligations that flow from one's rights." The nurse has a professional responsibility to give an account of what the diagnostic and therapeutic intervention was. The nurse's observations and how the nurse assessed the patient's condition at varying times during the course of his/her illness must be accurately recorded (Searle, 2005:179, 261).

The intensive care nurse should accept responsibility for documenting nursing activity to ensure continuity of care in the intensive care unit. It is not just in the patients' best interest that effective communication takes place but it is also important for those who are accountable for care delivery that full and complete details are communicated (Sheppard & Wright, 2000: 31).

The responsibility of patient care assessment, planning and management being undertaken by critical care nurses constitute increasing legal claims against nurses. The issue is not about allocating the responsibility of healthcare, but the hospital and nurse has a duty to keep the patient safe (Giordano, 2003: 104).

2.3.5 Clinical decision making and problem solving

According to Jensen, Croskerry and Travers (2009:1) clinical decision making is also known as clinical reasoning and clinical judgment. Hardy and Smith (2008:19) add that clinical inference and diagnostic reasoning have the same meaning. According to Schrefer *et a*l., (2002:483) decision making is the process of evaluating available information and reaching a judgment or conclusion based on that information. Clinical judgment however is the application of information based on actual observation of a patient combined with subjective and objective data that lead to a conclusion. The law recognizes that much of nursing care requires clinical judgment (Giordano, 2003

Clinical reasoning is an element of the professional nursing practice that enables nurses to analyze information relevant to patient care. Furthermore this enables a nurse to apply appropriate knowledge to a clinical situation based on a patient dynamics and thus intervene in a timely and appropriate manner (Potter *et al*., 2004:101).

Hardy and Smith (2008:19) states that to make those judgements in our clinical decision making, we often follow the 'clues' that the patient might share with us during clinical examination, could lead to the location, intensity and duration of patient complaint such as pain. According to Schrefer *et al.* (2002:377), clinical analysis is the use of laboratory data, in determining a diagnosis and treatment regime. This laboratory data consists of blood tests, urine analysis and microscopic studies. Hardy and Smith further states that clinical decision-making are an intrinsic part of clinical practice for advanced practitioners. The advanced practitioner role and their duty of care demand that they are competent in formulating informed decisions. Effective decision-making has the potential to facilitate improvements in health care.

Problem solving is repeatedly used in everyday activities and the nursing practice. It involves the systematic detection of a problem, determining the goals related to the problem, identification of possible approach to achieve those goals, implementing selected approach and evaluate goals achieved. The nursing process is a division of the problem-solving process (Burns & Grove, 2003:34).

2.4 Nursing documentation in the intensive care unit

Critical care nursing is the specialty within nursing that deals with an individual's response to life-threatening problems. These life threatening problems require continuous in-depth assessment and intense therapeutic measures and interventions. The critical care nurse is responsible for ensuring that acutely and critically ill patients and their families receive optimal care (McKinley, 2007:1). The more critically ill the patient is, the more likely he or she is to be highly vulnerable, unstable and with complex health problems, thereby requiring intense and vigilant nursing care and consequently increasing the amount of documentation required (Carlson, 2009:5).

Patients in the ICU are subjected to invasive procedures; with almost half receiving central venous catheters at some time during their hospitalization. These procedures expose patients to further health risks (Pronovost, Wu & Sexton, 2004:1025). Patients in intensive care units (ICUs) are in a critical condition; the cost of even the slightest health error can have severe consequences (Reckess, 2004:1).

According to Rothschild *et al.* (2005:1694) critically ill patients require high-intensity nursing care and may be at especially high risk of injury because they are severely ill.

Rothschild studied the incidence and nature of adverse events and serious errors in the critical care setting. It was determined that adverse events and serious errors involving critically ill patients were common and often potentially life-threatening. Although many types of errors were identified, failure to carry out intended nursing treatment correctly was the leading category.

Urden (2006:26) states that nurses caring for acute and critically ill patients in the ICU are not only required to take appropriate actions in the delivery of patient care, but that they are also required to accurately document their findings, results of interventions and the patients' response to those interventions. Failure to document any aspects of care thoroughly and accurately, may give rise to negligence that may result in litigation. Although the intensive care unit can be an extremely busy and demanding to provide nursing care, documentation under such circumstances is essential (Giordano, 2003:105).

In high dependency nursing care, nurses need to be able to apply their knowledge and skills in order to extrapolate, analyze and critically evaluate the data observed, the interventions and treatment being initiated and the nursing care implemented in order to prevent complications (Sheppard & Wright, 2000;69).

The ICU nurse acts independently when implementing the nursing process. The level of nursing care is intense and the amount of documentation is enormous in the intensive care unit. The intensive care nurse's role is to assess the patient's needs, carry out patient care, make decisions about nursing actions, develop patient care plans and initiate preventative measures to protect the patient. All of these functions of the ICU nurse are enhanced by, and dependent, on adequate nursing documentation (McKinley, 2007:61).

Furthermore, intensive or critical care is characterized by the intense and continuous cardiac monitoring for arrhythmias and mechanically ventilated patients. These interventions require close observation around-the-clock which allows for early intervention with medication, cardio-version or defibrillation to maintain stability, improve the prognosis and maintain vital organ function. As arrhythmias are relatively common in these groups of patients, an intense level of nursing care is required. The intensive care nurse assesses the patient's needs and carries out the patient's care with the use of specialized equipment for monitoring and therapeutic purposes.

The extent of practice in acute and critical care is such that the nurse has to manage a vast amount of patient care data and make decisions that directly impact on patients and families. Documented data facilitates decision-making for carrying out appropriate nursing actions, development of patient care plans and initiation of preventative measures to protect the patient from complications (McKinley, 2007:61).

A study done by Urden (2006:26) with reference to the management of unstable angina in the first 48 hours and later in, in-hospital management, stresses that the initial specific therapeutic interventions are targeted at the prevention of thrombolytic vessel occlusion, the reduction in myocardial oxygen demand and the enhancement of coronary blood flow. This includes the prevention of complications of severe myocardial ischemia, such as arrhythmias. Substantiated further, a study by Flint and Windsor (2004: 438-443) states that ”physiological response of patients in the initial 48 hours of intensive care treatment shows that you can predict death in patients with severe acute pancreatitis in the first 48 hours”. It is clear that patients should receive optimal intensive care treatment for at least the first 48 hours. The fatality rate from conditions can be significantly reduced by the constant bedside care of specialized nurses aided by continuous evaluation of the patient’s status as reported by electronic devices. Therapy in the intensive care unit sometimes needs to happen within two to three seconds after the detection of an arrhythmia. In these instances lives saved can be clearly attributed to nursing interventions. During this critical initial 48 hour period continuous nursing documentation of the patient’s reactions should be made and should continue throughout hospitalization.

2.4.1 Key elements in intensive care

An ICU is characterized by the intense and continuous cardiac monitoring for arrhythmias and the mechanical ventilation of patients. These interventions require close observation around-the-clock and allow early intervention with medication, cardio- version or defibrillation to maintain stability, improve the prognosis and maintain vital organ function. Medico-legal responsibilities support the need for close and continuous monitoring of the critically ill patient (Williams, Schmollgruber & Alberto, 2006:395). As arrhythmias are relatively common in these groups of patients an intense level of nursing care is required. In addition, patients’ being ventilated mechanically pose challenging nursing care interventions as this includes maintaining normal blood gas levels and a haemodynamically stable patient. Consequently, in the ICU there is an increase in patient associated workload, a greater extent of communication and a large and increasing volume of information which needs to be documented during the course of the patient's illness. This leads to more

opportunities for errors in the nursing care of patients in the intensive care unit (Manor-Shulman *et al.*, 2008:250).

By initiating a complete assessment, which includes history taking and physical assessment, a nurse in critical care can detect problems in the early stages, take appropriate interventions and enhance the care patients receive without unnecessary delay (Cox & McGarth, 1999:233). Kelly (2004:31) is making us aware that multifaceted hi-tech developments provoke exponential distancing of intensive care nurses from essential nursing duties.

Williams *et al.,* (2006:395) states that a Hong Kong study of ICUs found that 51% of assessments of patient incidences were detected by direct observation compared with 27% detection by a monitor. They further mentioned that an Australian study showed that bedside staff observing the patient, chart, or equipment detected 83% of incidents, whereas only 8% of patient assessment incidences were detected by monitors. Although sophisticated monitoring equipment is essential to contemporary medicine, they concluded that experienced and skilled direct patient care provided by a critical care nurse at the bedside cannot be substituted by monitors alone.

According to Aslan, Badir and Selimen (2003:62) the critical care nurse is in a position to instantly observe changes in the patient, and thus prevent the development of complications affecting healing. By comparison to nurses working in other areas, ICU nurses must be able to make rapid decisions and must be more aware of and sensitive to physiological and psychological changes in patients. These actions utilize the senses of observation, hearing and touch to interpret these changes.

Admission to hospital is an unpleasant situation and therefore is it stressful to the patient. The stress response can be initiated by any stimulus or stressor that disturbs the individual, for example, heat, cold, noise, infection, emotional upset (Theofanidis, 2005:1). The nursing theorist, Betty Neumann, based her systems model on the patient's relationship to stress in the intensive care unit and his or her reaction and adaptation to stressors. She states that the purpose of nursing is to facilitate optimal patient system stability (Hood & Leddy, 2003:187).

During the first 48 hours of admission to the ICU, the patient's condition is unpredictable. The initial assessment is rapid to facilitate successful diagnosing and treatment of the patient. A study done by Rello, Diaz, Roque and Vallés (1999:1742) shows that they monitored two hundred and fifty intubated patients during the first

48 hours after intubation in order to identify potential risk factors for developing pneumonia within this period. The researchers found that 32 (12%) of these patients developed pneumonia during this time. According to Toman (2009: np), the first 24 hours after acute illness or injury are critical. If poor decisions are made during this time, a patient is likelier to experience complications leading to major organ failure. Such complications can prolong hospital stays and result in death or severe loss of function, necessitating long-term care. Furthermore to recognize and facilitate forecasting of ICU complications rely upon good quality decision-making in the ICU. This decision making is fundamentally about pattern identification of minute changes in a patient's status.

A number of studies have shown elements and effects of intensive care admission. (Azoulay, Pochard, Chevret, Lemaire, Mokhtari, Le Gall, Dhainaut & Schlemmer, 2001:135) show that the family of the intensive care patient should be involved in the recovery process. Meeting the needs of the patients' family members is an essential part of the responsibilities of intensive care unit (ICU) physicians and nurses, who are committed to easing the pain and suffering of those who have a critically ill relative or close friend.

Vincent (2005:1226) shows that the nutritional status of the intensive care patient should be assessed and documented in the nursing notes. Malnutrition of the critically ill patient increases the occurrences of complications and worsens outcomes for these patients. On admission to the ICU many patients are already malnourished and they need adequate and appropriate nutritional support with daily reviews of feeding.

Payen, Bru, Bosson, Lagrasta, Novel, Deschaux, Lavagne, and Jacquot (2001: 2258) showed that critical care patients are at risk for unrelieved pain when they are unable to communicate or when they are recovering from anaesthesia. When critical care patients are unable to self-report their pain intensity, comprehensive pain assessments require an objective evaluation through the observation and documentation of pain indicators.

Kress, Pohlman, O'Connor, and Hall (2000:1471) showed that the sedation level and dosage of the patient in the intensive care unit should be assessed and documented. In patients who are receiving mechanical ventilation to treat anxiety and agitation and to facilitate their care, daily interruption of sedative drug infusions decreases the duration of mechanical ventilation and the length of stay in the intensive care unit.

Attia, Ray, Cook, Douketis, Ginsberg, and Geerts (2001:1268) show that venous thromboembolism is a cause of mortality. Patients are predisposed to DVT's during their ICU stay due to prolonged immobilization, sepsis, vascular injury from indwelling central venous catheters or other invasive interventions and spinal cord injury following neurosurgery or

major trauma. DVT risk assessment, early identification of sign and symptoms in progress report, stratification should be documented in preventing DVT's in the ICU's (Pandey, Patni, Singh & Guleria, 2009:647).

Documentation on the positioning of the patient is crucial. Perrie, Windsor and Scribante (2007:10) show that elevating the backrest of ventilated patients contributes to a decreased incidence of ventilator associated pneumonia (VAP); where aspiration of gastric contents is thought to be a major mechanism in its development and can even occur when the cuff of the endotracheal tube is inflated.

Recording physiological vital signs is one of the core roles of nurses and healthcare professionals in acute care wards. Smith, Fraser, Plowright, Dennington, Seymour, Oliver and MacLellan (2008). The documentation of haemogluco-test results and evaluation is necessary to promote the healing process of the intensive care patient. Acute upper gastrointestinal (GI) bleeding has been recognized as a potential life- threatening complication of stress-induced ulceration in critically ill patients (Lam, Phuong-Dung, Crawford & Patel, 1999:1). Stress-induced hyperglycemia occurs frequently in critically ill patients and has been associated with increased morbidity and mortality in both diabetic and non-diabetic patients. Hyperglycemia has an effect to suppressive immune function and therefore the patient has an increased risk of infection, and potential tissue ischemia due to acidosis or inflammation (Treggiari, Karir, Yanez, Weiss, Daniel & Deem, 2008:1).

In 2005, the FAST HUG system was introduced by Jean-Louis Vincent to improve the quality of care that the intensive care patients receive. Vincent identified seven key aspects of care of all critical ill patients and stresses that these aspects are vital in nursing the critically ill patient. The intensive care nurse must identify and check the following key aspects during nursing care of a critically ill patient and therefore document findings:

F- The feedings to prevent malnutrition
A- The analgesia needs in pain management
S- The sedation level
T- The thromboembolic prophylaxis
H- The head of the Bed Elevated. U- The stress ulcer prevention
G- The glucose Control

This system is related to the five steps in the nursing process whereby each of the aspects should be assessed, problems should be identified and nursing care be planned.

Actions related to problems should be implemented and evaluation of actions should take place. All these actions need to be documented (Vincent, 2005:1229).

The process of weaning a patient from mechanical ventilation is unique in that it requires ongoing assessment and planning by multiple members of the critical care team. The mechanisms used to document and evaluate collaborative endeavors such as weaning are typically lacking. The individuals caring for a patient may not be aware of the plan or the patient's progress related to weaning (Henneman, Dracup, Ganz, Molayeme & Cooper, 2001:207).

2.5 The nursing process as the theoretical framework

The documentation of the nursing process is an important but often neglected part of clinical documentation. The nursing process consists of five phases as shown in figure 2.2: assessment, nursing diagnosis, planning, implementation and evaluation by means of record keeping (Schrefer *et al*., 2002:1202; Young *et al.,* 2003:16 and Amante, Rossetto & Schneider, 2009:53).

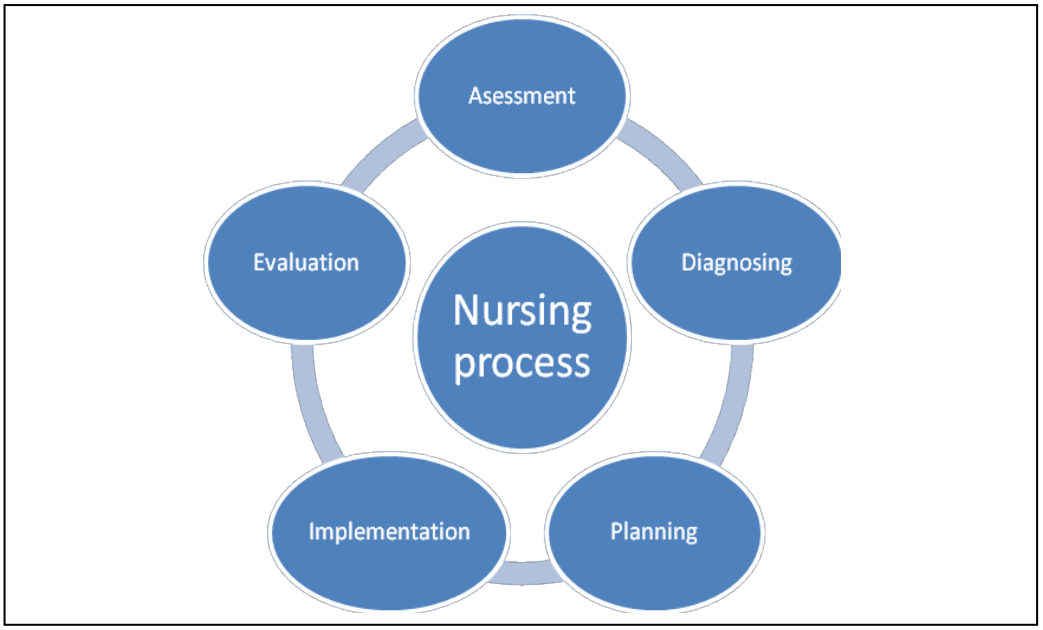

Figure 2.2: Illustration showing the nursing process (Illustration by author)

Regardless of the patient care given in the intensive care unit, the documentation of that care should reflect in the nursing process. The nursing process is therefore a systematic, problem-solving approach to nursing that involves: interaction with each patient to assess needs and problems, making decisions regarding the patients' needs and problems, and implementing the planned nursing actions based on the assessed needs and problems (Young *et al*., 2003:182). Nursing theories help nurses to describe, explain and predict everyday

experiences. Furthermore, they establish criteria to evaluate the quality of nursing care (Hood & Leddy, 2003:182). The registered nurse prepares a nursing care plan based on correct identification, meticulous history taking, careful physical examination, medical diagnosis and treatment and professional judgment (Searle, 2000: 209). The nursing process is concrete and practice based focusing on nursing actions (Kenney, 2002:238).

The nursing theorist, Callista Roy, identifies three elements in her model of nursing: the recipient of nursing, the goal of nursing, and nursing intervention. Her model includes a detailed nursing process, which involves assessing patient's behaviours and their influencing factors, identifying problems, setting goals, selecting interventions, and evaluating outcomes in order to provide comprehensive nursing. This model supplies a framework for focusing, organizing, and directing judgements and actions related to patient care and for achieving, desired patient outcomes efficiently and effectively (Araich, 2001:1, 12). Roy recognizes that the goal of nursing is to promote adaptation by utilizing the nursing process to contribute to health, quality of life and dying with dignity (Roy in Hood and Leddy, 2003:190).

The South African Nursing Council Regulation (R212), relating to the course in Clinical Nursing Science leading to Registration of an Additional Qualification, stipulates that critical care nurses should maintain ethical codes of the profession and practice within the provisions of the appropriate legislation as well as render a scientifically based nursing practice. By utilizing the nursing process and employing critical thinking, bad outcomes that commonly lead to malpractice claims can be reduced (Giordano, 2003:105).

2.5.1 The phases in the nursing process

According to Amante *et al.* (2009:51) the nursing process provides numerous benefits that include:

- a reduction of the incidence and length of hospitalization, as it speeds up the diagnosis and treatment of health problems
- the creation of a cost-efficiency plan
- improved communication among team members, the prevention of mistakes and unnecessary repetitions
- the elaboration of care focused on the individual instead of the disease alone.

2.5.1.1 Assessment

Medical assessments target data pointing to pathologic conditions, whereas nursing assessment focus on the patient's responses to health problems. An holistic data gathering approach is the norm in the assessment of the patients in the intensive care unit .The responsibilities of the critical care nurse are complex and varied, requiring observations that involve assimilation, interpretation, and evaluation of specialized information and subtle changes in patient condition and technological and monitoring outputs (Williams, Schmollgruber & Alberto, 2006: 395).

The most common cause of malpractice cases against nurses include failure to properly monitor and assess the patient's condition and failure to properly supervise a patient, resulting in harm to the patient. A nurse's failures to obtain vital signs and report a patient's deteriorating condition are being held to constitute negligence (Giordano 2003:105). During the assessment of a critically ill patient, the critical care nurses model their inherent clinical judgment skills and this includes reasoning, knowledge response acuity and skill involvement (McKinley, 2007:66).

In assessing the patient, the ICU nurses systematically gather, verify, organize, interpret and document the patient's information. This documented information includes admission health history, physical examination, psychological aspects, perception of health, health risks, coping mechanisms, specific problems, potential and emergency problems, monitoring and response to nursing interventions (Tarnow-Mordi, Hau, Warden & Shearer, 2000:186). The information is obtained from the patient, family, laboratory diagnostic tests, the multi-disciplinary team and the medical records. Data needs to be validated to prevent omissions, misunderstandings and incorrect conclusions that will influence the course of planning for the patient. Organizing the needs and care of the patient, as well as distinguishing between relevant and irrelevant data, is the next step. The basic needs of a patient should be met, before higher level needs are attended to (White, 2003:15 & Young *et al.,* 2003:16).

A nursing assessment may include biographic data, the patient's chief complaint, the history of the present illness, the patient's past medical history, a family history of illness, a lifestyle assessment, social and psychological data, as well as vital signs, signs and symptoms of illness, and a physical examination

Taking a nursing history prior to the physical examination allows a nurse to establish a rapport with the patient and family. Elements of the history include

- health status

- course of present illness including symptoms
- current management of illness
- past medical history including family's medical history
- social history
- perception of illness

According to White (2003:20), assessment data is gathered that include subjective data which is the symptoms that the patient describes and the objective data which is the signs that can be observed and data are measurable that can be seen , heard and felt , and it is observed by one person can be verified by another person observing the same patients . The assessment data is gathered primarily from the patient and this is always the best source but in the ICU the nurses are mostly dependent on secondary sources that include assessment tools and multidisciplinary team.

In the intensive care unit the methods of collection data is predominantly examination by inspection, palpation, percussion and auscultation. Inspection is the process of performing deliberate, purposeful observations in systematic manner, nurse observes visually and uses hearing and smelling to gather data. Palpation is an assessment technique that uses the sense of touch by hand and fingers which can assess temperature, shape, vital sign, tenderness, internal injury. Percussion is the act of striking one object against another to produce sound, the sound waves produced by the striking action over body tissues are known as percussion tones, percussion used to assess the location, shape, size and density of tissues and auscultation is the act of listening with a stethoscope to sounds produced within the body and is performed by placing the stethoscope diaphragm or bell against the body part being assessed (Moore, 2007: 52).

In the ICU, the frequent assessments in cases of emergency as life threatening situations occur, focus on rapid identification of problems and include assessment of Airway Breathing Circulation (ABC). Assessment data must be recorded and reported. Accurate and complete documentation of assessment data is vital for communicating information to the multi-disciplinary team to facilitate coordination of care (White, 2003:26). There is some data that needs to be reported immediately and other data that needs to be recorded for the purpose of evaluation and progression verification of the patient. Problems related to data collection are inappropriate organization of the database, omission of pertinent data, inclusion of irrelevant or duplicate data, misinterpreted data and failure to establish rapport

and partnership. While assessment is the first and most basic step in the nursing process, it is never completed. Instead, assessment is necessarily a continuous process, which begins with the first patient contact and continues with each subsequent contact. While proceeding with the remaining components of the nursing process, nurses should continue to interview, observe, and physically assess the patient in order to ensure the most appropriate, effective nursing care. All behavioral patterns that the patient displays need to be identified and the response of the patient to drug therapy is important in record keeping (Fletcher & Buka, 1999: 121).

History taking may be limited and observational skills in the intensive care are needed to assess system function (Moore, 2007: 50). To assess the allergy status of the patient result in prevention of anaphylaxis. Anaphylaxis may cause swelling of the upper airways and subsequently difficulty in breathing (Moore, 2007: 51). Assessment of the respiratory system consists of breathing and coughing and chest X-ray analysis. To determine the adequacy of gas exchange, the oxygenation of the tissue and excretion of carbon dioxide are the primary purpose of respiratory assessment. Nursing staff are in a prime position to act on findings and ensure that appropriate medical and nursing interventions are initiated by undertaking a full and systemic assessment of the patient's respiratory status. A comprehensive assessment of the respiratory status should be performed on all patients who are critically ill and should be performed by competent nurses to identify potential respiratory problems. To improve the prognosis of the patient, it is essential that the intensive care nurse needs to intervene early (Moore, 2007:48).

Assessment of the neurological system includes the evaluation of level of consciousness (LOC) orientation, mental and sedation status. A change in either is usually the first clue to a deteriorating condition therefore it is the most important parts of the neurological examination. The Glasgow coma scale (GCS) is utilized in the neurological assessment process. A GCS score is based on three patient responses: eye opening, motor response, and verbal response. The patient receives a score for his/her best response in each of these areas, and the three scores are added together. The total score will range from 3 to 15; the higher the number, the better. A score of 8 or lower usually indicates that the patient is in a coma. The neurological assessment can help you detect the presence of neurological disease or injury and monitor its progression, determine the type of care you'll provide, and weigh the patient's response to your interventions. Initially a comprehensive examination which covers several critical areas: level of consciousness and mental status, cranial nerves, movement, sensation, cerebral function and reflexes needs to be executed. This will

establish baseline data with which to compare subsequent assessment findings (Noah , 2004).

Patients in the intensive care are highly dependent on the intensive care nurses for essential nursing care and include skin care, nutritional needs and safety. These needs of the patient must be addressed when implementing the nursing process and must therefore also be documented. The nursing theorist, Dorothea Orem, describes that self care deficits occur when a person is unable to meet self-care needs and needs nursing care that includes guiding, teaching, support and providing a supportive environment (Hood & Leddy, 2003:193). According to Sheppard and Wright (2000:183), patients who are in the initial stages of care during recovery from anaesthesia and surgery are naturally highly dependent and therefore they identified that post operative assessment is the key in providing appropriate and effective care.

2.5.1.2 Nursing Diagnosis

Registered nurses have a responsibility to diagnosing patients. Identification of accurate nursing diagnosis, as a basis for interventions, is a vital step in the nursing process and a critical point in giving the best care to reach the expected outcome for the patient (Florin, Ehrenberg & Ehnfors, 2005:33). The diagnosis of the patient needs to be validated by the assessment data to make a statement describing the patient's health problem and etiology that signifies the probable cause of the health problem (McKinley, 2007:67).

Patient folders hold information on how the patient's condition has been judged, what priorities have been made, and what decisions about care have been planned and implemented. Inadequate nursing diagnosis result in an inadequate nursing care plan by ignoring certain health problems and therefore the quality of care will be put at risks. Nurses who miss or misinterpret some patient data in the diagnostic process create a situation for decreased ability in providing adequate nursing care (Florin *et al*., 2000). The researcher also identified some fundamental aspects of nursing diagnosis in the ICU which are a systematic method of assessment, intense analysis of observations and identification of potential risks in the diagnosing process.

White (2003:31) summarizes the significance of a nursing diagnosis as a statement that describes the patient's actual or potential response to health problems that the professional nurse is licensed and competent to treat. Furthermore, he states that a nursing diagnosis provides the basis for selection of nursing interventions to achieve outcomes for which the nurse is accountable. The critical care nurse discusses significant findings with other members of the health care team. If dealing with potential problems, it is up to the nurse

to identify the risk factors. Thus it is necessary to have knowledge and quick and logical reasoning to associate the signs and symptoms with their possible causes. Specific diagnosis supporting critical illness must be documented (Amante *et al*., 2009:53).

Nurses working in an intensive care unit (ICU) have to confront ethical problems related to end-of-life decision making and these may contribute to high stress levels being experienced by the nurses (Kinoshita, 2007:651-664).

The ICU nurses play an important role in providing care and treatment to patients when questions concerning patients' lives and deaths are in focus. The importance of recognizing ICU nurses' knowledge as a crucial contribution in decision making seems apparent. Communication and co-operation between nurses and physicians should be carried out with mutual respect and continuity (Hov, Hedelin & Athlin, 2007:210).

2.5.1.3 Planning

The planning consists of determining priorities, setting goals, selecting nursing actions and writing nursing care plans. Planning leads to the expected outcome of patient's condition. Furthermore it involves a preliminary plan of care in the documents according to the admission assessment, continuous updating of the patient's plan and preparation for the patient's needs after discharge to rehabilitation (Aggleton & Chalmers, 2000:15). The nursing diagnosis needs to be prioritized, the patient-centered outcome needs to be identified and specific nursing interventions need to be developed. In the planning step, the nursing care plan needs to be documented to serve as a written guideline for strategies to obtain optimal health. Planning coordinates nursing care, promotes continuity of care, encourages communication amongst the multi-disciplinary team and promotes quality nursing care (White, 2003:41).

Marquis and Huston (2000:27) argue that clearly stated goals are frequently omitted in the planning phase of the process. According to Schrefer *et al.* (2002: 1201), a nursing care plan is a plan based on a nursing assessment and nursing diagnosis executed by a nurse. A written nursing care plan should be part of every patient's chart. They identified the following components of such a plan:

- identification of the nursing care problem
- statement of nursing approach to solve problem
- statement of benefit to patient

- statement of specific actions
- evaluation of the patient's response to nursing care
- readjustment of care plan

Good planning consists of the assessment of the strength and weaknesses of substitute strategies to bring about desired result in short term and long term. The nurse involves the patient, family, members of the health team in the planning process (McKinley, 2007:68, 130).

2.5.1.4 Implementation

The nurse intervenes by adapting nursing behavior to take actions to achieve expected outcomes. Implementation consists of performing, assisting or directing the performance of activities of daily living, counseling and teaching the patient or family, giving direct care to achieve patient-centered self care goals, supervising and evaluating the activities. Future health problems can be prevented by the intervention of support, medication, treatment for the current condition, patient and family education or treatment. Implementation is continuous and interactive with the other components of the nursing process. (Holland, Jenkins, Solomon & Whittam, 2003:21).

Having specified goal in the documentation puts nurses in the position to implement the plan of care. These actions or interventions are, doing, recording and delegating (Aggleton and Chalmers, 2000:16) and include, but are not limited to: health teaching, direct patient care, medical treatments, medications and dressing changes. Nurses provide care in order to achieve established goals and then communicate the nursing interventions by documentation and reporting.

The plan can be altered during implementation process depending on the patient's changing needs and priorities. Judgment, critical thinking and decision making skills are essential on selection of appropriate nursing interventions that are based on scientific principles. Typically, negligent monitoring cases arise from a nurse's failure to perform an assessment and notify the treating physician of changes in reporting of abnormal findings (Giordano, 2003:105).

2.5.1.5 Evaluation

The nurse, individual patient and family collaborate to determine whether progress is being made. Change in the patient's health status over time, giving rise to the need of new data, different diagnosis, and modifications in the plan of care (Hood & Leddy, 2003:248).

According to Aggleton and Chalmers (2000:16) and similarly White (2003:63) evaluation according to the nursing process is a means to encourage nurses to compare the actual behavior of which people are capable of at a particular point in their care with the goals previously set in the nursing documentation. They also recognize that there is a definite continuous relationship with the other components of the nursing process.

Registered nurses are responsible and accountable for documenting client care including assessments, interventions carried out, and results of the interventions on client outcomes. Clients who are very ill, considered high risk or have complex health-care needs, require more comprehensive, in depth and frequent documentation by the registered nurse providing the care. The nursing process enables the nurse to organize and deliver nursing care based on scientific reasoning (White, 2003:67). The administration of medication results in decision-making in administrating the drug and the observation of the pa of the patient's response.

The status of patients admitted to an ICU should be revised continuously to identify patients who may no longer be requiring ICU care. Systematic pain assessment and documentation thereof immediately is beneficial for the patient rather than at the end of a shift (Egol, Fromm, Guntupalli, Fitzpatrick, Kaufman, Nasraway, Ryon & Zimmerman, 1999:607).

According to McKinley (2007:68), the nursing process will not be complete until the identified problems are resolved and that evaluation is a continuous process that feeds back to reassessment, additional planning, further intervention and reevaluation. Regular application of evaluation ensures that a client care plan is current and appropriate.

2.6 Continuity of care

Continuity of care is a series of connected patient-care events, both within a health care institution and among multiple settings. It requires coordination and linkages across time, settings, providers, and consumers of health care. Continuity is more commonly viewed as a goal or outcome of nurse and patient interaction implemented through a series of processes or activities labeled "discharge planning" or "case management" (Sparbel & Anderson, 2000:17-24). Continuity of care is to follow the patient through the system and to ensure the patient continues to progress with recovery (Ball & Cox, 2003:363).

Continuity of care is generally used in the discharge planning of a patient, signifying continuing care after leaving the health care facility. The discharge plan seeks to provide services that will enable the patient to become as independent as possible by developing a care plan for ongoing maintenance and improvement of health. This part of patient care prepares the patient for the next phase of care whether it is self care, care by family

members or care by an organization or health care provider (Bendle, Ashby, De Rosa, Franges, Hunt, Frutz, O'Donnell, Roe, Sample & Wick, 2007:37). Continuity of care signifies the care given to the patient during the stay in the intensive care unit as continuous without delay of essential and specific care to the patient. The aims and objectives of all of those involved with caring for the patient should be focused on delivering seamless service of continuance of clinical care through communication and documentation (Sheppard & Wright, 2000:31). Additionally, reporting and documenting is the major communication technique used by health care providers in directing patient-based decision-making and continuity of care (White, 2003:73).

According to Sparbel and Anderson (2000:17), continuity of care in the intensive care unit is of fundamental importance therefore professional nurses need to utilize all their skills and training to assess patients' characteristics and needs and must be motivated to work cooperatively in a multidisciplinary environment. Additionally, they state that ICU nurses need to allow sufficient time to record data and communicate effectively to providers at the next level of care in order to promote continuity among settings.

Patients in ICU could be exposed to greater risks resulting from incomplete documentation. For example, if nursing staff do not document the progress of ventilation and arterial blood-gas results, this can lead to a delay in the weaning of the patient from mechanical ventilation. This could lead to an increase in hospital- acquired infection, with potentially adverse consequences. Adequate nursing documentation positively influences continuity of care whereas incomplete nursing documentation may have a negative impact on nursing care.

In high dependency care it is useful that documentation be standardized in order to save time and energy and to prevent wastage (Sheppard & Wright, 2000:32).

Failure to assess and document pain is one of the most common causes of poor pain management. By assessing and documenting pain thoroughly, one can gain insights into the nature and pattern of the patient's pain and ensure continuity of care across shifts (Chapman, 1999: 25).

Continuity of care appears to be strongly affected by a variety of communication and system factors that include the coordination process and patient needs and assessment. (Sparbel & Anderson, 2000:17).

For efficient continuity of patient care, patients' charts should contain full information concerning admission (patient identification number, date, time, history, examination findings, diagnosis, treatment plan, medicines ordered, doctor attending) and discharge (patient

identification number, discharge date, discharge diagnosis, discharge plan, medicines, doctor attending). Without these 15 elements, medical personnel may have difficulty determining how the patient's care has been managed resulting in ineffective clinical auditing for quality improvement (Salmon, Heavens, Lombard & Tavrow, 2003:1).

2.7 Patient safety

Patient safety is not only one of the basic needs according to Maslow's hierarchy but is also a right. Finally nursing takes on the role of advocacy in the care of individuals, families, communities, and populations. Good records form a vital part of the assessment of individual patients and their particular needs in order to aid the safety of both patient and staff (Fletcher and Buka, 1999:72).

The control of the profession addresses the societal needs, societal expectations, the laws governing the rights of citizens and the need to develop services to society in an orderly manner. Record keeping of patients' treatment is an aspect of nurse- patient relationship and therefore the nursing theorist, Hildegard Peplau, emphasises that there should be a therapeutic relationship between the nurse and the patient (Hood & Leddy, 2003:197). The patient trusts that the nurse will ensure his protection through the data she has included in the written record (Searle, 2005:5, 262). The Nursing Act No. 33 of 2005 stipulates that nurses should create and maintain an environment that fosters safety, compassion and caring.

Intensive care nursing is oriented towards the nursing process. The nursing process is an important aspect of both continuity of care and patient safety. The documentation of the nursing process is considered to be a key aspect of clinical documentation but is often neglected (Ammenwerth, Mansmann, Iller & Eichstädter, 2003: 274).

Björvell *et al.* (2003:2006) found that registered nurses perceived nursing documentation to be beneficial in their daily practice and to increase patient safety. Critical care settings must manage all individual challenges simultaneously while remaining focused on the delivery of safe patient care. Nursing documentation influence the safety of the patient.

Missing, incomplete, or illegible documentation can seriously impede patient care and the defense of a malpractice claim, even when the care was appropriate. The commonest cause of malpractice cases against nurses include failure to properly monitor and assess the patient's condition and failure to properly supervise a patient resulting in harm to the patient.

The South African Nursing Council (2008) addresses the safety of a patient in the policy on nurses' rights with the statement that nurses should operate within the ethical rules governing the profession and his or her career scope of practice to carry out his or her duty to patients. Recording and communication of pertinent clinical information is expected of nurses in order to practice in accordance with the scope of practice.

Documentation of nursing actions in the intensive care unit gives rise to continuity of care and therefore improved patient safety by helping to reduce errors, to identify "at- risk" patients, and to facilitate timely and shared information. The purpose of the intensive care unit (ICU) is to treat patients with critical health problems with its own resources and specialized human resources. These professional critical care nurses seek to re-establish the vital functions of the body through safe and continuous healthcare practices. (Amante *et al*., 2009:51).

2.8 Conclusion

This chapter reflects the importance of nursing documentation, particularly in the intensive care unit where continuity of care is essential. The nursing process serves as the conceptual framework of the study and continuity of care, communication and coordination of care relating to the research. The nursing process is theoretically based as it is grounded in knowledge of science and humanity. The nurse must incorporate knowledge from many disciplines such as sociology, physiology in order to deliver holistic care, that is, to meet the total needs and safety of the patient. Documentation in the ICU is carried out for a number of reasons. It is fundamental in communication and coordination of activities in the ICU. It ensures continuity of care and provides up-to-date patient status. Professional responsibility and accountability to document nursing intervention fulfils hospital policies which provide the legal aspects of 'duty of care'.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

In chapter 2 the researcher discussed the literature review concerning nursing documentation, nursing processes and intensive care nursing. This chapter gives an overview of the research methodology for this study as implemented, as planned and described in chapter 1. According to Brink (2006:111), methodological studies focus on the development, testing and evaluation of research instruments and methods used in research investigations. Firstly the problem and objectives of the research are introduced followed by the research methodology which starts with the justification for the research design and instrumentation. This is followed by a description of the study population and the sampling used as well as validity and reliability. The data collection methods, data analysis, ethical considerations and the limitations of the study are then discussed.

3.2 Objectives of the research study

Research objectives are clear, concise, declarative statements towards which desire goals are directed (Brink, 2006:70). The objectives set for this study were:

- To determine whether the documentation of the assessment of the patients were adequately done in the ICU.
- To determine whether the documentation of the nursing diagnoses were based on the assessment of the patients in the ICU.
- To determine whether the documentation of the nursing care plan was based on the patient diagnoses.
- To determine whether documentation of the implementation of the nursing care in the ICU was done according to the care plans.
- To determine whether the documentation showed evidence of continuous evaluation of the nursing care plan.

3.3 Research methodology

3.3.1 Research design

A retrospective descriptive research design with a quantitative approach was applied to audit objectively the status of nursing documentation of patients who were admitted to the ICU's of

an academic hospital in the Western Cape in the first 48 hours of admission. A retrospective study investigates a phenomenon, situation, problem or issue that has happened in the past, conducted on the basis that data are available for that period (Kumar, 2005: 99). Exploratory examine all data descriptively to give better understanding of the data. A descriptive design is to gain more information about characteristics within a particular field of study. (Burns & Grove, 2003:200 & 313).

3.3.2 Population and sampling

The population is the total group of persons or objects that meet the criteria that the researcher is interested in studying (Brink, 2006:132). The research population (N) was the documentation (files) of patients admitted in the ICU's between 1 July 2008 and 31 December 2008 at an academic hospital in the Western Cape as shown in table 3.1. A total of 151 files were utilized as the population that was validated by the statistician. The researcher gathered all the file numbers of the population and utilized a stratified random sampling process to select the files as shown in table 3.2. A number was allocated to each file drawn by the researcher for the sample. The researcher only worked with these numbers and not the file numbers of the patients.

Table 3.1: Total population of admissions per month over 6 month period (July-December 2008) for each ICU.

ICU	July	August	September	October	November	December
Unit A	50	64	66	66	64	56
Unit B	15	15	12	12	9	8
Unit C	64	67	51	55	45	34
Unit D	9	18	16	13	12	10
Unit E	37	26	22	22	27	26
Unit F	68	46	67	57	61	63
Unit G	23	20	26	28	27	24
TOTAL	**266**	**256**	**260**	**253**	**245**	**221**

Table 3.2: Total population of admissions and sample for each ICU over the 6 month period (July to December 2008).

ICU	Total Population (N)	Sample 10% (n)
Unit A	366	37
Unit B	71	7
Unit C	316	32

Unit D	78	8
Unit E	160	16
Unit F	362	36
Unit G	148	15
TOTAL	**N= 1501**	**n=151**

3.3.3 Selection criteria

The following selection criteria defined for the sample:

- 18-years-and older patients who were admitted to one of the ICU's as listed in tables 3.1 and 3.2. between July 2008 and December 2008

3.3.4 Pilot study

A pilot study was conducted on 10% (n=15) based on the actual sample of files of 151.

A pilot study is defined as a smaller version or 'dummy run' of a proposed study (Burns & Grove, 2003:42 and Brink, 2006:54). The pilot study was done to test the instrument for any inaccuracies and ambiguity. The sample for the pilot study included files from units A, B, C, D, E, F and G. Each file drawn by the researcher was allocated a number. The researcher only worked with these numbers and not the file numbers of the patients. These files were excluded from the main study. Findings obtained from the pilot study showed some pointless data and redundancy of some questions. No statistical analysis of the data was done for the pilot study as this is not practice in the Division of Nursing. The researcher modified the audit instrument as guided by the findings of the pilot study.

3.3.5 Reliability and Validity

Reliability is concerned with how consistently the measurement technique measures a variable or concept (Burns & Grove, 2003:45 and Streubert & Carpenter, 1999:332). The consistency of the audit instrument was assured through experts in nursing science and intensive care nursing, a statistician and a research methodologist. A pilot study was conducted that established uniformity in the instrument and tested the feasibility of the study. Validity is the extent to which the instrument actually reflects or measures what it is supposed to measure (Burns & Grove, 2003:45). Content validity was secured by the literature, experts in intensive care nursing, a statistician and research methodologist. The content of the measurement instrument was substantiated by the scientific nursing process. The measuring or audit instrument on intensive care nursing documentation was circulated to experts in measuring the concept; intensive care documentation. Modifications to the instrument were done based on feedback from a practising critical care nurse and a qualified critical care

nursing lecturer who has insight in the standards of nursing documentation as well as the findings of the pilot study.

3.3.6 Ethical consideration

According to Brink (2006:31), ethical principles encompass respect for persons, beneficence and justice which guides researchers to conduct ethical research in an ethical manner. These principles are based on human rights that need to be protected. The proposal of this study was presented to the Health Research Ethics Committee of the University of Stellenbosch who gave ethical clearance to the study and granted a waiver for research (See annexure B & C). In addition, a written consent was obtained from the Chief Executive Officer of the academic hospital to conduct the research in the hospital and specifically to gain access and to utilize patient files (See annexure D). A number was allocated to each file drawn by the statistician for the sample. The researcher only worked with these numbers and not the file numbers of the patients. This ensured confidentiality, privacy and anonymity of patient information. Only the researcher had access to the information and data obtained during this study. Data is now kept in a locked cupboard allowing only access to the researcher. The researcher will retain all data for a period of 5 years in a locked cupboard. Files will be kept for 5 year at the hospital.

3.3.7 Instrumentation

The researcher utilized an audit instrument to gain data for the study. Instrumentation is the appliance of specific rules to the development of measurement tool or instrument. This instrument is selected to examine a specific aspect in a study (Burns & Grove, 2003:45). An audit instrument is a review and evaluation tool for health care service (Schrefer *et al*., 2002:158). The researcher developed the audit instrument based on evidence-based clinical guidelines, documentation principles, and the foundation of the nursing care researched literature. The audit instrument was given to a critical care nurse and a nursing lecturer who has insight in the standards of nursing documentation research methodologist and a statistician (See annexure A). The numbers of variables of the audit instrument were reduced from 81 to 57 due to redundancy and duplication of some of the variables in all phases of the nursing process. The audit instrument focused on:

Section A: Demographic data

In this section the researcher focuses the questions on the demographic data that consists of the date of admission, file number, the unit that the patient was admitted to, whether the patient was transferred or admitted from emergency unit or theatre, the age, gender and medical diagnosis.

Section B: Assessment documentation

In this section the questions focus on assessment documentation. This includes the essential needs of the patient, physical assessment and as patient safety.

Section C: Documenting Nursing Diagnoses

This section is concerned with questions focused on the nursing and medical documentation.

Section D: Planning documentation

To determine the adequacy of planning the researcher focuses the questions in this section on the nursing care plan which include short and long term planning.

Section E: Implementation documentation

This section consists of three questions that are related to nursing documentation on implementing the nursing care plan.

Section F: Evaluation documentation

This section is concerned with questions that are related to the evaluation step of the nursing process from the initial assessment data to modification on the nursing care plan.

3.3.8 Data collection

Data collection is the specific, systematic gathering of information relevant to the research purpose, specific objectives or questions according to a pre-established plan (Burns & Grove, 2003:45 and Brink, 2006:54). The researcher collected the data personally utilising the audit instrument. The data collection spanned from the 18th August 2009 to12th October 2009. The files were ordered from the records department 24 hours before the time. For the first few records it took the researcher about one hour to audit one file and thereafter 1 hour to audit 3 files.

3.3.9 Data analysis and interpretation

The researcher examined the data for completeness and accuracy. The researcher utilized an excel sheet that was designed by a statistician to capture the data. According to Mouton (2001:108) data analysis involves “breaking up” data into manageable themes, models, fashion and associations in understanding the various basic elements of the data. The statistician analyzed the data using statistical programs namely STATSITICA Version 8.1 software. Various statistical associations between variables were carried out using the Chi-square test on a 95% confidence level. Data is presented in the form of graphs, tables

and frequencies. The researcher interpreted the data and drew conclusions about statistical result and associations.

3.4 Limitations

The limitation identified is that the pilot study was done to test the instrument for any inaccuracies and ambiguity only and no analysis of data was done. According to Burns and Grove (2003:42), limitations are restrictions in a study that may lessen the credibility and generalization of the findings.

3.5 Conclusion

In this chapter, the researcher explained and discussed the research methodology related to the study that was implemented. The data analysis and interpretation and discussion related to the findings are discussed in chapter 4.

CHAPTER 4: DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction

In this chapter the data analysis and interpretation are presented. According to Brink, (2006:170), data analysis entails categorising, ordering, manipulating and summarising the data whereafter it is described it in meaningful terms. Interpretation is when the researcher offers an understanding and explanation of what the data concludes (Burns & Grove, 2003:389). The data presented is quantitative.

4.2 Description of statistical analysis

The data are presented in frequency distribution tables. Histograms were created from the frequency distribution tables. Descriptive analysis completed, included the means and standard deviations (SD). A SD can be defined as a measure of dispersion that is calculated by taking the square root of the variance. A mean is defined as the value obtained by summing all the scores and dividing the total by the number of scores being summed (Burns & Grove, 2009:555, 545).

The data are presented in the form of frequency distribution tables. Bar charts were created from the frequency distribution tables. A follow up confirmatory analysis to test for equality of proportions across the levels of the variables was carried out using the chi-square test. The chi-square test for independence was also used to test for associations between demographic variables and the findings of questions according to section B-F, due to sparseness of the contingency tables for the two- way cross classifications between demographic data and responses to the questions under study. The chi-square tests for the best fit show that the responses were not equally distributed across the categories of variables and, for all the variables. Only some selected variables had statistically significant associations with the demographic variables. The chi square test, a test for significance, is used to quantify the degree to which chance variability may account for the results observed in any individual study (Burns & Grove, 2009:499).

The P-value is the measure reported from all tests of significance. It is defined as the probability that an effect at least as extreme as that observed, in a particular study, could have occurred by chance alone. If the p-value is greater than 0.05 by convention the chance cannot be excluded as a likely explanation and the findings are stated as not statistically

significant at that level (Burns & Gove, 2003:328-331). Therefore the 95% confidence interval was applied to determine whether there is an association between variables.

The Mann–Whitney U test, is a non-parametric test, which could be applied to assess whether two independent samples of observations came from the same distribution. It is one of the best-known non-parametric significance tests. The level of measurement in the Mann-Whitney U test is ordinal for both the independent and dependent variables. The level of statistical significance was set at <0.05%.This means that the confidence level is 95% that the sample results reflect the population accurately and are due to a real relationship in the population, not chance factors (Neumann, 2000:338). In addition according to Burns and Grove (2009:545) the Mann-Whitney U test, is used to analyse ordinal data with a 95% of the power of the T-Test to detect differences between groups of normally distributed populations.

The Kruskal-Wallis test is defined as a most powerful non-parametric analysis technique for examining three independent groups for differences (Burns & Grove, 2009:706).

4.3 Auditing of files

The files were audited and allocation of scores was given namely:

- adequate = 2,
- inadequate= 1,
- absent=0

Adequate nursing documentation entails accurate and complete collection of data to support assessment, diagnosing, planning, implementing and evaluating nursing care (Kozier Berman & Snyder *et al*., 2004: 271). Specific data needs to be gathered in all phases of the nursing process as explained in the literature review and shown in the audit instrument. Inadequate entails inaccurate and incomplete documentation and the absence of data indicated by 0. An acceptable adequate score for an ICU is 95% due to the critical status of patients in ICU as described in section 2.4.

4.4 Section A: Demographic data (Questions 1-7)

4.4.1 Questions 1-2: Date and file number

The analysis showing whether the date and file number was accurately recorded has been analyzed with the various sections.

4.4.2 Question 3: Distribution of files audited per unit

The distribution of files audited per unit is shown in table 4.1. As described in chapter 1 and 3 the stratified random sampling was applied with a weighting of 10% of the total population.

Table 4.1: Distribution of files audited per unit

Unit	**A**	**B**	**C**	**D**	**E**	**F**	**G**
N	37	7	32	8	16	36	15
TOTAL N=151							

4.4.3 Question 4: Transferred or admitted from emergency, ward or operating theatre.

The majority of patients, 41% (n=62) were admitted from the emergency unit, followed by n=51 (34%) transferred from a ward and n= 38 (25%) from the operating theatre as shown in Table 4.2.

Table 4.2: Transferred or admitted from emergency, ward or operating theatre.

Criteria	**n**	**%**
Emergency unit	62	41
Transfer from ward	51	34
From theatre	38	25
	151	100

4.4.4 Questions 5-6: Age and gender distribution

Table 4.3 shows that the majority of files audited n=113 (75%) indicated a patient age between the ages 31 and 60 years, a mean age =46, with a minimum age of 18 and a maximum of 82 years. In addition the majority of files audited n=100 (66%) were that of male patients, and female n=51(34%). The mean age of males was 45.9 and females 46.2. SD for males 14.76 and females 14.89

Table 4.3: Age and gender distribution

Age	**0-20**	**21-40**	**41-60**	**61-80**	**81-100**
	3(1.9%)	49(32.4%	75(49.6%)	23(15.2)	1(0.6%)
Gender	**Male**	**Female**			
TOTAL	100(66%)	51934%)			
N= 151					

4.4.5 Question 7: Medical diagnosis

The medical diagnoses of the patients were too broad and thus an accurate account was too complex to calculate.

4.5 Section B: Assessment documentation (Questions 8-37)

Subjective and objective data is collected by using various types of assessments from several sources. Continuity of care is affected by the assessment process of the needs of the patient supported by Sparbel & Anderson (Section 2.7).

4.5.1 Question 8: Identification of nursing documentation

Table 4.4 shows that n=23 (15.2%) of the files audited were inadequately identified, this is a critical score in a hospital and more so in ICU. Patients are critically ill and receive life saving interventions. Inadequate documentation impedes ICU care where patients are most vulnerable. Therefore zero tolerance is standard against which identification is measured. According to the scope of practice Regulation 2598 as promulgated by the Nursing Act 50 of 1978 all patient records should be clearly identified (See section 2.2.5). No statistical results of significance were obtained.

Table 4.4: Identification of nursing documentation

UNIT	Identification: n (row %) Score=1	Identification: n(row %) Score = 2	Row Totals N
A	5(13.5%)	32(86.5%)	37
B	0(0%	7(100%	7
C	5(15.6%)	27(84.4%)	32
D	1(12.5%)	7(87.5%)	8
E	3(18.8%)	13(81.3%)	16
F	7(19.4%	29(80.6%)	36
G	2(13.3)	13(86.7%)	15
TOTAL	23	128	151

4.5.2 Questions 9-11: The entry of the date, time and signature

The majority, n = 150 (99.3%) of the files audited as shown in table 4.5 were adequately dated, however it is a concern to note that the time n=15 (9.9%) and signatures 148 (98%) recorded of interventions, writing of reports, assessments and evaluations were inadequately recorded. The results further show a statistical association of significance between the unit and recognizable signatures (p=0.02954) using the chi - square test. Signatures were in most cases not recognizable which could result in litigation. The date, time and signature is of critical importance in an ICU due to the complex nature of care being give to the patients as supported by Nurses Board South Australia (See section 2.2.5). Intensive care nurses needs to consistently add the date and time of entry to the record as well as improve in signing recognizable signature especially for lawsuit purposes.

Table 4.5: The entry of the date, time and signature

Score allocated	**2**	**1**	**0**
Date	150(99.3%)	1(0.7%)	0
Time	136(90.1%)	15(0.9%)	0
Signatures	3(2.0%)	148(98%)	0
Total: N= 151			

4.5.3 Question 12 and 13: Medical and surgical history

Tables 4.6 and 4.7 show that the medical n=60 (39.7%) and surgical history n= 53 (35.1%) was inadequately assessed as reflected in the documentation. Unit B is the only unit that obtained a 100% score related to the documentation on the medical history. Unit D has shown poor recording of both the medical and surgical history. Scores vary between 0 and 1. The results further show a statistical association of significance between the unit and recording of the medical history using the chi square test (p-value <0.05) and surgical history (p-value <0.05).

Medical and surgical history is essential to identify potential problems which may hamper effective, efficient care such as an underlying haematological problem. A decrease in the platelet count may, for instance, result in bleeding tendencies Smeltzer and Bare (2004:913).

Table 4.6: Medical history

UNIT	Medical history n(row %) Score =0	Medical history n(row %) Score=1	Medical history n(row %) Score = 2	Row totals n
A	6(16.2%)	12(32.4%)	19(51.5%)	37
B	0(0%)	0(0%	7(100%	7
C	4(12.5%)	20(62.5%)	8(25.0%)	32
D	4(50%)	4(50%)	0(0%)	8
E	2(12.5%)	8(50%)	6(37.5%)	16
F	4(11.1%)	6(16.7%	26(72.2%)	36
G	2(13.3%)	10(66.7%)	3(20%)	15
TOTAL	**22**	**60**	**69**	**151**

Table 4.7: Surgical history

UNIT	Surgical history n(row %) Score= 0	Surgical History n(row %) Score= 1	Surgical history n(row %) Score= 2	Row totals N
A	6(16.2%)	13(35.1%)	18(48.7%)	37
B	0(0%)	0(0%	7(100%	7
C	11(34.4%)	16(50%)	5(15.6%)	32
D	4(50%)	4(50%)	0(0%)	8
E	7(43.8%)	8(50%)	1(6.3%)	16
F	6(16.7%)	4(11.1%	26(72.2%)	36
G	5(33.3%)	8(53.3%)	2(13.3%)	15
TOTAL	**39**	**53**	**59**	**151**

4.5.4 Question 14-15: Current medication and allergies

Table 4:8 shows that all the units (100%) obtained a score of 2 (adequate documentation) for recording current medication except unit E who obtained 75%.The results show a statistical association of significance between the unit and recording of current medications using the chi square test (p-value<0.05). the units are more likely to record current medications.

Table 4.9 shows further that only 59 (39%) of the files audited obtained a score of 2. This shows that units are less likely to record whether patients have allergies. The results further show a statistical association of significance between the unit and recording of allergies using the chi square test (p-value<0.05).

Table 4.8: Current medications

UNIT	Current medications n (row %) Score= 1	Current medications n(row %) Score= 2	Row totals N
A	0(0%)	37(100%)	37
B	0(0%	7(100%)	7
C	0(0%)	32(100%)	32
D	0(0%)	8(100%)	8
E	4(25%)	12(75%)	16
F	0(0%)	36(100%)	36
G	0(0%)	15(100%)	15
TOTAL	4	147	151

Table 4.9: The allergic status of the patient

UNIT	Allergies n(row %) Score= 0	Allergies n(row %) Score= 1	Allergies n(row %) Score= 2	Row totals N
A	6(16.2%)	0(0%)	31(83.87%)	37
B	0(0%)	0(0%	7(100%	7
C	3(9.4%)	18(56.3%)	11(34.4%)	32
D	2(25%)	2(25%)	4(50%)	8
E	2(12.5%)	5(31.3%)	9(56.3%)	16
F	7(19.5%)	5(13.9%	24(66.7%)	36
G	3(20%)	8(53.3%)	4(26.7%)	15
TOTAL	39	53	59	151

The administration of medication is one of the chief responsibilities of the registered professional nurse. To assess the current medication of the patient will inform the health team about the patient ‘s compliance of the medication and to identify drug related needs. Gathering this information will help and prepare the selection of medication that will be effective in current treatment of the patient as well as incompatibility with one or more types of medication. Furthermore this action will identify the disease status of the patient that was not communicated, e.g. diabetes mellitus, hypertension (Kozier *et al.*, 2004:763).

It is critical that the patient is assessed for any allergies and this should be known to all the members of the multidisciplinary team to ensure that the patient is not exposed to potential allergens such as penicillin. Any exposure to allergens may initiate anaphylaxis and lead to respiratory distress that could be fatal (Kozier *et al*., 2004:789).

4.5.5 Question 16: Socio-economic status

Table 4:10 shows that n= 54 (35.8%) of the patients socio- economic status were inadequately assessed and 16 (10.6%) were not assessed at all as reflected in the files. The results further show a statistical association of significance between the units and the assessment of the socio-economic status of the patient as reflected in the file using the chi square test ($p<0.05$). The units are less likely to record the socio-economic status of the patient. The information obtained about the socio-economic status guides the professional nurse in setting long- term goals for patient rehabilitation to achieve an acceptable quality of life as described by Smeltzer and Bare (2004.159).

Table 4.10: Socio-economical status

UNIT	Socio-Econ n(row %) Score= 0	Socio-Econ n(row %) Score= 1	Socio-Econ n(row %) Score= 2	Row totals N
A	2(5.4%)	6(16.2%)	29(78.4%)	37
B	0(0%)	0(0%)	7(100%	7
C	1(3.1%)	19(59.4%)	12(37.5%)	32
D	1(12.5%)	5(62.5%)	2(25%)	8
E	1(6.3%)	11(68.8%)	4(25%)	16
F	10(27.8%)	1(2.8%)	25(69.4%)	36
G	1(6.7%)	12(80%)	2(13.3%)	15
TOTAL	16	54	81	151

4.5.6 Question 17-18: Subjective and objective data

Table 4:11 shows that the majority n=135 (89%) of the patients subjective data were adequately assessed, obtaining a score of 2. The results further show a statistical association between the unit and the assessment of the subjective data of the patient as reflected in the audited file using the chi square test (p-value<0.05).

Table 4.12 shows that the objective data is not adequately recorded, n= 24 (16%) obtained a score of 1. The results further show no statistical association of significance between the unit and the assessment of the objective data as reflected in the audited file using the chi square test (p=0.18). The assessment of the subjective data is important to obtain, as a collateral to the objective data. Subjective data refer to the symptoms that include sensations, feelings, values, beliefs, attitudes and perception of personal health status. The communication between the patient and the nurse.. It provides information to direct theidentificaton of potential life threatening problems (Kozier *et al*.,2004:262). However

objective data obtained through tests and examination of the patient is of importance in assisting to diagnose accurately as described in section 2.5.1.2.

Table 4.11: Subjective data

UNIT	Subjective data n (row %) Score= 1	Subjective data n (row %) Score= 2	Row totals N
A	5(13.5%)	32(86.4%)	37
B	0(0%)	7(100%	7
C	0(0%)	32(100%)	32
D	1(12.5%)	7(87.5%)	8
E	4(25%)	12(75%)	16
F	6(16.7%)	30(83.3%)	36
G	0(0%)	15(100%)	15
TOTAL	16	135	151

Table 4.12: Objective data

UNIT	Objective data n (row %) Score= 1	Objective data n (row %) Score= 2	Row totals N
A	4(10.8%)	33(89.2%)	37
B	0(0%)	7(100%	7
C	4(0%)	28(87.5%)	32
D	1(12.5%)	7(87.5%)	8
E	4(25%)	12(75%)	16
F	10(27.9%)	26(72.2%)	36
G	1(6.7%)	14(93.3%)	15
TOTAL	24	127	151

4.5.7 Questions 19- 25: Assessment of the systems: cardiovascular, respiratory, neurological, gastrointestinal genito-urinary, endocrine and musculo-skeletal

Table 4:13 shows that the cardiovascular system was adequately assessed in only two units, obtaining a score of 2. This system is a critical system to be assessed in all units. The results further show a statistical association with significance between the unit and the assessment of the cardiovascular system using the chi square test (p-value <0.05). The units are more likely to assess this system.

Table 4.13: Cardio-Vascular system

UNIT	CVS n (row %) Score= 1	CVS data n (row %) Score= 2	Row totals N
A	7(18.9%)	30(81.1%)	37
B	0(0%)	7(100%	7
C	1(3.1%)	31(96.9%)	32
D	8(100%)	0(0%)	8
E	11(68.8%)	5(31.3%)	16
F	0(0%)	36(100%)	36
G	2(13.3%)	13(86.7%)	15
TOTAL	29	122	151

Table 4.14 shows that the majority of the files that were audited indicated that the respiratory system was adequately assessed n=139 (92%), obtaining a score of 2. However unit D shows that no single patient was adequately assessed. This system is a critical system to be assessed as most patients require mechanical ventilation. The results further show a statistical association of significance between the unit and the assessment of the respiratory system using the chi square test (p-value<0.05).

Table 4.14: Respiratory system

UNIT	RESP n (row %) Score= 1	RESP data n (row %) Score= 2	Row totals N
A	3(8.11%)	34(91.9%)	37
B	0(0%)	7(100%	7
C	0(0%)	32(100%)	32
D	8(100%)	0(0%)	8
E	0(0%)	16(100%)	16
F	0(0%)	36(100%)	36
G	1(6.7%)	14(93.3%)	15
TOTAL	12	139	151

Table 4.15 shows that only 89 (59%) of the files that were audited indicated that the neurological system was adequately assessed, obtaining a score of 2.

Table 4.15: Neurological system

UNIT	Neuro N(row%) Score=0	Neuro n (row %) Score= 1	Neuro n (row %) Score= 2	Row totals N
A	0(0%)	12(32.4%)	25(67.6	37
B	0(0%)	0(0%)	7(100%)	7
C	0(0%)	5(15.6%)	27(84.4%)	32
D	0(0%)	0(0%)	8(100%)	8
E	1(6.3)	13(81.3%)	2(12.5%)	16
F	0(0%)	29(80.6%)	7(19.4%)%)	36
G	0(0%)	2(13.3%)	13(86.7%)	15
TOTAL	1	61	89	151

Table 4.16 shows that only n=82 (54.3%) of the files that were audited indicated that the gastro-intestinal system were adequately assessed, obtaining a score of 2. However unit D shows that no single patient was adequately assessed. The results further show a statistical association of significance between the unit and the assessment of the gastro-intestinal system using the chi square test (p-value<0.05).

Table 4.16: Gastro-Intestinal system

UNIT	GIT (row%) Score=0	GIT n (row %) Score= 1	GIT n (row %) Score= 2	Row totals N
A	0(0%)	11(29.7%)	26(70.3	37
B	0(0%)	0(0%)	7(100%)	7
C	1(3.1%)	16(50%)	15(46.9%)	32
D	0(0%)	8(100%)	0(0%)	8
E	1(6.3)	11(68.8%)	5(31.3%)	16
F	0(0%)	13(36.1%)	23(63.9%)%)	36
G	1(6.7%)	8(53.3%)	6(40%)	15
TOTAL	2	67	82	151

Table 4.17 shows that only n=89(58.9%) of the files that were audited indicated that the genito-urinary system was adequately assessed, obtaining a score of 2. However, unit D shows that no single patient was adequately assessed. The results further show a statistical association of significance between the unit and the assessment of the genito-urinary system using the chi square test (p-value <0.05)..

Table 4.17: Genito-Urinary system

UNIT	G-U n (row %) Score= 1	G-U n (row %) Score= 2	Row totals N
A	11(29.7%)	26(70.3)	37
B	0(0%)	7(100%)	7
C	13(40.6%)	19(59.4%)	32
D	8(100%)	0(0%)	8
E	9(56.3%)	7(43.8%)	16
F	12(33.3%)	24(66.7%)	36
G	9(60%)	6(40%)	15
TOTAL	62	89	151

Table 4.18 shows that only n=94 (62.3%) of the files that were audited indicated that the endocrine system was adequately assessed, obtaining a score of 2. However, unit B shows to be the only unit in which all patients were adequately assessed. The results further show a statistical association of significance between the unit and the assessment of the endocrine system using the chi square test (p-value <0.05).

Table 4.18: Endocrine system

UNIT	Endocrine n (row %) Score= 0	Endocrine n (row %) Score= 1	Endocrine (row %) Score= 2	Row totals N
A	0(0%0	9(24.3)	28(75.7%)	37
B	0(0%)	0(0%)	7(100%)	7
C	0(0%)	15(46.9%)	17(53.1%)	32
D	1(12.5%)	6(75)%)	1(12.5%)	8
E	0(0%)	6(37.5%)	10(62.5%)	16
F	0(0%)	9(25%)	27(75%)	36
G	0(0%)	11(73.3%)	4(26.7%)	15
TOTAL	1	56	94	151

Table 4.19 shows that n=64 (42.4%) of the files that were audited indicated that the musculo-skeletal system was inadequately assessed, obtaining a score of 1. However, unit B shows to be the only unit in which all patients were adequately assessed. The results further show a statistical association of significance between the unit and the assessment of the musculo-skeletal system using the chi square test (p-value <0.05). These results show that Unit B is more likely to assess the musculo-skeletal system while the other units are less likely.

Table 4.19: Musculo-Skeletal System

UNIT	Musculo-skeletal n (row %) Score= 1	Musculo-skeletal (row %) Score= 2	Row totals N
A	9(24.3)	28(75.7%)	37
B	0(0%)	7(100%)	7
C	15(46.9%)	17(53.1%)	32
D	7(87.5)%)	1(12.5%)	8
E	11(68.8%)	5(31.3%)	16
F	11(30.6%)	25(69.4%)	36
G	11(73.3%)	4(26.7%)	15
TOTAL	64	87	151

The assessment of the critically ill patient includes all of the body systems. The systems are independent but more so also interdependent and may impact on each other. A holistic approach is required when assessing a patient in the intensive care unit. Adequate assessment is required when assessing a patient for potential risks to the various systems of the body. This must be done within the first 24 hrs of admission; failing to do so may result in multiple organ failure. The intensive care nurse is responsible to facilitate optimal patient system functioning and stability, as described in paragraph 2.4.1.

Inadequate assessment of the cardiovascular system may develop into more complex complications which may be difficult to manage such as an expansion of an infarction of the myocardium or in the case of trauma a patient may develop a hypovolaemic shock due to a loss of blood. Consequently, a decrease in cardiac output will lead to decrease organ perfusion and subsequently organ failure (Smeltzer & Bare, 2004:661).

A comprehensive assessment of the respiratory status should be performed on all patients who are critically ill and should be performed by a competent nurse, to identify potential respiratory problems, supported by Moore (See section 2.5.1.1). The chances are that many a patient in an intensive care unit will require mechanical ventilation. Knowledge about the respiratory status is therefore imperative.

A full assessment of the neurological system is critical as it is closely related to the level of consciousness of the patient. The patient with an altered LOC is at risk of dysfunction of other body systems, such as the respiratory system (Smeltzer & Bare, 2004; 1851). This could be illustrated with a patient who fell and knocked his head. Without a proper assessment and observation within the first 24 hours the trauma to the head may be more serious and slowly develop into a subdural haematoma and the loss of consciousness.

Inadequate assessment of the gastro-intestinal system may lead to malnourishment of the critically ill patient and this may result in GIT related complications. Consequently, a delay in the outcomes of the patient may result (Section 2.4.1).

An adequate assessment of the functioning of the Genito-urinary system may prevent the occurrence of renal failure that is reflected in urine output, urine test for proteins and blood tests such as urea and creatinine (Smeltzer & Bare, 2004:1323). Inadequate assessment of the endocrine system may lead to the risk of possible infection when an increase in blood glucose is missed. Hyperglycemia suppresses the immune function may increase the morbidity and mortality in patients, as discussed in section 2.4.1.

An undetected weakness in the musculo-skeletal system may lead to neurovascular dysfunction due to weakness of the muscle. Pressure within the muscle compartment leads to nerve anoxia and necrosis. If anoxia continues for longer than 6 hours, permanent paralysis can occur (Smeltzer & Bare, 2004:2013).

4.5.8 Question 26-29: Eyes, mouth, ears and speech

Table 4.20 shows that n=67 (44.4%) of the files that were audited indicated that the eyes were inadequately assessed, obtaining a score of 1. In addition 20 (13.2%) of the files audited no assessment was done. However, unit B shows to be the only unit in which all patients were adequately assessed. The results further show a statistical association of significance between the unit and the assessment of the eyes using the chi square test (p-value <0.05). Inadequate assessment of the eye may lead to impaired vision due to eye infection. The patients independence in self-care as well as rehabilitation could be affected (Smeltzer & Bare, 2004:1747).

Table 4.20: Eyes

UNIT	Eyes n (row %) Score= 0	Eyes n (row %) Score= 1	Eyes (row %) Score= 2	Row totals N
A	7(18.9%)	3(8.1)	27(73%)	37
B	0(0%)	0(0%)	7(100%)	7
C	0(0%)	24(75%)	8(25%)	32
D	0(0%)	6(75%)	2(25%)	8
E	11(68.8%)	4(25%)	1(6.3%)	16
F	0(0%)	19(52.8%)	17(47.2%)	36
G	2(13.3%)	11(73.3%)	2(13.3%)	15
TOTAL	20	67	64	151

Table 4.21 shows that n=64 (42.4%) of the files that were audited indicated that the mouth was inadequately assessed, obtaining a score of 1. However, unit B shows to be the only unit in which all patients were adequately assessed. The results further show a statistical association of significance between the unit and the assessment of the mouth using the chi square test (p-value <0.05). Adequate assessment of the mouth will lead to adequate good nutritional functioning. Poor oral care and infection foci in the mouth is one of the leading causes of respiratory infection and poses a threat to cardiac surgery or any surgical grafts (Smeltzer & Bare, 2004:757)

Table 4.21: Mouth

UNIT	Mouth n (row %) Score= 0	Mouth n (row %) Score= 1	Mouth n (row %) Score= 2	Row totals N
A	7(18.9%)	4(10.8%)	26(70.3%)	37
B	0(0%)	0(0%)	7(100%)	7
C	20(62.5%)	3(9.4%)	9(28.1%)	32
D	1(12.5)	6(75%)	1(12,5%)	8
E	0(0%)	8(50%)	8(50%)	16
F	0(0%)	13(36.1%)	23(63.9%)	36
G	12(80%)	1(6.7%)	2(13.3%)	15
TOTAL	40	35	76	151

Table 4.22 shows that n=64 (42.4%) of the files that were audited indicated that the ears were inadequately assessed, obtaining a score of 1. The results further show a statistical association of significance between the unit and the assessment of the ears using the chi square test (p-value <0.05). Failure to assess the ear for infections may result in a delay of the healing process of other systems, such as a surgical graft, which may be rejected or in cardio-thoracic surgery (Smeltzer & Bare, 2004:1336).

Table 4.22: Ears

UNIT	Ears n (row %) Score= 0	Ears n (row %) Score= 1	Ears n (row %) Score= 2	Row totals N
A	20(54.1%)	0(0%)	17(46%)	37
B	1(14.3%)	0(0%)	6(85.7%)	7
C	17(53.13%)	12(37.5%)	3(9.4%)	32
D	1(12.5%)	4(50%)	3(37.5%)	8
E	11(68.8%)	2(12.5)	3(37.5)	16
F	18(50%)	16(44.4%)	2(5.6%)	36
G	8(53.3%)	4(26.7%)	3(20%)	15
TOTAL	76	38	37	151

Table 4.23 shows that n=33 (21.9%) of the files that were audited indicated that the speech of the patient was inadequately assessed, obtaining a score of 1. The results further show a statistical association of significance between the unit and the assessment of the speech of the patient using the chi square test (p= p-value <0.05). Inadequate assessment of the speech ability may influence the nursing care plan related to the CNS. Speech is closely related to the level of consciousness or damage to the cranial nerves (Smeltzer & Bare, 2004:68).

Table 4.23: Speech

UNIT	Speech n (row %) Score= 0	Speech n (row %) Score= 1	Speech n (row %) Score= 2	Row totals N
A	16(43.2%)	4(10.8%)	17(46%)	37
B	0(0%)	0(0%)	7(100%)	7
C	19(59.4%)	7(21.9%)	6(18.8%)	32
D	0(0%)	4(50%)	4(50%)	8
E	2(12.5%)	9(56.3%)	5(31.3%)	16
F	21(56.3%)	7(19.4%)	8(22.2%)	36
G	13(86.7)	2(13.3%)	0(0%)	15
TOTAL	71	33	47	151

4.5.9 Question 30: Safety measures

Table 4.24 shows that n=45 (29.8%) of the files that were audited indicated that the safety measures were inadequately assessed, obtaining a score of 1.The results further show a statistical association of significance between the unit and the assessment of the safety measures using the chi square test (p-value <0.05). The level of consciousness of critically ill patients is most times disturbed due to their illness. Furthermore, the patient with a loss of sensory perception will affect the ability to maintain safety. Therefore the assessment of the patient's safety is critical in ensuring that additional safety precautions are taken when necessary (Young *et al*., 2003:260).

Table 4.24: Safety measures

UNIT	Safety measures n (row %) Score= 0	Safety measures n (row %) Score= 1	Safety measures n (row %) Score= 2	Row totals N
A	3(8.1%)	4(10.8%)	30(81.1%)	37
B	0(0%)	1(14.2%)	6(85.7%)	7
C	0(0%)	13(40.3%)	19(59.4%)	32
D	4(50%)	2(25%)	2(25%)	8
E	0(0%)	6(37.5%)	10(62.5%)	16
F	0(0%)	12(33.3%)	24(66.7%)	36
G	1(6.7%)	7(46.7%)	7(46.7%)	15
TOTAL	8	45	98	151

4.5.10 Question 31: Laboratory tests

Table 4.25 shows that n=64 (42.4%) of the files that were audited indicated that the musculo-skeletal system was inadequately assessed, obtaining a score of 1. The documentation of laboratory tests and results are important especially within the first 48 hours due to the fluctuation in the condition of most critically sick patients.

Table 4.25: Laboratory tests

UNIT	Lab tests n (row %) Score= 1	Lab tests n (row %) Score= 2	Row totals N
A	20(54%)	17(46%)	37
B	1(14.3%)	6(85.7%)	7
C	16(50%)	16(50%)	32
D	6(75%)	2(25%)	8
E	5(31.3%)	11(68.8%)	16
F	19(52.8%)	17(47.2%)	36
G	8(53.3%)	7(46.7%)	15
TOTAL	75	76	151

4.5.11 Question 32: Consent for tests and procedures

Table 4:26 shows that in n=28 (19%) had no consent for procedures and obtained a score of 0 while only n= 111 (73.5%) of the files audited were adequately assessed obtaining a score of 2. The results further show a statistical association of significance between the unit and consent for tests and procedures using the chi square test (p-value <0.05).

Table 4.26: Consent for tests and procedures

UNIT	Consent n (row %) Score= 0	Consent n (row %) Score= 1	Consent n (row %) Score= 2	Row totals N
A	8(21.6%)	0(0%)	29(78.4%)	37
B	1(14.3%)	0(0%)	6(85.7%)	7
C	6(18.8%)	0(0%)	26(81.3	32
D	1(12.5%)	0(0%)	7(87.5%)	8
E	4(25%)	0(0%)	12(75%)	16
F	5(13.9%)	12(33.3%)	19(52.8%)	36
G	3(20%)	0(0%)	12(80%)	15
TOTAL	28	12	111	151

An intensive care patient is continuously subjected to various types of invasive and life threatening tests and procedures. Consent for these tests should be obtained from the patient and if not possible from the closest relative or medical superintendent. The management of patients without any consent subjects the hospital to litigation (Verschoor, Fick, Jansen & Viljoen, 1997:40-43).

4.5.12 Question 33: Nutritional status

Table 4.27 shows that n=33 (22%) of the files that were audited showed inadequate assessment of the nutritional level, obtaining a score of 1. The results further show a statistical association of significance between the unit and the assessment of the nutritional status of the patient using the chi square test (p-value <0.05). The nutritional status is of critical importance in patients who are critically ill. These patients are in a hypercatabolic state and require additional nutrients to promote anabolism due to high infections, major surgical interventions or trauma (Smeltzer & Bare, 2004:.1001-1002).

Table 4.27: Nutritional status

UNIT	Nutrition n(row %) Score= 1	Nutrition n (row %) Score= 2	Row totals N
A	9 (24.3%)	28(75.7%)	37
B	0(0%)	7(100%)	7
C	4(12.5%)	28(87.5%)	32
D	6(75%)	2(25%)	8
E	4(25%)	12(75%)	16
F	5(13.9%	31(86.1%)	36
G	5(33.3%)	10(66.7%)	15
TOTAL	33	118	151

4.5.13 Question 34: Skin

Table 4:28 shows that n= 115 (76.2%) of the files audited had no consent for procedures and obtained a score of 0 while only n= 111 (73.5%) of the files audited were adequately assessed obtaining a score of 2. The results further show a statistical association of significance between the unit and skin using the chi square test (p-value <0.05). The intensive care patient has a fragile skin due to illness and the majority of patients in the ICU are bedridden patients. Therefore the early detection of skin disease may limit skin damage. The pressure areas of such patients are exposed to continuous pressure or friction that may result in pressure ulcers. (Young *et al*., 2003:440).

Table 4.28: Skin

UNIT	Skincare n(row %) Score= 0	Skin care n(row %) Score= 1	Skin care n (row %) Score= 2	Row totals N
A	5(13.5%)	8 (21.6%)	24(64.9%)	37
B	0(0%)	0(0%)	7(100%)	7
C	4(12.5%)	1(3.13%)	27(84.4%)	32
D	1(12.5%)	3(37.5%)	4(50%)	8
E	0(0%)	1(6.25%)	15(93.8%)	16
F	0(0%)	8(22.2%)	28(77.8%)	36
G	2(13.3%)	3(20%)	10(66.7%)	15
TOTAL	12	24	115	151

4.5.14 Question 35: Elimination pattern

Table 4.29 shows that n=75 (49.7%) of the files that were audited indicated that the elimination pattern was inadequately assessed, obtaining a score of 1, while n=5 (3.3%) of the files obtained a score of 0. The results further show a statistical association of significance between the unit and the assessment of the elimination pattern using the chi square test (p-value <0.05). The units are less likely to assess the elimination pattern.

Inadequate assessment of the elimination pattern of waste products of digestion may result in late detection of constipation. Straining is associated with the valsalva maneuver and increases the intracranial pressure and furthermore may increase, intra-thoracic pressure which impacts negatively on the function of the heart especially affecting patients who are vulnerable (Smeltzer & Bare, 2004:1864).

Table 4.29: Elimination pattern

UNIT	Elimination pattern n (row %) Score= 0	Elimination pattern n (row %) Score= 1	Elimination pattern n (row %) Score= 2	Row totals N
A	0(0%)	13(34.1%)	24 (64.9%)	37
B	1(14.3%)	1(14.3%)	5(71.4%)	7
C	0(0%)	19(59.3%)	13(40.6%)	32
D	0(0%)	8(100%)	0(0%)	8
E	0(0%)	10(62.5%)	6(37.5%)	16
F	4(11.1%)	11(30.6%)	21(58.3%)	36
G	0(0%)	13(86.7%0	2(13.3%0	15
TOTAL	5	75	71	151

4.5.15 Question 36: Mode of arrival

Table 4:30 shows that n= 27(17.9%) of the files audited shows that the mode of arrival was not indicated and obtained a score of 0. Only n= 111 (73.5%) of the files audited shows that the mode of travel was adequately assessed obtaining a score of 2. The results further show a statistical association of significance between the unit and mode of arrival using the chi square test (p-value <0.05). Identifying the mode of arrival helps to guide the status of the patient's condition and the assessment process.

Table 4.30: Mode of arrival

UNIT	Mode of arrival n (row %) Score= 0	Mode of arrival n (row %) Score= 1	Mode of arrival n (row %) Score= 2	Row totals N
A	7(19%)	0(0%)	30(81.1%)	37
B	1(14.29%0	0(0%)	6(85.7%0	7
C	6(18.8%)	0(0%)	26(81.3%)	32
D	3(37.5%)	0(0%)	5(62.5%)	8
E	3(18.8%)	1(6.3%)	12(75%)	16
F	5(13.9%)	12(33.3%)	19(52.8%)	36
G	2(13.3%)	0(0%)	13(86.7%)	15
TOTAL	27	13	111	151

4.5.16 Question 37: Flow sheet

Table 4: 31 shows that the n=22 (14.6%) of the flow sheets audited were found to be inadequate in the intensive care units. The specific and appropriate flow sheet should be utilized by the intensive care nurses in each intensive care unit to document all activities

and interventions of the patients. The absence and insufficient utilization of flow sheets will prevent the multidisciplinary team to detect the trends in patient's status such as observations and fluid balance (Kozier *et al*., 2004: 339).

Table 4.31: Flow sheet

UNIT	Flow sheet n (row %) Score= 1	Flow sheet n (row %) Score= 2	Row totals N
A	6(16.2%)	31(83.9%)	37
B	0(0%)	&(100%)	7
C	4(12.5%)	28(87.5%)	32
D	2(25%0	6(75%)	8
E	2(12.5%)	14(87.5%)	16
F	6(16.7%)	39(83.3%)	36
G	2(13.3%)	13(86.7%)	15
TOTAL	22	129	151

4.6 Section C: Nursing diagnosis documentation (Questions 38-41)

Documentation of nursing diagnosis lays the foundation for the selection of nursing interventions.

4.6.1 Question 38: Nursing diagnosis

Table 4:32 shows that n= 4(2.6%) of the files audited had no indication of a nursing diagnosis and obtained a score of 0 while only n= 60 (39.7%) of the files audited showed adequate diagnosis, obtaining a score of 2. The results further show a statistical association of significance between the unit and nursing diagnosis using the chi square test (p-value <0.05). Inadequate nursing diagnosis will result in a failure to ensure that adequate planning for patient care is done. The patient's needs may not be met with inadequate planning (Young *et al.*, 2003:186).

Table 4.32: Nursing diagnosis

UNIT	Nursing diagnosis n (row %) Score= 0	Nursing diagnosis n (row %) Score= 1	Nursing diagnosis n (row %) Score= 2	Row totals N
A	1(2.75%)	19(51.4%)	17(46%)	37
B	0(0%)	2(28.6%)	5(71.4%)	7
C	0(0%)	23(71.9%)	9(28.1%)	32
D	3(37.5%)	4(50%)	1(12.5%)	8
E	0(0%)	6(37.5%)	10(62.5%)	16
F	0(0%)	22(61.1%)	14(38.9%0	36
G	0(0%)	11.73.3%)	4(26.7%)	15
TOTAL	4	87	60	151

4.6.2 Question 39: Medical diagnosis

Table 4:33 shows that n= 7(14.6%) of the files audited indicated no medical diagnosis and obtained a score of 0, while only n= 119 (78.8%) of the files audited indicated a medical diagnosis obtaining a score of 2. The results further show a statistical association of significance between the unit and medical diagnosis using the chi square test (p-value <0.05). Failure to diagnose and indicate the patient's diagnosis may influence the management of the patient's care (Young *et al.*, 2003:186). This cannot be tolerated in an intensive care unit in which patients who are critically ill are managed.

Table 4.33: Medical diagnosis

UNIT	Medical diagnosis n (row %) Score= 0	Medical diagnosis n (row %) Score= 1	Medical diagnosis n (row %) Score= 2	Row totals N
A	3(8.1%)	5(13.5%)	29(78.4%)	37
B	0(0%)	0(0%)	7(100%)	7
C	0(0%)	4(12.5%)	28(87.5%)	32
D	1(12.5%)	0(0%)	7(87.5%)	8
E	2912.5%)	0(0%)	14(87.5%)	16
F	0(0%)	13(36.1%)	23(63.9%)	36
G	1(6.7%)	3(20%)	11(73.3%)	15
TOTAL	7	25	119	151

4.6.3 Question 40: Potential diagnosis

Table 4:34 shows that n= 4(2.6%) of the files audited had no indication of a potential diagnosis and obtained a score of 0, while only n= 69 (46.7%) of the files audited were adequately diagnosed obtaining a score of 2.The results further show a statistical association of significance between the unit and potential diagnosis using the chi square test (p-value <0.05). Failing to diagnose potential risks of the disease in the first 24 hrs of admission may lead to major organ failure, supported by Toman (See section 2.4.1).

Table 4.34: Potential diagnosis

UNIT	Potential diagnosis n (row %) Score= 0	Potential diagnosis n (row %) Score= 1	Potential diagnosis n (row %) Score= 2	Row totals N
A	1(2.7%)	20(54.1%)	16(43.2%)	37
B	0(0%)	0(0%)	7(100%)	7
C	0(0%)	24(75%)	8(25%)	32
D	3(37.5%)	4(50%)	1(12.5%)	8
E	0(0%)	6(37.5%)	10(62.5%)	16
F	0(0%)	12(33.3%)	24(66.7%)	36
G	0(0%)	12(80%)	3(20%)	15
TOTAL	4	78	69	151

4.6.4 Question 41: Nursing diagnosis according assessment data

Table 4:35 shows that n= 3(17.9%) of the files audited had no indication of a nursing diagnosis and obtained a score of 0 while only n= 73(48.3%), adequately indicated a nursing diagnosis obtaining a score of 2. The results further show a statistical association of significance between the unit and the nursing diagnosis based on the assessment using the chi square test (p-value <0.05).

Table 4.35: Nursing diagnosis according assessment data

UNIT	According assessment data n (row %) Score= 0	According assessment data n (row %) Score= 1	According assessment data n (row %) Score= 2	Row totals N
A	0(0%)	17(46%)	20(54.1%)	37
B	0(0%)	0(0%)	7(100%)	7
C	0(0%)	23(71.9%)	9(28.1%)	32
D	3(37.5%)	5(62.5%)	0(0%)	8
E	0(0%)	9(56.3%)	7(43.8%)	16
F	0(0%)	9(25%)	27(75%)	36
G	0(0%)	12(80%)	3(20%)	15
TOTAL	3	74	73	151

As described in questions 39 and 40, the motivation for an adequate medical and potential diagnosis applies to a nursing diagnosis as well. Intensive care nursing as the name implies, requires adequate nursing diagnosing to enable the nurse to plan intensive nursing care plans for critically ill patients.

4.7 Section D: Planning documentation (Questions 42-48)

Planning documentation indicates the prioritising of the nursing diagnosis and care for which the nurse is accountable for. It involves nursing care planning, short term and long term goal setting.

4.7.1 Question 42: Nursing care plans based assessment data

Table 4:36 shows that n= 3 (17.9%) of the files audited shows that the nursing care plans were not related to assessment data and obtained a score of 0 while only n= 106 (70,2%) of the files showed that nursing care plans based on the assessment data was inadequately designed obtaining a score of 1.

Table 4.36: Nursing care plans based on assessment data

UNIT	Based on assessment data n (row %) Score= 0	Based on assessment data n (row %) Score= 1	Based on assessment data n (row %) Score= 2	Row totals N
A	1(2.7%)	27(78.4%)	7(19%)	37
B	0(0%)	7(100%)	0(0%)	7
C	0(0%)	23(71.88%)	9(28.1%)	32
D	2(25%)	4(50%)	2(25%)	8
E	0(0%)	9(56.3%)	7(43.8%)	16
F	0(0%)	23(63.9%)	13(36.1%)	36
G	0(0%)	11(73.3%)	4(26.8%)	15
TOTAL	3	106	42	151

The importance of care plans in an intensive unit cannot be emphasized enough. In the first 24 hours the patient is still unstable and the condition may fluctuate continuously. Accurate planning based on the potential diagnosis is of critical importance in the unit as described in paragraph 2.5.1.3.

4.7.2 Question 43: Prioritising the nursing problems

Table 4:37 shows that only n= 77 (50.9%) of the files audited showed that prioritizing the nursing problems were done adequately and obtaining a score of 2. The results further show a statistical association of significance between the unit and prioritising the nursing problems using the chi square test (p-value <0.05). It is imperative to prioritise according to the level of urgency with the most critical problems receiving the highest priority (Smeltzer & Bare, 2004:39).

Table 4.37: Prioritising the nursing problems

UNIT	Prioritising the nursing problems n (row %) Score= 0	Prioritising the nursing problems n (row %) Score= 1	Prioritising the nursing problems n (row %) Score= 2	Row totals N
A	0(0%)	29(78.4%)	8(21.6%)	37
B	0(0%)	4(57.1%)	3(42.9%)	7
C	0(0%)	8(25%)	24(75%)	32
D	0(0%)	4(50%)	2(25%)	8
E	0(0%)	7(43.8%)	9(56.3%)	16
F	0(0%)	12(33.3%)	24(66.7%)	36
G	0(0%)	8(53.3%)	7(46.7%)	15
TOTAL	2	72	77	151

4.7.3 Question 44: Short-term goals

Table 4:38 shows that n= 85(56.3%) of the files audited showed that the short-term goals set for patient care were inadequate, and obtained a score of 1. The results further show a statistical association of significance between the unit and short term goals using the chi square test (p-value <0.05).

Due to the fluctuation of the patient's condition in a critical care unit, setting short- term goals is important. According to Kozier *et al*. (2004:301) short-term goals are set to determine the immediate action.

Table 4.38: Short term goals

UNIT	Short term goals n (row %) Score= 0	Short term goals n (row %) Score= 1	Short term goals n (row %) Score= 2	Row totals N
A	1(2.7%)	24(64.9%)	12(32.4%)	37
B	0(0%)	6(85.7%)	1(14.3%)	7
C	0(0%)	16(50%)	16(50%)	32
D	2(25%)	6(75%)	0(00%)	8
E	0(0%)	8(50%)	8(50%)	16
F	0(0%)	19(52.8%)	17(47.2%)	36
G	0(0%)	6(40%)	9(60%)	15
TOTAL	3	85	63	151

4.7.4 Question 45: Long term goals

Table 4:39 shows that only n= 15(9.9%) of the files audited indicated long-term patient goals and obtained a score of 2, while the majority 99 (65.6%) obtaining a score of 1. The results

further show a statistical association of significance between the unit and the setting of long-term goals using the chi square test (p-value <0.05). The rehabilitation of the critically ill patient is of importance as the patient does not recover fully in the unit, neither in the ward. It is therefore imperative that long-term goals are set for the discharge and rehabilitation to ensure the quality of life of the patient. Long-term goals are required to guide the discharge planning and rehabilitation of the patient (Kozier *et al*., 2004:301).

Table 4.39: Long-term goals

UNIT	Long term goal n (row %) Score= 0	Long term goal n (row %) Score= 1	Long term goal n (row %) Score= 2	Row totals N
A	1(2.7%)	36(97.3%)	0(0%)	37
B	0(0%)	7(100%)	0(0%)	7
C	17(53.1%)	15(46.9%)	0(0%)	32
D	3(37.5%)	5(62.5%)	0(0%)	8
E	7(43.8%)	8(50%)	1(6.3%)	16
F	0(0%)	22(61.1%)	14(38.9%)	36
G	9(60%)	6(40%)	0(0%)	15
TOTAL	37	99	15	151

4.7.5 Question 46: Identified expected outcomes

Table 4:40 shows that only n= 2 (1.3%) of the files audited have indicated the patient's outcomes adequately obtaining a score of 2. The majority of files indicated no patient outcomes n=74 (49%) obtaining a score of 0 or inadequately 75 (49.6%) obtaining a score of 1. The results further show a statistical association of significance between the unit and identified expected outcomes using the chi square test (p-value <0.05). The outcomes for patient treatment should be set to give direction for planning of nursing interventions and to set criteria for evaluating the patients progress (Kozier *et al*., 2004: 301).

Table 4.40: Identified expected outcome

UNIT	Identified expected outcomes n (row %) Score= 0	Identified expected outcomes n (row %) Score= 1	Identified expected outcomes n (row %) Score= 2	Row totals N
A	6(16.2%)	30(81.1%)	1(2.7%)	37
B	0(0%)	6(85.7%)	1(14.3%)	7
C	19(59.4%)	13(40.6%)	0(0%)	32
D	4(50%)	4(50%)	0(0%)	8
E	12(75%)	4(25%)	0(0%)	16
F	22(61.1%)	14(38.9%)	0(0%)	36
G	11(73.1%)	4(26.7%)	0(0%)	15
TOTAL	74	75	2	151

4.7.6 Question 47: Nursing Interventions for each nursing diagnosis

Table 4:41 shows that only n= 83 (55%) of the files audited have indicated nursing interventions for each nursing diagnosis adequately obtaining a score of 2, while n=55 (36.4%) were inadequately done obtaining a score of 1. The results further show a statistical association of significance between the unit and interventions for each diagnosis using the chi square test (p-value <0.05). In an intensive care unit interventions for every diagnosis made is critical. The condition of these patients fluctuates continuously and requires interventions as the condition changes. According to Kozier *et a*l. (2004:305) specific nursing interventions should focus on the elimination or reducing the aetiology of the nursing diagnosis and treat the signs and symptoms.

Table 4.41: Nursing Interventions for each nursing diagnosis

UNIT	Nursing Interventions for each nursing diagnosis n (row %) Score= 0	Nursing Interventions for each nursing diagnosis n (row %) Score= 1	Nursing Interventions for each nursing diagnosis n (row %) Score= 2	Row totals N
A	1(2.7%)	15(40.5%)	21(56.8%)	37
B	0(0%)	2(28.6%)	5(71.4%)	7
C	4(12.5%)	7(21.9%)	21(65.6%)	32
D	3(37.5%)	5(62.5%)	0(0%)	8
E	0(0%)	13(81.3%)	3(18.8%)	16
F	3(8.3%)	8(22.2%)	25(69.4%)	36
G	2(13.3%)	5(33.3%)	8(53.3%)	15
TOTAL	13(8.6%)	55(36.4%)	83(55%)	151

4.7.7 Question 48: Ward rounds

Table 4:42 shows that only n= 111(73.5%) of the files audited showed that ward rounds were adequately planned obtaining a score of 2. Ward rounds with the multidisciplinary team and nurses are crucial in the intensive care unit.

Table 4.42: Ward rounds

UNIT	Ward rounds n (row %) Score= 0	Ward rounds n (row %) Score= 1	Ward rounds n (row %) Score= 2	Row totals N
A	2(5.4%)	8(21.6%)	27(73%)	37
B	0(0%)	1(14.3%)	6(85.7%)	7
C	0(0%)	6(18.8%)	26(81.3%)	32
D	0(0%)	6(75%)	2(25%)	8
E	0(0%)	4(25%)	12(75%)	16
F	0(0%)	10(27.8%)	26(72.2%)	36
G	0(0%)	3(20%)	12(80%)	15
TOTAL	2	38	111	151

Ward rounds enable nurses to obtain immediate feedback when questions are raised about a patient's care. Furthermore this will create the opportunity to discuss the care plan of the patient and encourage the patient to participate in discussions and decisions (White, 2003:158).

4.8 Section E: Implementation documentation (Questions 49-51)

Documentation of the implementation indicates the interventions taken to execute the nursing care plan to achieve the desired outcome.

4.8.1 Question 49: Execution of the nursing care plan

Table 4:43 shows that only n= 77 (51%) of the files audited have indicated the execution of the nursing care plan adequately obtaining a score of 2, while n=74 (49%) was inadequately done obtaining a score of 1. The results further show a statistical association of significance between the unit and execution of the nursing care plan using the chi square test (p-value <0.05).

Table 4.43: Execution of the nursing care plan

UNIT	Execution of the nursing care plan n (row %) Score= 1	Execution of the nursing care plan n (row %) Score= 2	Row totals N
A	18(48.7%)	19(51.4%)	37
B	2(28.57%)	5(71.4%)	7
C	12(37.5%)	20(62.5%)	32
D	6(75%)	2(25%)	8
E	11(68.8%)	5(31.2%)	16
F	14(38.9%)	22(61.1%)	36
G	11(73.3%)	4(26.7%)	15
TOTAL	74	77	151

Patients in the intensive care unit require intense observation continuously during the implementation of nursing care plans to improve the prognosis and maintain vital organ function. Delay in implementation and treatment result in ineffective nursing care of patients (See paragraph 2.4.1). The South African Nursing Council 's regulation relating to the Scope of Practice of persons who are registered or enrolled under the Nursing Act 50 of 1978 holds registered nurses accountable for the implementation of the nursing care plan (See section 2.2.5 and 2.3.3).

4.8.2 Question 50: Doctor's prescription

Table 4:44 shows that only n= 139 (92.1%) of the files audited were adequately implemented obtaining a score of 2. The doctor is responsible for directing medical treatment while nurses are obliged to follow doctor's orders unless they believe the orders are in error and would be detrimental to patient. According to the SANC R387, a nurse carrying out an inaccurate order may be legally responsible for any harm suffered by the patient. The responsibility of the nurse is to administer the medication safely and to observe the response of the patient thereafter (Young *et al.,* 2003:277).

Table 4.44: Doctor's prescription

UNIT	Doctor's prescription n (row %) Score= 0	Doctor's prescription n (row %) Score= 1	Doctor's prescription n (row %) Score= 2	Row totals N
A	0(0%)	2(5.4%)	35(94.6%)	37
B	0(0%)	0(0%)	7(100%)	7
C	0(0%)	2(6.3%)	30(93.8%)	32
D	0(0%)	1(12.5%)	7(87.5%)	8
E	1 (6.3%)	2(12.5%)	13(81.3%)	16
F	0(0%)	3(8.3%)	33(91.7%)	36
G	0(0%)	1(6.7%)	14(93.3%)	15
TOTAL	1	11	139	151

4.8.3 Question 51: Reporting

Table 4:45 shows that only n= 113 (74.8%) of the files audited have indicated reporting adequately, obtained a score of 2, while n=37 (24.5%) were inadequately done obtaining a score of 1. The results further show a statistical association of significance between the unit and reporting using the chi square test (p-value <0.05). Negligent in monitoring cases, arise from nurse's failure to perform an assessment or notify the treating physician of changes and abnormal findings. A hospital has vicarious liability for the negligence of its nurses, which allows a patient to bring a lawsuit against either the nurse individually, or the hospital as the employer, or both supported by Giordano (See section 2.2.5). The purpose of reporting is to communicate specific information for improving quality of care (Kozier *et al*., 2004:348).

Table 4.45: Reporting

UNIT	Reporting n (row %) Score= 0	Reporting n (row %) Score= 1	Reporting n (row %) Score= 2	Row totals N
A	0(0%)	10(27%)	27(73%)	37
B	0(0%)	0(0%)	7(100%)	7
C	0(0%)	7(21.9%)	25(78.1%)	32
D	1(12.5%)	6(75%)	1(12.5%)	8
E	0(0%)	2(12.5%)	14(88%)	16
F	0(0%)	8(22.2%)	28(77.8%)	36
G	0(0%)	4(26.7%)	11(77.3%)	15
TOTAL	1	37	113	151

4.9 Section F: Evaluation documentation (Questions 52-57)

The evidence of evaluation of documentation reflects the assessment of progress in achieving outcomes and continuity of care. The nursing outcomes should be evaluated separately and revising of the care plan should follow.

4.9.1 Question 52: Evaluation of assessment data

Table 4:46 shows that only n= 92 (61%) of the files audited have indicated evaluation of assessment data adequately obtaining a score of 2, while n=59 (39.1%) were inadequately done obtaining a score of 1. The results further show a statistical association of significance between the unit and evaluation of assessment data using the chi square test (p-value <0.05). It is imperative that the nurse in the intensive care unit should evaluate the assessment data .New data may indicate the need for a new nursing diagnosis, new goals and new nursing interventions to facilitate quality nursing care (Kozier , G., Berman, A. & Snyder*.,* 2004:321).

Table 4.46: Evaluation of assessment data

UNIT	Evaluation of assessment data n (row %) Score= 1	Evaluation of assessment data n (row %) Score= 2	Row totals N
A	17(46%)	20(54.1%)	37
B	0(0%)	7(100%)	7
C	12(37.5%)	20(62.5%)	32
D	7(87.5%)	1(12.5%)	8
E	7(43.8%)	9(56.3%)	16
F	9(25%)	27(75%)	36
G	7(46.7%)	8(53.3%)	15
TOTAL	59	92	151

4.9.2 Question 53: Evaluation of nursing diagnosis

Table 4:47 shows that only n= 57 (37.7%) of the files audited have indicated evaluation of the nursing diagnosis adequately obtaining a score of 2, while n=90 (60%) were inadequately done obtaining a score of 1. The results further show a statistical association of significance between the unit and evaluation of nursing diagnosis using the chi square test (p-value.<0.05). The nurse in the intensive care unit should evaluate the nursing diagnosis with each intervention to analyse whether the problems were identified correctly and whether the nursing diagnosis is related to the assessed data. New nursing diagnosis may be required that will reflect the most recent patient data (Kozier *et al*., 2004:321).

Table 4.47: Evaluation of nursing diagnosis

UNIT	Evaluation of nursing diagnosis n (row %) Score= 0	Evaluation of nursing diagnosis n (row %) Score= 1	Evaluation of nursing diagnosis n (row %) Score= 2	Row totals N
A	1(2.7%)	27(73%)	9(24.3%)	37
B	0(0%)	0(0%)	7(100%)	7
C	0(0%)	27(84.4%)	5(15.6%)	32
D	3(37.5%)	5(62.5%)	0(0%)	8
E	0(0%)	7(43.8%)	9(56.3%)	16
F	0(0%)	10(27.8%)	26(72.2%)	36
G	0(0%)	14(93.3%)	1(6.7%)	15
TOTAL	4	90	57	151

4.9.3 Question 54: Patients goals met

Table 4:48 shows that n= 99 (65.6%) of the files audited showed no indication of evaluation as to whether any of the patient's goals were met and obtained a score of 0, while only n= 52 (34.4%) audited were evaluated adequately obtaining a score of 2. The nurse in the intensive care units needs to evaluate the goals regularly to identify unrealistic and unattainable goals. This involves decisions about continuing, modifying and terminating nursing care for each problem (Kozier *et al*., 2004:321).

Table 4.48: Patients goals met

UNIT	Patients goals met n (row %) Score= 1	Patients goals met n (row %) Score= 2	Row totals N
A	24(64.9%)	13(35.1%)	37
B	2(28.6%)	5(71.4%)	7
C	23(71.9%)	9(28.1%)	32
D	7(87.5%)	1(12.5%)	8
E	12(75%)	4(25%)	16
F	19(52.9%)	17(47.2%)	36
G	12(80%)	3(20%)	15
TOTAL	99	52	151

4.9.4 Question 55: Patients' condition before any tests and procedures

Table 4:49 shows that only n= 81 (53.6%) of the files audited have indicated evaluation of patients' condition prior to any tests and procedures, adequately obtaining a score of 2, while n=70 (46.4%) was inadequately done obtaining a score of 1. The results further show a

statistical association of significance between the unit and evaluation of patients' condition prior to any tests and procedures using the chi square test (p-value <0.05). It is crucial for the nurse in intensive care to evaluate the patient's condition before any tests and procedures, paying particularly attention to systems that could affect the patients' responses to anaesthesia or surgery. Respiratory and cardiovascular assessments provide baseline data for evaluating the patients post operative status and may alert care providers to a problem such as respiratory infection or irregular pulse rate (Kozier *et al*., 2004: 899).

Table 4.49: Patients' condition before any tests and procedures

UNIT	Patients' condition before any tests and procedures n (row %) Score= 1	Patients' condition before any tests and procedures n (row %) Score= 2	Row totals N
A	21(56.8%)	16(43.2%)	37
B	0(0%)	7(100%)	7
C	15(46.9%)	17(53.1%)	32
D	6(75%)	2(25%)	8
E	8(50%)	8(50%)	16
F	10(27.8%)	26(72.2%)	36
G	10(66.7%)	5(33.3%)	15
TOTAL	70	81	151

4.9.5 Question 56: The patients' condition after tests and procedures

Table 4:50 shows that in n=90 (59.6%) of the files audited indicated that the evaluation of the patients' condition after tests and procedures were done inadequately, and obtained a score of 1 while only n= 61 (44.4%) showed adequate evaluation obtaining a score of 2. The administration of medication results in decision-making in administrating the drug and the evaluation of the patient's response. Effective decision-making has the potential to facilitate improvements in health care (See section 2.5.1.5 and 2.3.5). Continuous evaluation of pain is beneficial for the patient rather than at the end of a shift. An assessment at regular short intervals or as often as the patient's condition requires, include LOC vital signs, skin colour and temperature, comfort, fluid balance, wound dressings, drains and tubes.

Table 4.50: The patients' condition after tests and procedures

UNIT	The patients' condition after tests and procedures n (row %) Score= 1	The patients' condition after tests and procedures n (row %) Score= 2	Row totals N
A	22(59.5%)	15(40.5%)	37
B	4(57.1%)	3(42.9%)	7
C	19(59.4%)	13(40.6%)	32
D	5(62.5%)	3(37.5%)	8
E	9(56.3%)	7(43.8%)	16
F	20 (55.6%)	16(44.4%)	36
G	11(73.3%)	4(26.7%)	15
TOTAL	90	61	151

4.9.6 Question 57: Modification to the care plan

Table 4:41 shows that only n= 25 (16.5%) of the files audited have indicated modification to the plan of care adequately obtaining a score of 2, while n=95 (62.9%) were inadequately done obtaining a score of 1. The results further show a statistical association of significance between the unit and modification to the plan of care using the chi square test (p-value <0.05). Failure to modify the nursing care plan may lead to unrealistic outcomes, inaccurate nursing diagnosis and ineffective nursing actions. The status of patients admitted to an ICU should be revised continuously to identify patients who may no longer require ICU care. Regular application of evaluation ensures that a client care plan is current and appropriate. It should be noted that the ICU patient is volatile and their condition may suddenly change adversely. The unexpected can never be disregarded in patient care and nurses should be alert to it (Young *et al*., 2003:195).

Table 4.51: Modification to the care plan

UNIT	Modification to the care plan n (row %) Score= 0	Modification to the care plan n (row %) Score= 1	Modification to the care plan n (row %) Score= 2	Row totals N
A	6(16.2%)	23(62.1%)	8(21.6%)	37
B	1(14.3%)	5(71.4%)	1(14.3%)	7
C	4(12.5%)	19(59.4%)	9(28.1%)	32
D	4(50%)	3(37.5%)	1(12.5%)	8
E	0(0%)	13(81.3%)	3(18.8%)	16
F	14(38.9%)	21(58.3%)	1(2.78%)	36
G	2(13.3%)	11(73.3%)	2(13.3%)	15
TOTAL	31	95	25	151

4.10 Discussion

The objectives set for this study were to determine whether nursing documentation in the ICU's is adequately done during the first 48 hours after admission, when the continuity of care is of the essence.

4.10.1 Objective 1:To determine whether the documentation of the assessment of the patients are adequately done in the ICU

Section B of the audit instrument refers to the assessment documentation of patients in the intensive care unit. The results show that the documentation of assessment are not adequately done in the intensive care units of academic hospitals, with a total score of only 62.6% The lowest score, recognizable signatures, show that only 2% of the files were adequately documented and the highest score on date indication 99.3%. The critical criteria of assessment in the intensive care units are the assessment of the systems. The respiratory system shows 92% and is more likely to be assessed in the intensive care unit, whereas the GIT system assessment is neglected in the intensive care unit. It can therefore be concluded that the patients admitted to an ICU are inadequately assessed during the first 48 hours of admission (See Table 4.51).

Table 4.52: Assessment criteria score

Question : Criteria	Adequate Score
Question 8: Identification of nursing documentation	84.8%
Questions 9: Date	99.3%
Questions 10: Time	90.1%
Questions 11: Signature	2%
Question 12 : Medical	45.7%
Question13: Surgical history	39%
Question 14: Current medication	97.3%
Question 15: Allergies	39%
Question 16: Socio-economic status	53.6%
Question 17: Subjective	89.4%
Question 18: Objective data	84.1%
Questions 19: Cardiovascular	80.8%
Question 20: Respiratory	92%,
Question 21: Neurology	59%,
Question 22: GIT	54.3%,
Question 23: GU	59%,
Question 24: Endocrine	62%
Question 25: Musculo-skeletal system	57.6%.
Questions 26 : Eyes	42.4%,
Questions 27: Mouth	50.3%,
Questions 28: Ears only	24.5%
Questions 29: Speech	31.1%.
Question 30: Safety measures	65%
Question 31: Laboratory tests	42.4%
Question 32: Consent for tests and procedures	73.5%
Question 33: Nutritional status	78.1%
Question 34: Skin	76.1%
Question 35: Elimination pattern	47%
Question 36: Mode of arrival	73.5
Question 37: Flow sheet	85.4%
Total score of adequate assessment documentation	62.6%

4.10.2 Objective 2: To determine whether the documentation of the nursing diagnosis is based on the assessment of the patients in the ICU

Section C of the audit instrument refers to the nursing diagnosis documentation of patients in the intensive care unit. The results show that the documentation of the nursing diagnosis is not adequately done in the intensive care units of the academic hospitals with a total score of

only 53.1%. The medical diagnosis is more likely to be documented in the nursing documentation than the nursing diagnosis 39.7% which is also the lowest score in the audit result.

It can therefore be concluded that the patients admitted to an ICU are inadequately diagnosed during the first 48 hours of admission (See Table 4.52).

Table 4.53: Nursing diagnosis criteria score

Question : Criteria	Adequate Nursing diagnosis score
Question 38: Nursing diagnosis	39.7%
Question 39: Medical diagnosis	78.8%
Question 40: Potential diagnosis	45.7%
Question 41: Nursing diagnosis according assessment data	48.3%
Total score of adequate nursing diagnosis Documentation	51.3%

4.10.3 Objective 3: To determine whether the documentation of the nursing care plan is based on the patient diagnosis in the ICU

Section D of the audit instrument refers to the nursing care plan documentation of patients in the intensive care unit. The results show that the documentation of the nursing care plans is not adequately done in the intensive care units of the academic hospitals with a total score of 37.1%. Nurses in the intensive care unit pay little attention to long-term goals; the result shows only 10%, and identification of expected outcome only 1.3% which influence the rehabilitation care. In planning the nursing care in the ICU, the ward rounds 73.5% plays a significant role.

It can therefore be concluded that the nursing care plans of patients admitted to an ICU are inadequately designed during the first 48 hours of admission (See Table 4.53).

Table 4.54: Planning criteria score

Question : Criteria	Adequate planning documentation
Question 42: Nursing care plans related to assessment data	27.8%
Question 43: Prioritizing the nursing problems	51%
Question 44: Short-term goals	41.7%
Question 45: Long term goal	10%
Question 46: Identified expected outcome	1.3%
Question 47: Nursing Interventions for each nursing Diagnosis	55%
Question 48: Ward rounds	73.5%
Total mean score of adequate nursing planning Documentation	37.1%.

4.10.4 Objective 4: To determine whether documentation of the implementation of the nursing care in the ICU was done according to the care plans

Section E of the audit instrument refers to the implementation documentation of the nursing care plan in the intensive care unit. The results show that the documentation of implementation of the nursing care plan is not adequately done in the intensive care units of the academic hospital with a total score of 72.6%. The implementation of a doctor's prescription is a priority in the ICU as well as the execution of the nursing care plan (51%).

It can therefore be concluded that the care plans designed for patients admitted to an ICU are inadequately implemented within the first 48 hours of admission (See Table 4.54).

Table 4.55: Implementation criteria score

Question : Criteria	Adequate implementation documentation
Question 49: Execution of the nursing care plan	51%
Question 50: Doctor's prescription	92%
Question 51: Reporting	75%
Total score of adequate implementation	72.6%

4.10.5 Objective 5: To determine whether the documentation shows evidence of continuous evaluation of the nursing care plan

Section F of the audit instrument refers to the evaluation documentation of patients in the intensive care unit. The results show that the documentation shows inadequate evaluation of the nursing care plan in the intensive care units of the academic hospital with a total score of only 40.5%. The major problem lies with the modification or adaptation of the nursing care plan (16.5%) and documentation on whether patient goals have been met (34.4%).

It can therefore be concluded that the continuous evaluation of the nursing care plan of patients admitted to an ICU are inadequately done during the first 48 hours of admission (See Table 4.5).

Table 4.56: Evaluation criteria score

Question : Criteria	Adequate implementation documentation
Question 52: Evaluation of assessment data	61%
Question 53: Evaluation of nursing diagnosis	37.7%
Question 54: Patients goals met	34.4%
Question 55: Patients' condition before any tests and procedures	53.6%
Question 56: The patients' condition after tests and procedures	40.3%
Question 57: Modification to the plan of care	16.5%
Total score of adequate implementation	40.5%

4.11 Conclusion

Figure 4.1 (p.103) shows the total mean scores of each unit, these scores obtained by each unit are unacceptable for an intensive care unit as described in paragraph 2.4.1 essential interventions, interpretations of results and accurate documentation is required for the continuity of care. All units received a score less than 95% which is the acceptable score set for this study. Only unit D got a score close to 95%.

Furthermore in this chapter the researcher focused on the analysis and interpretation of data gathered using the measurement instrument. The data collected, verifies the conclusions reached. The link between the analysis and the findings is logical, justified, accurate and clear. The method of data analysis was consistent with the purpose of the study. The result of the research question "Does the retrospective analysis of nursing documentation in the intensive care units of an academic hospital in the Western Cape reflect the adequate use of the nursing process within first 48 hours of admission?" has been answered namely that scientific evidence show that the nursing process is not adequately utilized as reflected in the documentation.

Poor documentation threatens the safety of patients and this demands urgent improvement. The delay of essential and specific care to the patient will result in failure to provide continuity of care given to the patient during their stay in the intensive care unit .The delivering of seamless service of continuance of clinical care is crucial in the intensive care units with proper documentation of implementation and reporting. Inadequate documentation of implementation in the intensive care unit gives rise to lack of continuity of care and therefore impede patient safety by increasing the risk of errors (See section 2.8).

In the following chapter, the researcher recommendations based on the scientific evidence of the research study with regard to nursing documentation in the intensive care unit are described.

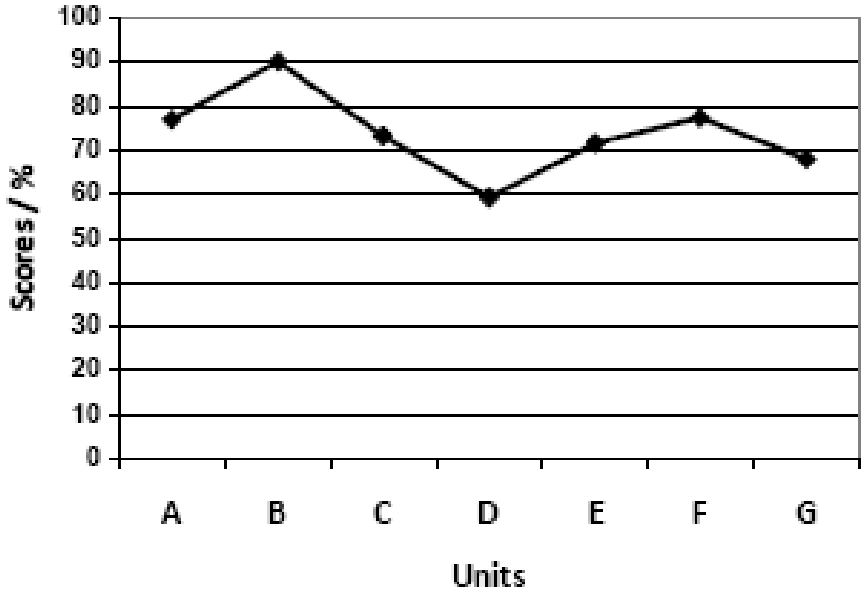

Figure 4.1: Total mean scores of each unit.

CHAPTER 5: RECOMMENDATIONS

5.1 Introduction

In chapter 4 the analysis and interpretation of the data, the objectives as set for the study linked to the results obtained were discussed. In this chapter the various recommendations are made based on the scientific evidence obtained from the study. These recommendations may if implemented, change nursing practice, influence nursing education and promote further research.

5.2 Recommendations

The following recommendations are made based on the scientific evidence obtained from the research study and can be applied to the following areas:

5.2.1 Nursing practice

Inadequate documentation is a violation of the law of nursing practice. To improve the status of nursing documentation is not a once off, quick- fix solution, but a process. Accountable nursing documentation should be a life style for a nurse. Therefore nurses in the ICU should take ownership of the nursing process and be accountable when inadequate documentation is present. An increase awareness of the responsibility should be maintained when documenting care. Nurses need to organise their nursing activities to accommodate adequate nursing documentation. The SANC developed a practice framework for South African Nursing. This framework consists of the scope of practice, standards of nursing practice and a competency framework for nursing. Furthermore it forms the basis for the development of a Charter for nursing practice that includes regulations, rules and ethical codes (Muller, 2009:33).

The nurses need to be knowledgeable with the scope of practice and the foundation of the nursing profession.

The nurses have to have the knowledge, skill and attitude about nursing documentation to make it part of their professional practice as a nurse. The hospital management has to buy-in on the status of nursing documentation as stated by Giordano (2003:105) “A hospital has a duty to the patient to ensure competency of its nursing staff”. The hospital management team should facilitate strategies to assess the quality of service delivery through continuous informal and formal quality assessment by supervisors. This should include unit management quality review, auditing of records, documentation analysis which should be aligned with the

standard that was set, clinical auditing, adverse event monitoring, patient satisfaction survey and stakeholder satisfaction survey (Muller, Bezuidenhout, Jooste, 2006:506).

The researcher agrees with Giordano (2003:105) that each nurse in the ICU should be assigned only one patient because of the need for close monitoring and in order to give nurses the ability to respond immediately to any problems. Inadequate nursing documentation may be as a result of shortage of staff where the situation demands that the nurse focus more on applying patient care and neglect to document the care given.

5.2.2 Legislation

The patients records are a legal document therefore in a case of a lawsuit, the records serve as the description of exactly what happened to a patient. Nurses are responsible for the care the patient receives and can be held liable if appropriate interventions are not implemented in a timely manner when information is available. The nurses needs to know exactly what is required of them for adequate legal documentation (White, 2003:80)

Nurses are required by law that they shall provide patient care in a manner that will protect the patient's physical and emotional wellbeing. Therefore to have a duty to take care and always practice their profession within the constraints of the law of the country and the ethical code of their profession (Searle, 2005: 212). The nurse in the intensive care unit must understand the concepts of responsibility and accountability (See section 2.3.3 and 2.3.4). Negligence in respect of patient care, whether deliberate or not, renders the nurse liable to professional misconduct. Regulation 387 as promulgated by the Nursing Act 50 of 1978 specifies that failing to keep clear and accurate documentation of all activities carried out and observations made while caring for the patient subjects the nurse to disciplinary action. This includes the deliberate falsification of documentation and charts. (Young *et al*., 2003:56)

The nursing personnel need to familiarise themselves and keep up to date with the legal requirements of nursing documentation through regular educational sessions of legislation. Furthermore nurses should be aware of how their actions have an impact on patient care giving rise to possible litigation.

The nurse is expected to report any significant changes on the condition of the patient even when there are no specific prescriptions. When specific observations are prescribed and the nurses fail to report and document their findings it is regarded as negligence (Verschoor *et al*., 2005: 45).

5.2.3 Continuous quality improvement programme

In this study the researcher found that the nursing documentation in all aspects of the nursing process was inadequately done as described in chapter 4. The nursing documentation within the nursing process serves as the backbone of nursing care therefore the care given to patients requires adequate nursing documentation. The quality of care to the patients in the intensive care unit is seriously compromised by inadequate documentation (See section 2.2).

The researcher recommends that a quality improvement program be introduced and this should affiliate teams to the project of improving nursing documentation such as performance improvement plans on nursing documentation. Nurses should be committed and be encouraged to participate in these programs which may ultimately have a snow ball effect within the organisation, nationally and globally.

The purpose for selecting and implementing a quality improvement programme is to improve the quality of health care service delivery in the organisation, to reduce the risks involved in health care service delivery and to positively have an impact on the health care needs of the country. The programme should include development of standards, monitoring and evaluation of performance against these standards and subsequently remedial action. The scope of the standards will focus on policies, procedures, clinical guidelines, standardised patient care, performance indicators and clinical indicators (Muller *et al*., 2006: 492).

5.2.4 Continuity of care

Quality service delivery in health care is associated with continuity of care where patient care is coordinated among practitioners, organisations and time (Muller et al., 2006: 492). The continuity of care in the intensive care unit is most important when the nurses change shifts. Here the nurses have to provide sufficient information on documentation to facilitate continuity of the nursing care which was planned (See section 2.7). Nurses need to be aware that inadequate nursing documentation leads to delay in the continuity of patient care. Medical legal incidences related to documentation should be part of discussion group for in-service training.

5.2.5 Patient safety

The nurses in the intensive care unit need not only to be committed but is liable in providing patient safety through adequate nursing documentation.

At a patient safety conference in 2005 it was emphasised that failure to diagnose, incorrect diagnosis, failure to utilise or act on a diagnostic test and failure to provide follow-up care, are health care errors that adversely influence patient safety (Muller *et al*., 2006: 457).

The risks may be reduced by educating the staff on the consequences of poor documentation. The risk management team needs to commit to the improvement of nursing documentation in practice through facilitation and coordination of activities that addresses inadequate nursing documentation.

5.2.6 Basic sciences

The knowledge and understanding of the basic sciences forms the foundation of nursing care in especially the ICU. Regular updates, in-service training and workshops on the normal physiology, pathophysiology of various diseases, anatomy, microbiology and chemical pathology are required. Furthermore knowledge and insight into the interaction of all body systems is essential to enable the registered nurses working in ICU to obtain the required knowledge, insight and understanding of how the nursing diagnoses or problems are formulated based on the data obtained in the assessment phase (See sections 2.4 and 2.5.1.1).

By having this knowledge and understanding, the formulation of a scientific nursing care plan, implementation and evaluation thereof will result. Without the essential knowledge of the basic sciences the nurse will continuously fail in delivering effective and efficient care to patients in an ICU. This could be illustrated by the critical importance of having knowledge on the basic blood gasses and electrolytes, analysing and interpreting of an ECG, haemodynamic monitoring or how the intra- cranial pressure is increased by the use of positive end expiratory pressure (PEEP) a treatment for the respiratory system.

5.2.7 Nursing process

The implementation of the nursing process needs to be stressed in the intensive care unit. The nursing practice is dependent upon the nursing process to coordinate the interaction between the patient's behavior and the actions of the nurse to benefit the patient (See section 2.5).

5.2.7.1 Assessment

Nurses working in the intensive care units do not apply the aspects of assessment adequately as shown in the study. To maintain adequate assessment of patients in the ICU, nurses working in this environment needs to implement a holistic approach. Inadequate

assessment of patients has a ripple effect on the subsequent phases of the nursing process. This is illustrated as follows, the needs of the patients are not adequately assessed which leads to inadequate diagnosing, inadequate planning, implementation and evaluation which has been shown in the study. Nurses need to make sure that the patients physical, psychological, emotional aspects are addressed in the assessment phase (See section 2.5.1.1. A check list can be utilised to prevent overseeing of any critical data. Therefore the assessment of patients needs to be supported by proper assessment resources such as tools and charts.

5.2.7.2 Nursing diagnosis

To formulate a nursing diagnosis that is based on the assessment data of the patient, the ICU nurses needs to analyse the assessment data critically (See section 2.5.1.2).

The researcher identified that the nursing diagnosis was not specific to individual cases but rather a general approach in the units consequently inadequate nursing diagnosis resulted. The nursing diagnosis that the patient received on admission remains unchanged and no additional diagnosis was made. The question arises about the competency of ICU nurses in constructing nursing diagnosis. The nursing unit manager may make use of case study discussion to empower nurses to make concise nursing diagnosis. Scenarios on how a patient came in with one diagnosis but have several associated problems may be very useful in making the wide nature of nursing diagnosis clear. These experiences lay a foundation for nurses to always exceed the standard.

5.2.7.3 Planning

To develop nursing care that address the problems associated with the nursing diagnosis of the patient, ICU nurses needs to establish problem lists whereby diagnosis could be identified. When the ICU nurses fail to create a nursing diagnosis, planning intervention for that problem ceases (See sub section 2.5.1.3). The study shows that nursing care plans are inadequate in the intensive care units. The competency of ICU nurses in developing care plans is questioned and could be addressed by a needs analysis and educational strategies. Strategies to support nurses in developing effective nursing care plans could be implemented such as involving patients and family members in the planning of care. Management and colleague support and feedback would be valuable.

5.2.7.4 Implementation

Implementation of the care plan should be written down and available to all staff in order to ensure continuity of care. The elements of the patients care plan should form the basis of the

flow sheet and daily reporting of patient progress. Adequate communication through the nursing documentation will improve feedback and continuity of care (Young *et al*., 2003; 194). Nurses are responsible for the care the patient receives and can be held liable if appropriate interventions are not implemented in a timely manner when information is available. If the doctor does not respond in a way that indicates an understanding of the urgency of the information, the nurse must document the doctor's response and notify the supervisor of the situation (White, 2003:80). By doing this the nurse act in the best interest of the patient and uphold her responsibility towards the patient.

5.2.7.5 Evaluation

All members of the multi-disciplinary team should be part of the evaluation process; this includes the patient and family. The ICU nurse should focus on the priority list of the patient in continuously evaluating the nursing care plan. The patients' response to any intervention should be documented (See section 2.5.1.5). Guidelines need to be developed to set an appropriate timeframe for interventions and evaluation.

5.2.8 Nursing education

Educational interventions have a positive effect on both quality and quantity of nursing documentation. Altering the forms does not seem to bring about better content in patients records but education in the nursing process and implementation of new forms for documentation might be a viable way to improve nurse skills in expressing the nursing care (Florin *et al.,* 2005:34). The researcher recommends that nurses working in an intensive care environment should be competent critical care nurses that have special training in the field such as a diploma or a degree in critical care. Nursing education should focus on including nursing documentation in all aspects of nursing practice in a formal and informal setting. The nurse should be able to recognize the purpose of documenting the care of the patient, describe adequate and inadequate documentation of patient care, identify consequences of inadequate nursing documentation and be familiar with the legal requirements of nursing documentation.

Regular in-service training related to issues in ICU nursing care, should be continuous and be supported by evidence based nursing practice. The skill and continuous professional development programmes should be improved and should reflect the necessary corrective measures on nursing documentation (Muller *et al.,* 2006: 510).

Nursing documentation seminars like "Good charting' and similar workshops should be part of the organisation's strategic plan to bridge the gap between nursing care and nursing

documentation in so doing, spread the issue of adequate nursing documentation. Well-planned and purposeful workshops are an effective method of educating nurses (Muller, 2006:3430).

5.2.9 Nursing research

The instrument utilized in this study to audit nursing documentation has been useful therefore can be recommended for further usage. This study identified problem areas in nursing documentation which reflects that the patient care given was inadequate. The nurse in the ICU should utilize the best available evidence of research findings in developing nursing care plans. Nursing research is being kept alive by investigation into the practice. It is important to have a research department to serve the issues and interest of the nursing profession in the organisation (Muller, 2006: 55). Nursing research is necessary for the nursing profession to be effective in the role as change agents which positively influence patient and health care systems by utilising best available evidence (McKinley, 2007:122). The researcher further recommends that further research is undertaken to investigate the factors contributing to inadequate nursing documentation in the intensive care unit.

5.3 Conclusion

Nursing documentation was found to be inadequate in the intensive care units which affect all aspects of nursing care. The challenge for nursing is to adopt a lifestyle of liability to maintain excellence in nursing care through adequate nursing documentation and proper utilization of the nursing process. In doing this, the professional standard that is set by the government and SANC is maintained. All stakeholders in nursing care should take responsibility in ensuring that the status of nursing documentation improves urgently.

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ANNEXURE A: CHECKLIST FOR AUDITING OF PATIENT DOCUMENTATION IN THE INTENSIVE CARE UNIT OF AN ACADEMIC HOSPITAL IN THE WESTERN CAPE

Audit of patient records admitted to the Intensive care unit for emergency care during the first 48 hours after admission for the period June 2008-December 2008

Audit will focus on the nursing process which includes: Assessment, diagnosis, planning, implementation, evaluation and specific documentation regarding nursing care.

SCORING:

- For each COMPLETE a score of 2 points
- For each INCOMPLETE a score of 1
- For each ABSENT a score of 0 point
- 95% is the accepted score and meets the standard
- Less than 95% is an unaccepted score

Section A: Demographic data

1. Date: Year……. Month ……..
2. File no.:…….
3. Unit:…….
4. Transferred or admitted from:
   - Emergency unit ☐
   - Transfer from ward ☐
   - From theatre ☐
5. Age:…….. ☐
6. Gender: ☐
7. Medical Diagnosis: ……..

Criteria	Complete	Incomplete	Absent
SECTION B: ASSESSMENT DOCUMENTATION			
8. Identification of nursing documentation			
11. Recognizable signature			
16. Socio economic status			
Assessment of the systems: 19. Cardiovascular system			
22. Gastrointestinal system			
23. Genito-urinary system			

25. Musculo-skeletal system			
32. Consent for tests and			
36. Mode of arrival indicated			
SECTION C: DIAGNOSIS DOCUMENTATION			
40. Potential /risk nursing			
41. According collected data			

SECTION D: PLANNING DOCUMENTATION			
42. Nursing care plan based on assessment data			
43. Prioritising the nursing			
46. Identified expected			
47. Nursing intervention for each nursing diagnosis			
SECTION E: IMPLEMENTATION DOCUMENTATION			
49. Execution of nursing care			
50. Doctor’s prescription			
SECTION F:EVALUTION DOCUMENTATION			

54. Patient goals been met			
55. Patient's condition before procedures and tests			
56. Patient's response after procedures and tests			
57. Modification to care plan			
Grand total = A+B+C+D+E=102		%	

ANNEXURE B: PROVISIONAL ETHICAL APPROVAL

24 June 2009 **MAILED**

Mrs P Hector
Dep of Nursing
2nd Floor Teaching Block
Stellenbosch University
Health Sciences Faculty
7505

Dear Mrs Hector

"A Retrospective analysis of nursing documentation in the intensive care Units of an academic hospital in the Western Cape."

ETHICS REFERENCE NO: N09/04/111

RE : PROVISIONAL APPROVAL

It is my pleasure to inform you that the abovementioned project has been provisionally approved on 24 June 2009 for a period of one year from this date. You may start with the project, but this approval will however be submitted at the next meeting of the Health Research Ethics Committee for ratification, after which we will contact you again.

It is recommended that you provide more detail on the pilot study in the protocol.

Notwithstanding this approval, the Committee can request that work on this project be halted temporarily in anticipation of more information that they might deem necessary to make their final decision.

Please quote the abovementioned project number in all future correspondence.

Please note that a progress report (obtainable on the website of our Division) should be submitted to the Committee before the year has expired. The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly and subjected to an external audit.

Please note that in line with the recent changes to research ethics guidelines, including the Declaration of Helsinki, the CHR requires that all researchers specifically request and motivate for a "waiver of informed consent" for retrospective clinical audits.

Federal Wide Assurance Number: 00001372
Institutional Review Board (IRB) Number: IRB0005239

The Health Research Ethics Committee complies with the SA National Health Act No 61 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 Part 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health).

ANNEXURE C: ETHICAL APPROVAL

19 August 2009 MAILED

Mrs D Hector
Dep of Nursing
2nd Floor Teaching Block
Stellenbosch University
Health Sciences Faculty
7505

Dear Mrs Hector

"A Retrospective analysis of nursing documentation in the intensive care Units of an academic hospital in the Western Cape."

ETHICS REFERENCE NO: N09/04/111

RE : RATIFICATION

At a meeting that was held on 19 August 2009, the Health Research Ethics Committee ratified the approval of the above project.

Yours faithfully

MRS EL ROHLAND
RESEARCH DEVELOPMENT AND SUPPORT
Tel: 021 938 9677 / E-mail: elr@sun.ac.za
Fax: 021 931 3352

19 August 2009

MAILED

Mrs D Hector
Dep of Nursing
2nd Floor Teaching Block
Stellenbosch University
Health Sciences Faculty
7505

Dear Mrs Hector

"A Retrospective analysis of nursing documentation in the intensive care Units of an academic hospital in the Western Cape."

ETHICS REFERENCE NO: N09/04/111

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Yours faithfully

MRS EL ROHLAND
RESEARCH DEVELOPMENT AND SUPPORT
Tel: 021 938 9677 / E-mail: elr@sun.ac.za
Fax: 021 931 3352

ANNEXURE D: PERMISSION TO DO RESEARCH

15 Selekta street
Jamestown
Stellenbosch
7600
24 June 2009
hectord@sun.ac.za

The Medical Superintendent
Tygerberg Hospital
Parow
7505

Dear Sir

PERMISSION TO DO RESEARCH

STUDY TITLE: A retrospective analysis of nursing documentation in the intensive care unit of an academic hospital in the Western Cape.

Investigator: Dawn Hector
The researcher, currently a masters degree student at the University of Stellenbosch, hereby request permission to utilize your facility to do research on the study topic mentioned above.
The benefits of the study will include the following:

- To identify problem areas with reference to nursing documentation in the intensive care units in an academic hospital in the Western Cape
- To identify short comings in nursing documentation that have a influence on patient care
- To identify course of continuity of care in the intensive care units
- To identify the standard of the nursing process implementation in the intensive care units
- To identify the accurate account of treatment and care planning
- To determine whether the professional legal requirements for nursing documentation are being met in the intensive care units of an academic hospital in the Western Cape
- To determine the protection of the welfare of patients through adequate nursing documentation
- To make recommendations that lead to changes in nursing documentation in the intensive care units

The study procedure involves no risks or harm to the hospital and includes a study and analysis of patients' files of those patients who were admitted in the intensive care units between July 2008 and December 2008.

You are free to ask any questions about the study and you may call me at work 021-938 9295or 0844025260

Data collected during this study will be retained till the final report of this research project and will be locked in a cupboard in my supervisor's office. Only researchers associated with this project will have access.

Thanking you in anticipation for a favorable response.

Yours sincerely

Dawn Hector

Investigator

TYGERBERG ACADEMIC HOSPITAL

BY _____
An authorized representative of Tygerberg Academic Hospital.

NAME _____

TITLE _____

DATE _____