IMPROVING THE COMPLETION OF THE PRE-OPERATIVE ASSESSMENT DOCUMENTATION IN A PRIVATE HOSPITAL GROUP IN JOHANNESBURG

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DECLARATION

I, Evashini Rajkumar, hereby declare that this research dissertation is my own work. It is being submitted for the degree of Master of Science in Nursing at the University of Witwatersrand in Johannesburg. It has not been submitted before for any other degree or examination at this or any other University.

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Evashini Rajkumar

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Protocol number: M160803

DEDICATION

This dissertation is dedicated to my parents, Mr. S. Govender and Mrs. G. Govender, for their endless love and support throughout my life. You both have been the driving force behind me, instilling courage and determination in all aspects of my life. I love you unconditionally want to thank you both from the bottom of my heart and I will always be indebted to God for blessing me with such wonderful parents. Dad, you have taxed yourself throughout the years, made sacrifices and given me a gift, education. I have finished what I started and I know you are proud of me. Mum you have taught me that even the largest task can be accomplished, step by step. You have always been my source of strength and motivation not only during moments of despair.

I dedicate this dissertation to the joy of my life, my "Masters" babies, my daughter Camryn and my son Tristan. I love you both unconditionally and with all my heart in unique ways. I want to thank you for being patient during this challenging journey and affording me the time to work on my studies. You both now have all my undivided attention and I promise to compensate for all the lost fun.

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Lastly I dedicate this dissertation to my 94 year old grandmother, who by God's grace is still with us. You serve many roles in my life, not only are you my gran, you are a mum, a sister, my best friend and confidant. I feel so proud and honoured to share my achievement with you.

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ABSTRACT

Background: Despite the availability of policies, procedures and clinical guidelines developed to improve patient safety in correctly completing the pre-operative assessment records, there is poor adherence to compliance. Therefore the aim of this study was to determine if the introduction of an in-service education programme will improve the completion of the pre-operative assessment records.

Objective: The objective of the study was to improve the completion of the pre-operative assessment records in two private hospitals in Gauteng.

Method: The setting for this study was two private hospitals in the Gauteng Province; each hospital conducting approximately 900 surgical procedures over a three monthly period. A one group pre-test-post-test design and a survey were conducted in this study. A retrospective chart review was conducted using a simple random sampling method in the pre-and post-test selection of the pre-operative assessment records. The pre-test was conducted between September and October 2016 and the post-test between May and June 2017. The researcher audited (n=187) pre-operative assessment records in the pre-and post-test. The data were collected using an approved audit tool currently in use at both Private Hospitals included in the current study. The data obtained in the first chart review (pre-test audit) was used to develop and implement the in-service education programme for the nursing staff at the two private hospitals where the study was conducted. The in-service education programme was conducted in February 2017 following the gaps identified in the incompleteness of the pre-operative assessment records in the first chart review. The second chart review (post-test audit) was conducted after the introduction of the in-service education programme to evaluate if the education programme had positively influenced the improvement of the completion of the pre-operative assessment records. A survey was

designed by the researcher and was completed by the respondents that had attended the in-service education programme. The aim of the survey was to explore the respondents' satisfaction of the training programme. The data obtained from the questionnaire was captured on an excel spread sheet and analysed by descriptive statistics and presented on frequency tables.

Results: Eleven of the 16 discrete variables tested in the course of the pre-and post-test analysis in Hospital A and B, demonstrated significant *($p<0.05$)* change following the in-service education programme. In each instance the change represented improved recording of the pre-operative assessment records, which is an important finding and one in which evidences the need for and value continued in-service education. The criteria that showed recording improvement post-education programme were: patient received in theatre noted (44.9%); booked procedure same as patients' description (12.8%); premedication administered (41.2%); patient kept nil per mouth (23%); identity band applied (20.3%); signatures with handover (10.2%); fluid start and end times (11.7%); fluid volumes start and completion (20.9%); fluid running total (18.7%); intravenous site checked (25.6%).The results provide evidence that the education programme did influence the compliance in some of the criterion in completing the pre-operative assessment records correctly.

Of the completed feedback questionnaires received (n=45: an overall response rate of 96.1%), 14 discrete answers were collated and 28% of the respondents answered the questions, including the respondents who indicated "nothing" as an answer. All respondents indicated the nurses who attended the training felt it was beneficial, with 35.7% indicating that the training should be repeated and held frequently; ensuring that the Doctors and agency nursing staff attended alongside the nurses was deemed important by 28.6% of the respondents. Additional training on the pre-operative assessment process and

care was requested by 14.3% of the nurses and post-operative care was specifically noted by 21.4% of those respondents.

Conclusion: This study provided evidence that after the introduction of the education programme to the nurses there was an overall improvement in the completion of the pre-operative assessment records. Although there was a disappointing note of compliance in completing the fluid balance record, the results indicated and overall improvement of the compliance in completion in most of the criterion of the pre-operative assessment records partially fulfilling the aims of this study. However it is strongly indicated that there is a need for further improvement in completing the pre-operative assessment records.

Keywords: Pre-operative Assessment; Patient Safety; Patient Records; In-Service Educational Programme; Improving Quality.

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ABBREVIATIONS

ACC	American College of Cardiology
AHA	American Heart Association
AIMS	Australian Incident Monitoring Study
COSAHSA	Council for Health Service Accreditation of Southern Africa
CPD	Continuous Professional Development
CT SCAN	Computed Tomography Scan
ENT	Ear, Nose and Throat
HREC	Health Research Ethics Committee
ICU	Intensive Care Unit
IV Fluid	Intravenous Fluid
JCAHO	Joint Commission on Accreditation of Health Organisation
MRI	Magnetic Resonance Imaging
NCEPOD	National Confidential Enquiry into Perioperative Deaths
NICE	National Institute for Health and Care Excellence
SANC	South African Nursing Council
STAR	Surgical Tool for Auditing Records
SURPASS	Surgical Patient Safety System
WHO	World Health Organisation

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CHAPTER ONE

OVERVIEW OF THE STUDY

1.0 INTRODUCTION

The aim of this chapter is to provide an overview to the study. The chapter starts with a concise background, regarding the researcher's concerns on incomplete pre-operative assessment records, and describes the purpose, problem statement, research questions and the purpose and objectives guiding the study. The ethical considerations will also be addressed.

1.1 BACKGROUND OF THE STUDY

South Africa hosts two healthcare systems – public and private. The public healthcare system provides care to 80% of the population and uses a tiered approach, with nurse led primary healthcare clinics the entrance point. The private healthcare system provides care to approximately 16% of the population who have medical insurance or can afford private healthcare, (Retrieved February 10, 2017 from http://www.soutafrica.info/about/health/health.htm).

Patients admitted to private healthcare facilities depend on the skills, knowledge and experience of the nursing staff to deliver safe and effective healthcare. This also applies to the time the patients spend in the operating theatre. The level of skills of the nursing staff related to preparing for and receiving a patient in theatre, is guided by policies and procedures and should there be a deviation, this could put the patient at risk. Pre-operative patient assessments are conducted by Registered Nurses and Enrolled Nurses in order to

obtain relative and important information about the patients before carrying out the planned surgical procedure (Kritts, 1997). According to Swart and Kuhn (2015), pre-operative assessment is the clinical foundation of pre-operative patient management and has the potential to reduce operative morbidity and enhance patient outcomes.

Pre-operative assessment records are an integral part of assessing the patient and are completed by the Registered and Enrolled Nurses in the surgical wards and the operating theatre receiving area. The pre-operative assessment records should include the following information: patient medical and surgical history, patient sticker, patient name and file number, allergy stickers and risk factors, signed informed consent, check for administration of pre-medication, check if the patient was kept nil per mouth, application of an identification band, pre-operative check done, signatures with handover and check patient vital data. Unfortunately, the pre-operative assessment records are not always completed correctly. Zambouri (2007), after evaluating the pre-operative assessment records in their study, concludes that nursing staff do not take the appropriate precautions for ensuring patient safety and do not follow protocol when admitting patients to the operating theatre environment.

Patients are faced with numerous risks due to poor compliance in carrying out and completing the pre-operative assessment records. These risks may include undergoing the incorrect procedure, allergies not identified, inadequate medical and surgical history and no indication if the patient was given medication pre-operatively. O'Connor *et al*., (2013) comments that over 900 "never events" of surgery, involving retained foreign bodies, wrong site and wrong patient surgery, occurred between 1900 and 2010 in the United

States. The lack of required signatures, lack of time, poor teamwork and timing of when the checklists were carried out were the main cause of these adverse events.

1.2 PROBLEM STATEMENT

The researcher is responsible for the education and training of Registered Nurses specialising in theatre nursing. Enrolled Nurses working in the theatre setting also receive education and training by attending workshops and in-house Continuous Professional Development (CPD) courses to improve their skills and bridge the knowledge gap identified during performance appraisal. The researcher has a keen concern in maintaining high standards of nursing practice in the operating theatre to ensure patient safety, and improve patient outcomes and the surgical experience of the patients. However, the researcher has noted occasions when patients have been incorrectly identified by nursing staff in the receiving area of the operating theatre and the surgical wards, which could have possibly contributed to incomplete pre-operative assessment records, but which were addressed and corrected accordingly when identified. These omissions oppose patient safety, best patient outcomes and positive surgical experiences.

1.3 RESEARCH QUESTIONS

To address the research problem of poor compliance in completion of the pre-operative assessment records, the following research question has been formulated:

Would an in-service education programme for Registered and Enrolled Nurses based on a record review identifying gaps in pre-operative assessment records lead to improved completion of these records?

1.4 PURPOSE AND AIMS OF THE STUDY

The purpose of the study was to improve the completion of the pre-operative assessment records in two private hospitals in Gauteng.

The aims of this study were to:

- Review the pre-operative assessment records;
- Develop and implement an in-service education programme for nurses based on the gaps identified in completion;
- Review the pre-operative assessment records completed after the in-service education programme.
- Explore the participants' satisfaction of the in-service education programme.

1.5 SIGNIFICANCE OF THE STUDY

Little is known about the completion of pre-operative assessment records in South Africa as studies addressing this issue appear to be rare. Only two studies, Mokgwathi, Baloyi and Ogunbanjo (2011) and Swart and Kuhn (2015), addressing similar issues in the South African context could be found. This study will focus solely on improving the completion of the patients' pre-operative assessment record by Registered and Enrolled Nurses. In addition, it will add to the body of knowledge and improve the completion of the pre-operative assessment records important for patient safety, patient outcomes and patient experiences.

1.6 SETTING, RESEARCH DESIGN AND METHODS

The setting for this study was two private hospitals in the Gauteng Province; each hospital conducting approximately 900 surgical procedures over a three monthly period. A quasi-experimental one group pre-test-post-test design was selected for the study, which

according to Burns and Grove (2013), allows the researcher to use one experimental group, collect baseline data (Appendix G), apply an experimental treatment (Appendix M) and collect data after the treatment (Appendix G) has been applied to another group.

The experimental group consisted of all the nurses practicing in the surgical wards and the operating theatre receiving areas. A record review, which according to (Retrieved November 14, 2016 from https: //medical-dictionary. the freedictionary.com/retrospective review) is a detailed written account of the patients' medical and surgical history, treatment, tests and diagnostic procedures done and scheduled, and current medication, collected the baseline data. The unit of analyses consisted of all the pre-operative assessment records completed by the nurses practicing in both the surgical wards and the operating theatre receiving areas two months prior to the collection of data. A calculated sample size (n=187) was used. The researcher used two quantitative methods in the current study, a pre-test-post-test design and a survey. A probability sampling method, simple random sampling, was used in step one to gather data from the pre-operative assessment records. According to Burns and Grove (2013), probability-sampling methods reduce the sample error, and consist of choosing individuals in such a way that every individual has the opportunity to be part of the sample. A simple random sampling method provides an unbiased representation of a group and is a fair method of selecting samples from a larger population. The structured Mediclinic Audit Tool (Appendix G) served as the data collection instrument. Descriptive statistics analysed the data, which was done quantitatively in Excel and Stata/IC version 14. Data were collected at two points, from September 2016 to October 2016 and from May 2017 to June 2017.

The second step was an experimental treatment that consisted of an in-service education programme (Appendix M), which focused on the Registered Nurse, Enrolled Nurses,

Enrolled Nursing Auxiliaries and Student Nurses practicing in both the surgical wards and the operating theatre receiving areas. The in-service education programme was based on the gaps identified during the first record review. A survey was conducted using a questionnaire (Appendix P) to collect data from the respondents in order to explore their satisfaction of the in-service education programme. An inclusion criteria and exclusion criteria was established to identify the respondents for this study. The questionnaire consisted of an open-ended and close-ended questions and a Likert-style rating scale of questions. A total of (n=45) nurses were eligible and met the inclusion criteria and answered the questionnaire after the in-service education programme.

The in-service education programme was developed by applying the ADDIE Model, which consists of five phases. The researcher adopted each phase accordingly to meet the objectives of the study and answer the research questions. The researcher's decision on underpinning the ADDIE Model to implement the in-service education programme was based on the gaps identified from the pre-test audit results. The third step was a second record review which was conducted as a post-test; the same research methods were applied to the post-test. Data collection started three months after the in-service education programme from May 2017 to June 2017.

1.7 DEFINITION OF THE KEY CONCEPTS

Theoretical assumptions are definitions of the concepts that are in line with the researcher's field of study and include models and theories used in research.

1.7.1 Patient Records

Patient records are a form of recording and reporting information pertaining to patient care, encompassing relevant patient information in an electronic or written form. This is also considered a vital method of communication amongst the multidisciplinary team members regarding the patients' tests, treatment, procedures and general health activities relevant to the patients' condition. According to Mathioudakis *et al*., (2016), records also provide evidence of procedures done on the patient, are a legal record and ensure all is compliant with delivery of quality patient care. Therefore, the records must entail a detailed account of the patient.

1.7.2 Pre-operative Phase

There are three perioperative phases: pre-operative, intra-operative and post-operative phase. The perioperative phase, according to Phillips (2013), involves the physical and psychological preparation of the patient prior to the surgical procedure. It runs from the time the patient is admitted to the hospital to the time the surgical procedure commences.

1.7.3 Pre-operative Assessment

Pre-operative assessment is an orderly process of gathering information related to the patient Phillips (2013). The information obtained assists the nurse to cater for the patients' specific and unique needs throughout the surgical intervention. The assessment of a patient scheduled for surgery is the clinical judgement of the nurse admitting the patient, Rothrock (2011) and according to Phillips (2013), the time the perioperative nurse collects a patients' health data enables the nurse to formulate a nursing diagnosis.

1.7.4 Patient Safety

Patient safety is an essential fundamental principle encompassing a wide range of actions to ensure safe delivery of patient care and that no harm occurs to the patient Ballard (2003) and according to Emmanuel *et al*., (2008), patient safety is crucial to minimise the impact of incidence and adverse events and maximise the patients' recovery.

1.7.5 Workshop

For the purpose of this study a workshop would refer to an educational programme for the presentation of the in-service education programme. It is designed to meet the needs of the practical and technical skills of the participants to use in their daily work lives, (Retrieved November 20, 2018 from https://ctb.ku.edu/en/table-of-contents/structure/training-and-technical-assistance/workshops/powerpoint).

1.7.6 Multimedia

In the current study multimedia involved the incorporation of video clips included in the power point presentation. For the purpose of this study multimedia was used to convey knowledge, (Retrieved November 20, 2018 from https://fcit.usf.edu/multimedia/overview/overviewa.html).

1.8 ETHICAL CONSIDERATIONS

The ethical principles outlined by Brink (2012) guided this study. According to Brink (2012), three fundamental ethical principles apply to ensure human rights are protected. In this study, the principles related to ethics were maintained, such as privacy, anonymity and confidentiality.

Ethical clearance for the study was granted by the Human Research Ethics Committee (HREC) (Medical) (M160803) (Appendix A) and the Hospital Managers (Appendix D) and Nursing Managers (Appendix E) from the two private hospitals approved the study. The Audit Tool (Appendix G) was used with permission (Appendix F) of the Private Hospital Group as the data collection instrument. Codes were used to identify the patients' records. The researcher ensured maintenance of anonymity and confidentiality of all records and respondents and the information was only known to the researcher and the supervisor. This information was kept electronically on a password-protected computer. The respondents who participated in the in-service education programme received an information sheet (Appendix J) that outlined the structure of the study. The participants were informed of their voluntary participation and withdrawal from the study without any discrimination or penalty (Appendix K).

According to the Guidelines on Keeping of Patients' Records (2008), all data obtained would be kept for two years if published and for six years if not published; after this period all data would be destroyed. In the event of data sharing with other researchers for academic purposes, written permission would be sought from HREC (Medical), (Retrieved November 15, 2016 from http://www/hpcsa.co.za/downloads/conduct_ethics/rules/generic_ethical_rules/booklet_14_keeping_of_patience_records.pdf).

1.9 SUMMARY

The proposed chapter layout for this study is as follows:

Chapter 1: Overview of the study

Chapter 2: Literature review

Chapter 3: Research design and methodology

Chapter 4: Presentation of the pre-test results and introduction of the in-service educational programme

Chapter 5: Presentation of the post-test results and comparison of pre-and post-test results

Chapter 6: Discussion, justification, recommendations, limitations and conclusion

CHAPTER TWO

LITERATURE REVIEW

2.1. INTRODUCTION

The previous chapter included an overview of the study, its background, the purpose, objectives and significance, research questions and problem statement. This chapter presents a summary of the literature review based on the topic and examines previous research, to gain insight on national and international trends on the outcomes of pre-operative assessment records.

The researcher used a systematic approach to search the literature. Databases CINHAL, MEDLINE and Google Scholar were used to search. The keywords used for data search are as follows, including the three areas on the audit tool:

Role of the Nurse; Patient Safety; Surgical Checklist; Pre-operative Assessment; Patient Records; In-Service Education Programme ; The Adult Learner; Addie Model Instructional Design; Allergies and Risk Factors; Informed Consent; Premedication; Application of Identification Band; Nil Per Mouth; Signatures on Handover; Fluid Balance Record; Improving Quality.

2.2 ROLE OF THE NURSE

The role of the nurse in the pre-operative assessment serves to identify the patients' risk factors and physical and psychological needs that could possibly increase the risk of complications not only before the surgical procedure, but also for the entire perioperative

phase, which includes the pre-operative, intra-operative and post-operative phase. The outcomes of the success of the patients' surgical journey rely on the information provided between the phases.

Malley *et al*., (2015) conducted a qualitative study where focus groups were conducted on the following themes: understanding patient vulnerabilities, multidimensional communication, managing patients' expectations and nursing role in compensating for gaps. The conclusion of the study detailed the nurses' role in the pre-operative assessment, during the patients' transition of pre-operative care, in identifying the risk factors that could affect the surgical patients' experience. The research findings in the study identified that communication gaps exist during patient transition throughout the perioperative assessment.

2.2.1 Categories of Nursing Staff Responsible for Completing the Pre-operative Assessment Record

Two categories of nurses are responsible for the completion of the pre-operative assessments records, the Registered Nurse and the Enrolled Nurse. The nurse that completes the pre-operative assessment records can be a Registered or Enrolled Nurse in the surgical and day wards, or an experienced Theatre or a trained Theatre Nurse. The scope of practice of the Registered Nurse falls under the regulations of Nursing Act, 2005 (Act 33 of 2005). There are two regulations that respectively guide the scope of practice, acts or omissions in the functioning of the Operating Theatre Nurse, Regulation R387, 1990 and Regulation R2598, 1984. The regulation of South African Nursing Council (SANC) grants the independent practice of the Registered and Theatre Nurse. According to Searle (2009), it is the responsibility of the Registered Nurse to adhere to the nursing

regulations guiding his/her clinical practice and to provide the appropriate nursing care for the patient.

The Registered Nurse and Enrolled Nurse in the operating theatre receiving area are responsible for ensuring the patients' records are completed and an entry in the implementation record clarifies this with a signature from the surgical ward nurse who hands over the patient. The operating theatre receiving area is also known as the holding area, where patients awaiting a surgical procedure are meant to wait (Phillips, 2013).
The patient is accompanied by nursing staff from the ward and a porter. The escorting nurse hands over the surgical patient to the nurse in the operating theatre receiving area. The completed pre-operative assessment record, together with the informed consent, are checked and acknowledged, with the signature of the nursing staff further clarifying the records are correctly completed. The nurse receiving the patient introduces him/herself then asks the patient to confirm their name and the surgical procedure for which they are booked and clarifies this with the informed consent and the patients' identification band.

Tuffaha *et al*., (2012) conducted a study to guide the nursing staff who completes the patients' pre-operative records to improve the quality of completion of pre-operative assessment records utilising the Surgical Tool for Auditing Records score (STAR) method. This tool is believed to be reliable, and suggestions are that it can be implemented universally. On conclusion, the authors confirmed a significant overall improvement in the completion of the pre-operative records. An educational exercise was implemented whereby all participants confirmed that this would have an influence on their practice in completing the records.

Both the Registered and Enrolled Nurse are responsible for admitting and completing the pre-operative assessment records of the patient scheduled for a surgical procedure and therefore preparing the patient before their arrival in the operating theatre receiving area. The Enrolled Nurse also has a function in the completion of the pre-operative assessment record with the supervision of the Registered Nurse. The scope of practice of the Enrolled Nurse is guided by the Nursing Act, 2005 (Act 33 of 2005).

A Theatre Nurse is a Registered Nurse with, SANC who works in the operating theatre. A Registered Nurse can be an experienced Theatre Nurse or a Registered Theatre Nurse with a Diploma in Operating Room Technique.

An experienced Theatre Nurse is a Registered Nurse who works in the operating theatre, and who has gained competence and experience from exposure thus enabling them to apply skills and technique in the operating theatre.

A Registered Theatre Nurse is a Registered Nurse who has completed and obtained a Diploma in Operating Room Technique, and who is registered with an additional qualification in the post basic Nursing Science course (Regulation R212, 1993). The Operating Theatre Nurse is registered with SANC and has the knowledge, skills and technique to work independently in the operating theatre.

It therefore remains the responsibility of the organisation to ensure the nursing staff are trained and receive the appropriate training to achieve optimal productivity to complete tasks (Muller, 2009).

2.3 PATIENT SAFETY

Patient safety forms the forefront of patient care. The initiation of the surgical safety checklist forms an integral part to the standard of care administered to a patient.

St. Jacques and Minear (2008) conducted a study on the application of available software design and standards available to improve patient safety throughout the perioperative process. Patient misidentification, surgical site misidentification and medication errors are amongst the type of errors most likely to occur due to poor use of technology. Faced with these daunting challenges, an approach is required to make a dramatic change within the perioperative environment. The implementation of perioperative technology was to improve patient safety as well as the efficiency and speed of the nursing staffs' workflow. The computing of patient data helps to reduce errors and re-entry of information while maintaining patient privacy.

A retrospective record review was conducted in eight countries during 2005, including South Africa, Wilson *et al*., (2012), and records of 15 548 patients were randomly selected during the study. The objective of the study was to assess the frequency of adverse events and the impact it had on the patient. The results concluded that inadequate supervision and training of the staff and not following policies and guidelines further contributed to most of the adverse events. Similarly, compliance in completion of the pre-operative assessment records was noted by the researcher in this study. Unsafe patient practices are seen as major medical legal risks.

An adequately prepared patient for a surgical procedure enhances the patients' safety Isgett-Lynn (2011) and can further reduce potentially serious medical legal issues at

various medical institutions. It further prevents last minute cancellations of surgical procedures, unnecessary complications, and bleeding risks for patients who have not been appropriately stopped from taking chronic medication, such as aspirin and warfarin, preceding the scheduled procedure. Inadequate preparation results in a waste of time for both the patient and the healthcare provider. All information pertaining to the patient preparation and care should be carefully and legibly recorded, signed and dated.

2.4 SURGICAL CHECKLIST

A surgical checklist comprises of a chain of communication consisting of the patients' surgical journey. The World Health Organisation (WHO), (Retrieved July 16, 2016 from http://www.who.int/patientsafety/safesurgery/knowledge_base/SSSL_Brochure_finalJun08.pdf), launched a surgical safety checklist, which is currently used worldwide in operating theatres, including the United Kingdom and in current practice in South Africa. The checklist comprised of three components: sign in before the commencement of anaesthesia; the time out after the administration of anaesthesia and just before the surgical incision; and the sign out during wound closure and before transporting the patient from the operating theatre.

The National Patient Safety Agency implemented and introduced a safety checklist alert in 2009, which was in line with the WHO's safety checklist.

2.4.1 Purpose of the Checklist

The purpose of the checklist was to ensure that the organisation:

- Completed the checklist correctly for all patients undergoing a surgical procedure under anaesthesia.

- That a registered team member entered the information in the checklist in the patients' clinical records.
- The checklist was implemented within the organisation.

The aim of the study was to discover if all the patients' disease processes were mentioned in their records, and to identify if any mistakes regarding the surgical procedure were recorded in the records and how they affected the care and management of the patient.

The World Alliance for Patient Safety (2008), (Retrieved July 16, 2016 from http://www.who.int/patientsafety/safesurgery/knowledge_base/SSSL_Brochure_finalJun08.pdf). also part of WHO, established the "Safe Surgery Saves Lives," which was initiated to reduce the number of surgical deaths worldwide The intention of the surgical safety checklist, launched in New Zealand in August 2009, was to ensure patient safety in every surgical procedure undertaken, with the implementation of the simple yet efficient set of priority checks (Retrieved July 13, 2016 from https://www.hqsc.govt.nz/assets/Perioperative-Harm/PR-files--images/Litmus-surgical-safety-checklist-report-June-2013.pdf). The aim of the study was to explore the personnel's attitude towards the checklist and its use in the wide range of hospitals in New Zealand. Common barriers were identified in the study to the use of the checklist.

2.4.2 Common Barriers to the Use of a Checklist

- Personnel attitude
- Extent of use of checklist.
- Changes required for improvement of the checklist.

2.4.3 Checklists as part of nursing documentation for the surgical patient

- Surgical checklists are used routinely in major and complicated surgical procedures and less in emergency trauma and caesarean section procedures.
- Some of the personnel merely "tick the box" rather than conducting the checks by asking patients the relevant questions. This is due to lack of understanding the intent of the surgical checklist.
- In contrast, personnel feel their professional judgement is being undermined and resort to rigorously conducting the completion of the surgical checklist.
- Personnel in New Zealand observed that the majority of surgical procedures were not seen to be critical in line with the surgical checklist. This resulted in an unmanageable complex surgical checklist due to personnel leaving the inclusion of non-applicable answers and spaces for comments and signatures incomplete.
- The WHO Implementation Guide was adapted to the needs of each hospital (Retrieved July 13, 2016 from https://www.hqsc.govt.nz/assets/Perioperative-Harm/PR-files--images/Litmus-surgical-safety-checklist-report-June-2013.pdf).

There were suggestions from the study on how to improve the use of the checklist as highlighted below:

- The surgical checklist needs to be viewed as a communication tool among team members to ensure patient safety rather than being viewed as a compliance document.
- The data obtained on incidents where patient safety was enhanced using the checklist needs to be communicated to personnel.
- Video clips, peer reviews and observations enhance good practice and effective demonstrations on the use of the surgical checklists in New Zealand.

- As recommended by, WHO, the surgical checklist should be kept simple.

Recording in the surgical checklist makes one fully accountable and responsible for the completion of the checks. This is accompanied by one's full name, signature, designation, date and time. Auditing is done regularly to check the compliance in the completion of the surgical checklist. Currently memorandums are issued to personnel if they are found "not to be complying" in completing the surgical checklist correctly. As the surgical checklist forms part of the patients records included in the patients' file, it serves as important evidence in case of an adverse event.

The surgical checklist has great relevance in developing countries, which includes South Africa. Personnel have motivated for more data information on the possible impact the surgical checklist had on enhancing patient safety and requested that this be included in stories and newsletters rather than just highlighting the areas of non-compliance.
Cadman (2016) reviewed evidence, which found that the use of the checklist improved communication and enhanced teamwork thereby reducing patient morbidity and mortality. The use of the checklist also assisted in the reduction in operating time and theatre costs (Cadman, 2016).

A retrospective record review done by De Vries *et al*., (2011) concluded that financial and physical damage can be prevented by using the Surgical Patient Safety System (SURPASS) checklist. The study identified the common factors that contributed to the surgical malpractice claims was failure in diagnosis or pre-operative damage. The author further claimed this could be prevented by 30% if the SURPASS checklist was used. Failure in the following areas increased the incidence of malpractice: failure to adhere to

protocols, failure in communication amongst care providers, absence of information in the pre-operative records and failure to register the informed consent. These findings are similar to the results of the researcher's study.

Vohra *et al*., (2015) state that despite the growing use of the WHO's surgical safety checklist being adopted globally, the perception of its usefulness was a factor related to many reported adverse events internationally. This was further justified by Urbach *et al*., (2014) regarding the effective use of the surgical safety checklist. The surgical safety checklist was although introduced between June 2008 and September 2010, only a third of the surgical safety checklist began to be utilised in April 2010, with the Canadian Safety Institute version used in 79 hospitals. Out of 101 hospitals, only 92 provided copies of their checklist, another nine hospitals used a customised checklist and four used the WHO checklist. An education programme was implemented on the use of the checklist at 97 hospitals. Feedback on the compliance of the surgical safety checklist use reported high usage between January and June 2013. Similarly, in this study the researcher delivered an education programme underpinned by the ADDIE Model to improve the compliance of the completion of the pre-operative assessment records of patients scheduled for surgery under anaesthesia.

According to a study by Nilsson *et al*., (2010), the most common causes of wrong site surgery and overlooking allergies are a result of poor communication recorded in the pre-operative surgical safety checklist. Protocols and guidelines currently in place need to be adhered to during the checking of the pre-operative assessment records. The 78% to 84% of respondents who answered the questionnaire in the study allowed the author to identify the importance of confirmation of patient identification, correct procedure, correct side and

checking of allergies. Nilsson *et al*., (2010) indicates that the operating room is viewed as a complex environment with the potential for high adverse events. Conley *et al*., (2011) confirm the reduction in mortality after an investigation in 2009. In order to achieve positive patient outcomes, the effective implementation of the checklist needs to be adopted.

Melekie and Getahun (2015) conducted a prospective observational study on the compliance of the completeness of the surgical safety checklist of patients undergoing elective and emergency surgical procedures. The authors highlighted improved patient outcomes and a reduction in occurrence of perioperative surgical complications is due to appropriate use and compliance of the surgical safety checklist. The authors recommended supplementary training on the use of the checklist to improve communication, and regular auditing of the checklists.

According to orthopaedic surgeon, Patel (2015) at Monash and Melbourne universities although internationally recognised, standardised surgical checklists are in place, they are not properly adhered too. The intention of the surgical checklist was to ensure quality control and compliance, however not all Australian surgeons are adhering to it. Despite procedures and guidelines in place, wrong side and site surgery are amongst the common errors reported in the operating theatres. Patel (2015) conducted a study at four Australian hospitals over a six-month period, where he identified a difference in the compliance rate with the manner in which the surgical checklists were being completed. The compliance rate from the results following the study indicated adherence to compliance of the surgical checklist was the highest with regular surgical team members and declined when there was casual or agency surgical staff present. Patel (2015) further identified fraudulent

completion of the WHO checklists. Staff members indicated the surgical checklist is seen as a “tick box” and is signed despite not all the items being checked, which almost resulted in wrong side surgery in a child.

Low, Walker and Heitmiller (2012) highlight the ongoing challenges experienced in implementing checklists in the operating theatre to improve patient safety. Six key elements were targeted at the Seattle Children’s Hospital. Particular attention was paid to the importance of ongoing training and coaching as an important factor; training and coaching are part of the education process to demonstrate the correct execution of the checklists. Multimedia presentation was made available on You Tube Video for staff to review and this was supported by strongly worded emails detailing the correct implementation of the checklist. Routine audits were conducted and training became the focus, which had a positive impact on the nursing staff.

2.5. PRE-OPERATIVE ASSESSMENT

The pre-operative assessment, which plays an important role in the success of the patients’ surgical journey entering the operating room theatre, consists of a record that is done to ensure the patient is medically fit for a surgical procedure. This also helps to reduce financial costs and implications for the hospital as well as prevent the surgical procedure being cancelled or postponed. The pre-operative assessment is essential and further serves as a guide to verify the patient is prepared physically and emotionally for the surgical procedure. Therefore addressing these problems prior to the surgical procedure can enhance the post-operative outcomes for the patient. Most important is that despite who conducts the pre-operative assessment, the patient must be adequately prepared for the scheduled surgical procedure.

According to Pritchard (2012:51), "pre-operative assessment aims to reduce patient anxiety as well as improve patient outcomes in the post-operative period." Pritchard (2012) further echoes the information obtained using the hospital admission forms, as this outlines part of the overall management plan of the patient. The pre-operative assessment clarifies that the patient is prepared, mentally and emotionally, for the scheduled surgical procedure.

The pre-operative assessment is a process of interviewing a patient, using the pre-operative assessment record in line with the audit tool (Appendix G), to obtain baseline data. The data obtained from the patient prior to the surgical procedure includes if the patient was kept nil per mouth, premedication administered, the patients description of the surgical procedure is the same as the booked procedure, application of an identification band, allergies or high risk factors, administration of intravenous fluid (IV), name of IV administered, volume and time IV fluid was commenced and signatures of personnel completing the pre-operative assessment record. The pre-operative assessment of a surgical patient assists in eliminating gaps and allows the opportunity to improve patient care and safety. The pre-operative assessment is done to obtain relevant and important information about the patient before carrying out the planned treatment of care in the operating theatre (Kritts, 1997).

Swart and Kuhn (2015: 107) state, "Pre-operative evaluation of the patient is the clinical foundation of pre-operative patient management and can potentially reduce operative morbidity and enhance the patients' outcomes." It is important to note that accurate completion of the pre-operative assessment records will ensure a safe surgical journey for the patient. According to Zambouri (2007), after evaluating the pre-operative assessment records, nursing staff do not take appropriate precautions for ensuring patient safety and do

not follow protocol when admitting patients to the operating theatre environment; this is evident by the incomplete pre-operative assessment records. Patients are faced with numerous risks due to poor compliance in carrying out and completing the pre-operative assessments records. Zambouri (2007) further highlights these risks may include incorrect procedure, allergies not identified, inadequate medical and surgical history and not indicating the administration of pre-medication pre-operatively. In addition to the literature, the researcher has noted occasions when patients have been incorrectly identified by nursing staff in the operating theatre receiving area.

The pre-operative assessment has been available for many years although the uniformity in the way it is used varies, however it has proven to be a success in surgical procedures. According to Bramhall (2002), nurses are forefront in the delivery of healthcare, ensuring an effective and efficient patient journey. She emphasises the vital role of nurses in the pre-operative assessment of elective surgical patients. The purpose of the pre-operative assessment of the surgical patient varies from area to area and identifies a few of the principles of the pre-operative assessment namely:

- The pre-operative assessment enables the patient to be identified and for obtaining medical and surgical history, as well as attending to the patients' psychological and spiritual needs.
- As the pre-operative assessment forms part of a risk assessment, it helps the anaesthetist to gain insight to ascertain if the patient is physically and mentally fit to undergo the surgical procedure.
- Any abnormalities detected before the scheduled procedure can be attended to or rescheduled until the patient has reached an optimal health status.

Kluger *et al*., (2000) reviewed 197 reports on the Australian Incident Monitoring Study (AIMS) database to conclude that the incident rate post-operatively can be reduced if the pre-operative preparation was done accurately. According to AIMS, the 6,271 cases reported fell into the following categories regarding incidents involving inadequate patient pre-operative preparation: evaluation, poor communication and poor airway assessment.

The study found 10% of the patients had not been reviewed by an anaesthetist, 23% of the anaesthetists did not perform the pre-operative assessment or the patients were seen by a different anaesthetist pre-operatively and anaesthesia was administered by a different anaesthetist. There was a marked improvement following proposed corrective strategies involving improved communication, additional training, quality assurance activities and development of protocols, which were appropriately applied. The study highlighted other issues such as unplanned admissions and cancellation of the surgical procedure due to inadequate preparation of patients or assessments that were not completed correctly.

Beck (2007:35) states, "nurse-led pre-operative assessment for elective surgery is becoming increasingly recognised as a valuable method of ensuring that patients have a safe and well planned hospital stay." Beck (2007) also noted that the pre-operative assessment must be applied systematically in the same way each time. The pre-operative assessment process is guided by nursing records that are prepared in advance in order to maintain uniformity in the way patient data were gathered and completed. The author indicated that the systematic approach guided the multidisciplinary team to be able to access the patients' information in the same place in a reliable manner. The literature on this study concluded that continuous professional development of nurses not only improves their skills and knowledge, but is also evident in the productive outcomes of the patients.

According to Stahel *et al*., (2009), application of the Universal Protocol, introduced by the Joint Commission in 2004, was designed to prevent the occurrence of wrong patient identification, wrong site surgery and to ensure the patient had the correct scheduled surgical procedure. The aim of the Universal Protocol was to improve the safety of the patient. The success of the system was solely dependent on commitment from the entire team, which included the staff from the ward, to make this work. Another pitfall in the wrong site and wrong patient surgical procedure was from inaccurate completion of patient records, which occurred due to a mix up of records in patients with similar or sometimes identical names. Prior to taking the patient into the operating theatre, the verification process is done in the operating theatre receiving area, where the pre-operative record with a checklist is reviewed and verification recorded and completed accurately.

The National Good Practice Guidance on Pre-operative Assessment for Inpatient Surgery states "pre-operative assessment establishes that the patient is fully informed and wishes to undergo the procedure" (Bridgen, 2003:2). The programme was developed for the pre-operative assessment of the patient before admission of the surgical procedure. It further allows the patient to be fully informed of the surgical procedure, the expectations, reduces their length of stay, minimises last minute cancellations and improves their surgical experience. The American Heart Association (AHA) and the American College of Cardiology (ACC) revised the pre-operative assessment guidelines of cardiac patients in 2007 as a gap was identified in the pattern of practice. This gap was the clinical practice and the recommended guidelines for the pre-operative assessment of the AHA and ACC.

The literature guided the researcher to identify the gaps in completing the pre-operative assessment records as well as addressing these gaps to improve the completion of such records.

2.6 PRE-OPERATIVE RECORD

A record contains the patients' information, whereby baseline data is collected for on-going patient care in the operating theatre environment Phillips (2013). During the course of the perioperative pathway, the patients' records are utilised by nurses, anaesthetists and surgeons. All these members of the multidisciplinary surgical team take responsibility for recording different information relevant to the patient. The nurse (Registered and Enrolled Nurse) are the ones who primarily receive and prepare the patient in the surgical ward prior to the surgical procedure; this is where the pre-operative assessment record is completed, relaying and highlighting information of the patients' data.

Aliyu *et al*., (2015:55) further state that "the notion of the pre-operative visit has been in existence since the 1960s." Cox and Donworth, who were included in Aliyu *et al*., (2015:55) literature, further established the three main components of pre-operative care of patients "a pre-operative visit is related to a nursing assessment of the patient, care of the patient during surgery and post-operative nursing care and evaluation of the patient." In addition to the literature, the benefits of the pre-operative visit are to ensure that adequate patient information has been obtained and recorded. Other authors included in this literature claim that pre-operative information allows the patient to be psychologically prepared thereby reducing their anxiety.

The detailed pre-operative assessment record not only provides for safe patient care, but also is of utmost importance in providing adequate patient information. Literature review, conducted by Braaf, Riley and Manias (2015), detailed that the failure in communication of the pre-operative assessment record compromised patient safety across the perioperative pathway. Incomplete pre-operative assessment records present the multidisciplinary team with sentinel and adverse events due to unclear verbal and non-verbal communication. Communication contributes to delivery of safe quality of patient care if the information is accurately documented; it is the fundamental process to ensure optimal patient safety in written forms.

According to Coughlan *et al*., (2015), there was an improvement in certain areas in the completion and recording of the pre-operative procedures on completion of a retrospective audit on the patients' surgical records. The researcher found an improvement in some areas of the three sections in the completion of the pre-operative assessment records following the in-service education programme.

Action research conducted by Lees (2010) explored issues on poor quality of recording and ways to improve this during patient assessment. The results of the study noted that the common omissions in the pre-operative assessment records were unrecorded IV infusions and the entries were not up to date from admission. During the action research, the author made amendments to the record to enhance improvement in areas that were identified on poor compliance and completion.

Fourcade *et al*., (2012) study identified barriers that influenced the effective implementation of the surgical checklist, such as cultural and organisational factors,

duplication of items within the existing checklists, poor communication, risks that were unaccounted for and the time spent completing the checklist. Staff further commented that due to their workload, the checklist took too long to complete. The objective of the study was to identify barriers affecting the use of the checklist, identify compliance in the completeness of the surgical checklists and implement strategies to ensure the effective use of the surgical checklist.

A quasi-experimental study on patient records completed by nurses before and after and an educational intervention was conducted at a teaching hospital at the Zone of Mata Mineira, Dutra *et al*., (2016). During the study, 826 records were audited for compliance in completion. The patient records serve as a communication tool among the multidisciplinary team members. Accurate recording of the patients' information allows the multidisciplinary team to execute the appropriate care, enhancing patient safety. The interventions implemented were to improve compliance in the completion of the records, which found a decrease in offences due to the positive results of the intervention. After the intervention, the nursing staff was more attentive to the items left incomplete in the patient records.

The literature provided identified the benefits as well as the risks of a completed pre-operative assessment record. It is therefore important to adhere to protocols and take the necessary precautions when completing the pre-operative assessment records to reduce operative morbidity and enhance patient surgical outcomes. The most identified gap indicated in the literature review was nursing staff that do not follow protocol. The researcher also noted on occasions when the nursing staff failed to identify patients correctly upon receiving them in the operating theatre receiving area. These gaps were

highlighted in the in-service education programme and further addressed areas of incompletion of the pre-operative assessment records and provided guidance in the improvement thereof.

2.7 PATIENT AUDIT RECORDS

Audit is defines as a quality improvement process to improve the quality of care of a patient Fawkes, Ward and Carnes (2013). An audit consists of a systematic review of the patients records to ensure the care carried out on the patient is in line with the implementation. Audits are conducted in various clinical facilities both nationally and internationally. Audits are generally conducted on the quality of care and treatment of the patient. The findings of the audit guide the nursing staff in identifying areas for improvement Nock (2016). Nock (2016) implemented an eight-step guide on auditing medical records and these principles were applied to the researcher's study where the patients' pre-operative assessment records were audited.

Depending on the objectives of the audit, it can be done internally by the nursing staff or externally by an agency. Compliance audits are conducted externally by a third party while internal audits are conducted to assess quality of care Nock (2016).

The researcher is not a qualified auditor, but for the purpose of this study conducted an audit for quality improvement in compliance of completion of the pre-operative assessment records.

2.7.1 Common Errors on Patient Records

About 126 wrong site surgical procedures were cited by the Joint Commission on Accreditation of healthcare organisation (JCAHO), Sentinel Event Alert Issue (2001) situated in the United States. An observational study, followed by interviews and a retrospective survey of patient records De Marinis *et al*., (2010), indicated that not all nursing activities were recorded. The quality of care delivered was found to be inadequate due to incomplete and insufficient recording. The authors of the study needed to identify recording strategies that nursing staff would find easy to complete.

One hundred and fifty patient records were reviewed retrospectively Hanchanale *et al*., (2014) and it was found that in 6.23% of patients with renal problems, who had undergone operations and investigations, the side of the pathology was not indicated. However, although the wrong side was mentioned in three patients' clinic letters, the remaining two patients did have the side of their radiology reports mentioned; the radiologist however, did indicate the correct side in the renal pathology report. Fortunately, no wrong side surgery was conducted.

In 50 patients whose interventions involved the ureter, 67% of them did not have the side mentioned, neither was it indicated in the patients clinic letter. Patients scheduled for bilateral ureteric stents had only one removed and the other stent remained for a year before removal. According to Hanchanale *et al*., (2014) the admission card indicated "flexible cystoscopy and removal of ureteric double J stent." Even though wrong side surgery was not performed on any of these patients, it is still seen as a dramatic and devastating catastrophe leading to surgical errors. Patients in all the records that were reviewed consented for the correct surgical procedure, however the side of the surgery was

not marked neither was the consent rechecked on the day the surgery was performed. An important finding in this study Hanchanale *et al*., (2014) was that although the side was not mentioned or was incorrectly recorded, no wrong side surgical procedure was performed.

Gebremendhn and Nagaratnam's (2017) cross-sectional study, in which anaesthetic record sheets were audited, identified that less than 50% of the records were incomplete. Recommendation for training and regular clinical audits needs to be carried out on the incompleteness of the records until standards were met. As the record forms the perioperative pathway for patient care, it is imperative to establish strategies to improve clinical record keeping.

A retrospective study conducted by Naik, Mohammad and Dhulkhed (2017) audited pre-operative records of patients who had elective surgery in a rural hospital in India. A pre-operative form was introduced which significantly improved the quality of the overall outcome of the surgical patient. It was therefore recommended to use the standardised pre-operative evaluation form during the pre-operative assessment of the surgical patients. Prior to the implementation of the pre-operative evaluation form, it was found patients were not formally handed over to the operating theatre staff in the operating theatre receiving area.

Kori's and Hopkins (2015) discovered a large number of same day cancellations at a general hospital in England. An audit was conducted and the results revealed a discrepancy in the findings between the pre-operative assessment and that of the anaesthetic assessment. Three interventions were decided on and implemented to bring the pre-operative assessment in line with the anaesthetic assessment. The inexpensive and effective

methods of intervention improved the quality of the pre-operative assessment aligning it with the anaesthetic assessment, reducing the rate of same day cancellations of the surgical patients.

Shah *et al*., (2011) conducted a retrospective study in which 48 operative records were randomly analysed for completeness as per protocol in Good Surgical Practice (2014), (Retrieved November 15, 2016 from https://www.rcseng.ac.uk/standards-and-research/gsp/). The operative record was hand written and in a legible manner. When compared to a previous audit, signatures and names appeared in the pre-operative record, which improved by 98% during the retrospective record review. The patients' operative records serve as a legal record, which are subject to production in a court of law pertaining to certain conditions; therefore it is important they are completed correctly and legibly. It was recommended that regular audits be conducted to improve the quality of the completeness of the pre-operative records of patients.

2.8 IN-SERVICE EDUCATION PROGRAMME

An in-service education programme is regarded as instructional training delivered to employees or staff by an agency or an institution (Retrieved November 14, 2016 from https://www.elsevier.com/books/mosbys-medical-dictionary/mosby/978-0-323-41425-).

The aim of in-service education is to improve the skills and knowledge of staff to maintain high standards of practice and improve patient safety. Continued in-service education enhances professional development of nursing staff enabling them to increase their current knowledge towards their professional growth and increase patient satisfaction and safety. In order to obtain satisfactory results, the content of the education programme must be appropriate and easily presented to the attendees to enable them to integrate this to the

nursing staff in this study to guide them in improving the completion of the pre-operative assessment record. Applying an instructional design model helped the researcher to improve the content and facilitate the in-service education programme for this study. The model applied to this study was the ADDIE Model.

The quality of an in-service education programme must facilitate learning and should be carefully structured and coordinated in order for it to be successful. Despite the method used or adapted for the presentation of the education programme, the idea is to gain the attention of the audience, make them curious and ensure they understand the content of the information presented. Active participation from the attendees ensures that information is understood and retained (Kotze *et al*., 2011).

Literature from various studies indicates an increased improvement in completeness of recording following an intervention. An education programme of instruction, provided by a medical institution for nurses, was conducted by Courtenay, Stenner, and Carey (2009). Their findings identified the critical role that nurses play in improving assessment and recording of patients' records during the pre-operative assessment. The study concluded that an education programme for nurses would contribute to better evaluation and completion of a pre-operative assessment and for team debriefing purposes involving surgeons and anaesthesiologists.

Tola *et al*., (2017) mentioned that simple training and intervention in completing patient records correctly could effectively improve the quality of patient care. Similar to this study, there was a marked improvement in the completion of areas on the pre-operative assessment records.

2.8.1 Designing an Education Programme

Education programmes are designed to improve the professional development of a person within the clinical setting Muller (2009). Major components of the education programme are carefully constructed to ensure the recipients are fully equipped with adequate knowledge in line with the outcomes. When designing the education programme it should be relevant to ensure the learners' competencies in order to deliver quality patient care. The effectiveness of the education programme should be in line with achieving the set outcomes, this would be clearly identified in the learners change in behaviour and their skills displayed in the clinical setting. There needs to be positive feedback on the impact of the education programme; this would be evident in the improvement of clinical competencies in the clinical setting. The learners' commitment to perform the desired outcomes as set out in the education programme highlights the ability to uphold standards of practice. Therefore, the content of the education programme needs to be in line with the expected competencies of the learner.

2.8.2 Instructional Design Model

An instructional design model is a systematic process of developing and delivering instructional material Gustafson, Branch and Alpert (2002). The instructional design model originated in 1965 by Robert Gagne, who published his first Conditions of Learning Theory and undertook to apply the learning theory and analysis and incorporate the development of instruction (Campbell, Schwier and Kenny, 2005).

His nine-step model is based on information processing and the mental thoughts that occur through various stimuli. Gagne introduced five different types of learning outcomes, suggesting different instructional approaches to each outcome. The types of learning

included classical conditioning, operant conditioning, verbal association learning and chaining.

Based on Gagne's theory, several instructional theorists proposed different approaches to deliver instructional material (Reiser and Dempsey, 2011). The Florida State University, in conjunction with the Department of Defence, created a revised the ADDIE Model, which included the same slightly, modified phases.

2.8.3 ADDIE Model

The ADDIE Model consists of five phases: Analysis, Design, Development, Implementation and Evaluation. It is used by instructional designers and training developers to create instructional course material. The ADDIE Model is a simple and valuable educational model (Kaminski, 2007). When designing the education programme using the ADDIE Model, the researcher took into consideration the following aspects: the assessment of the learners needs, deigning the education programme to meet the needs of the nursing staff, developing the educational programme based on the planned design, implementing the education programme and evaluating if the education programme met the needs of the nursing staff. This study describes the process the researcher used to design the education programme for the nursing staff at both private hospitals included in this study using the ADDIE approach. The ADDIE Model has been used in various educational researches. **Figure 2.1** illustrates the five phases of the ADDIE Model the researcher applied to create the in-service education programme.

Figure 2.1: The ADDIE Model

Source: Hashmi, Y. (2015). ADDIE and Design. (Retrieved November 20, 2016 from **https://noodlenooknet.wordpress.com/2013/01/24/addie-and-design**)

2.8.3.1 Analysis

The Analysis Phase allows the facilitator or trainer to identify the learning needs, knowledge gaps, skills and behaviours of the learners. This phase is seen as the goal setting stage. The needs of the learner must match the design of the programme ensuring that information is not duplicated. After determining the needs, the facilitator plans and constructs a training programme, taking into consideration the learners' level of experience and educational level in that area of expertise. A needs analysis is conducted to determine solutions for the problems identified (Forest, 2014).

2.8.3.2 Design

This phase is a process of proposing how the information delivered in the form of an education programme will be grasped. The learning objectives, assessment process,

learning activities and content are planned during the design phase. The objectives are clearly outlined and planned according to the subject matter and the main idea of the training highlighted. The learners' cognitive, psychomotor and affective behaviours are assessed. This phase must be logically and systematically delivered and meet the objectives outlines. An appropriate teaching style needs to be applied to the design phase detailing how the facilitator will implement the education training. Creating a mind map or flow chart will guide the facilitator in ensuring the content of the education training is adequate to meet the needs of the nursing staff (Forest, 2014).

2.8.3.3 Development

The in-service education programme is developed by the facilitator, who designs the education programme to the specific objectives to meet the learners' needs. The content of the education programme is delivered in writing, by the use of videos, quizzes, storyboards and multimedia presentations. The content of the education programme is pilot tested to conclude its effectiveness. This is followed by revising the pilot test and finalising the delivery of the education programme. The facilitator needs to ensure the period allocated to the training programme will be adequate to deliver the planned content (Forest, 2014).

2.8.3.4 Implementation

The facilitator delivers the education programme to the leaner. The learner provides constructive feedback on the effectiveness of the education programme, that they understood the content and if the objectives were met. The education programme is continuously modified to enhance its effectiveness and to ensure it successfully meets the needs of the nursing staff (Forest, 2014).

2.8.3.5 Evaluation

The education programme is evaluated and its success is measured on the feedback from the learners. Any modifications made to the current education programme after the evaluation are amended and implemented in the next presentation. Evaluating one's self is a constructive way to determine if the education programme was successful, noting if the staff attending the education programme engaged during the delivery of the session and reviewing the results can determine if the nursing staff retained the skills and knowledge the facilitator intended to deliver. All these will allow the facilitator to adapt different strategies to improve the education programme for better understanding.

According to Forest (2014), the following aspects are evaluated before the content of the education programme is delivered:

- If the outcomes of the content are appropriate for the audience.
- The relevance of the content of the information and its effectiveness in the clinical institution.
- The attitude of the nursing staff that will receive the information.
- The experience and competency levels of the staff.

2.9. THE ADULT LEARNER

According to Billings and Halstead (2009), adult learners display the specific characteristics for readiness to learn. Quinn and Hughes (2007), also describe adult learners as individuals who differ widely from each other. The following are characteristics of adult learners:

2.9.1 Mature self-concept

Generally, they are actively involved in the learning process and are able to identify their needs that are essential for the desired skills. Adults apply a learning style that is based on their own individual needs. This requires commitment in terms of time and money, which gives them control over their say in the content and the chosen direction of learning. Adult learners have the ability to utilise new opportunities to their advantage. However, their previous experiences and failures can have a negative impact creating barriers with the fear of failure. A supportive educator in this situation can provide additional motivation by selecting suitable learning strategies to build their self-confidence (Billings and Halstead, 2009).

2.9.2 Accumulated life-experiences

Accumulated life-experiences shape the learning behaviours of adult learners. The information provided by the facilitator allows the learner to link previous information and practically apply it, in a meaningful way, to current relevant information. Adult learning is further enhanced when they connect it to their own personal experiences.

2.9.3 Readiness to learn linked to internal motivating factors

The readiness to learn is dependent on an individual's internal motivation. The need to know and pre-existing knowledge gaps create an eagerness to learn. Having realistic goals and the intention to commit to learning for personal and professional growth are other motivating factors. Being able to utilise the information in a clinical setting is an achievement of the set goals in adult learners.

2.9.4 Having an immediate time perspective

The expected outcome of adult learners is to apply knowledge gained immediately and effectively. Adult learners tend to apply learned information in real life situations.

2.9.5 Being diverse in terms of their orientation to learning

Various learning styles need to be applied by the facilitator in order to deliver the required content to the learner. Experiential, collaborative and interactive learning styles are preferred strategies by adult learners.

2.10 RESPONSIBILITIES OF THE ADULT LEARNER

The adult learner assumes the responsibility to take control of learning. According to Muller (2009), the following are responsibilities that apply to the adult learner:

- A sense of responsibility and the eagerness to learn are characteristics displayed by the learner.
- Adequate preparation and demonstrating a positive behavioural outlook clearly indicates the responsibility assumed to participate actively in the learning process.
- The learner needs to utilise the knowledge gained in order to apply it in a significant manner to the area of his or her speciality in the clinical setting.
- The knowledge imparted to the learner needs to be done in a creative and effective way, giving the learner the ability and eagerness to absorb the information and retain it.

Learning and training takes place in the clinical setting to allow the learner to apply their theoretical knowledge into the practical skills, therefore further allowing the learner to integrate their skills in the clinical area in which they specialise. Before undertaking the

design of an education programme, the appropriate scientific principles need to be applied to ensure it is effective. A learning theory was underpinned in this study.

2.11 ADULT LEARNING THEORY

The nursing staff working in the operating theatre receiving area and surgical wards is adult learners and are responsible for setting their own learning objectives. The adult learner is an individual with unique characteristics in comparison to younger learners; every adult learner learns in unexpected ways. According to Gravett (2003), an adult learner is an individual who accepts the responsibility for their engagement in an educational activity. A common aspect noted in adult learners is their voluntary participation. The more satisfied a learner feels with accomplishing their set objectives, the more motivated they are to learn.

There are different learning theories of adult learning namely; andragogy, neuroscience, experiential learning, self-directed learning and transformational learning. The common goal for these theories is to allow one to create effective learning experiences for the adult learner.

In the current study the adult learning theory allowed the researcher to plan and develop the in-service education programme and implement the training that facilitated the learning process.

2.12 LEARNING THEORIES

Learning theories are structured to guide individuals with instructional strategies on how to learn Billings and Halstead (2009). There are different approaches to learning, with three

applicable learning theories that include behavioural, cognitive and constructivism. The researcher applied the constructivism learning theory in this study.

To underpin the constructivism theory effectively, the facilitator needs to present current issues to the learners. The relevance of the issue will be approached with a positive outlook allowing the learner to construct the knowledge gained and link it to their personal lives searching for meaning. There are varied methods on how technology can complement constructivism, namely the internet and software application tools which possess endless amounts of instructional information. **Figure 2.2** illustrates the Learning Theories.

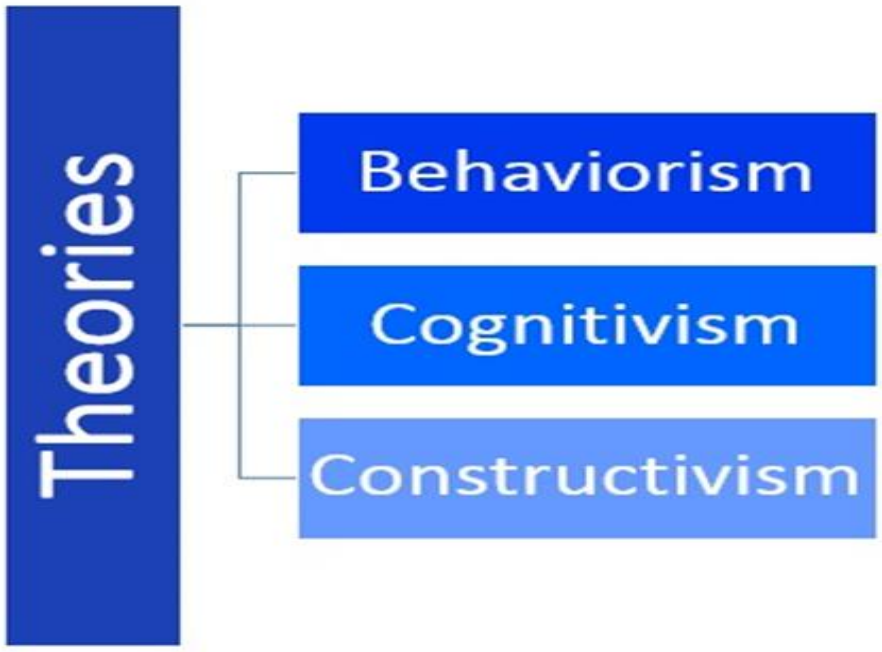

Figure 2.2: Learning Theories

Source: James. (2012). (Retrieved November 17, 2016 from http://thepeakperformancecenter.com/educational-learning/learning/theories)

A constructivism theory is based on how people learn. Individuals learn from knowledge obtained from their experiences. The constructivist facilitator guides and support learners

on how to assess their understanding of the information. Reflection on experiences creates complex ideas empowering the learner to establish sound resourceful capabilities to integrate the current knowledge. The learner is actively involved in the process of learning in the constructivism theory, which further allows the learner to grasp and internalise the knowledge gained guiding their understanding and promoting learning, (Retrieved November 17, 2016 from http://thepeakperformancecenter.com/educational-learning/learning/theories).

2.12.1 Benefits of Constructivism Theory

There are benefits to the constructivism learning theory, as it allows learners to actively engage and exchange ideas while evaluating their own contributions in an exceptionally appropriate manner. Being actively involved enables the exchange of information and ideas based on real life experiences, and make the learning experience more enjoyable. Constructivism focuses on understanding rather than merely memorising information.

2.13 THE ROLE OF THE CRITERIA IN THE AUDIT TOOL IN LINE WITH THE PRE-OPERATIVE ASSESSMENT RECORDS

The compliance of the completion of the following criterion indicated on the audit tool in line with the pre-operative assessment record was important to deliver quality patient care and implement changes to further improve gaps identified.

2.13.1 Pre-Operative Record

The pre-operative records contains patient information and details including administration of medication, vital signs and all relevant tests conducted and the results Williams and Stroh (2007). The applicable nursing staff must therefore ensure that the pre-operative

assessment record is correctly completed accompanied with their signature and designation. The tick list is completed acknowledging that all relevant information is recorded.

2.13.2 Patient Received in Theatre Noted in Implementation Record

Signing on the implementation recorded confirms that all records are completed upon arrival to the operating room receiving area. Any abnormalities are noted and the anaesthetist and surgeon are timeously informed.

2.13.3 Patient Sticker/Patient Name and File Number

The patient data on the sticker needs to correspond with that of the patient file. The data included on the patients' sticker was the patients' full name and surname, identity number, address, date of admission and attending doctor. Data from the patients' sticker is important as this is used by medical aids to capture correct coding for the surgical procedure as well as for labelling of the patients' specimen.

2.13.4 Allergy Sticker/Nil Known/High Risk

Allergies and risk factors need to be identified in order to eliminate and prevent adverse drug or contraindicated side effects. A careful and detailed patient medical and surgical history is obtained during the completion of the pre-operative assessment record, which guides the nurse in planning the management of complex medical problems that can occur during the course of the perioperative period.

Medication errors are among the common cause of harm to a patient if not accurately recorded. Any unfavourable reactions to previous anaesthesia, bloods or antimicrobial agents are noted during the completion of the pre-operative assessment record.

2.13.5 Informed Consent/Pre-Operative Record

An informed consent clarifies that the patient has confirmed that he or she understands the surgical procedure and the risks and benefits, and authorises that the surgical procedure can be performed; this is confirmed with the patient's signature, together with two witnesses.

Leclercq *et al*., (2010) provided insight into the informed consent, as well as how to enhance the quality of the process. The author discovered gaps between the theoretical and practical completion of the informed consent.

There is scarce literature on quality of the informed consent however; the purpose was to provide ways to improve the completion of the informed consent correctly in daily practice. Patients need to be educated on the risks and benefits regarding their voluntary participation in the informed consent process, as it is a legal record of the patients' comprehensive knowledge giving voluntary authorisation for the diagnostic or investigative procedure and surgical treatment. It is the attending surgeon's responsibility to provide the patient with the appropriate information and knowledge to prevent future litigation. Wrong side surgery can be catastrophic for the patient, their family, the attending surgeon and the admitting nurse.

In the current study, the researcher identified incompleteness of the booked procedure and the patients' description of the surgical procedure. The correct application and completion

of the pre-operative assessment record can eradicate numerous errors, one of them being wrong side surgery.

2.13.5.1 Purpose of Informed Consent

Patients have the right to make an informed decision on what can or cannot be done on their body and have the ability to make this decision without being influenced by others. The informed consent is obtained by the surgeon during consultation where the patient makes the informed decision for the conduction of the surgical procedure. The information of the surgical procedure is verbally exchanged with the patient, and the surgeon can use innovative ways of transferring this information in writing or using computerised technology (video clips) to ensure the patient fully understands the risks and benefits before making the informed decision. The presentation of information impacts on what the patient perceives and remembers. The researcher has noticed general oral information is poorly retained depending on the patients' age and other factors, such as culture and language barriers, that can inhibit interpretation of the informed consent.

The information on the consent form should have the following: the patient's full name, date of birth, age, sex and the hospital registration number. The booked procedure must be the same as the procedure described in the patient's own words, the patient's signature or that of a legal guardian or parent is required if the patient is under the age of 18 years old. A thumb print of the patient is acceptable if they are unable to sign and this needs to be accompanied by the patient's full name printed alongside the thumb print. In an emergency or life-threatening circumstance, a surgical procedure will be performed on a patient with the consent obtained by the attending surgeon.

Informed consent provides protection for the patient from unnecessary invasive surgical procedures. The attending surgeon and the nursing staff at the health institution are further protected against any legal claims concerning unauthorised surgical procedures that may be conducted on the patient without an informed consent. The consent confirms that the patient has made an informed decision for the authorisation of the surgical procedure.

Informed consent is a legal record reflecting that the patient has consented voluntarily for treatment, therefore determining what will be done to their body. Hall, Prochazka and Fink (2012) explain that informed consent is a legal form, which protects the patient from unwanted medical interventions, safeguarding the patient and allowing them to exercise their autonomous rights in decision making on the proposed medical intervention to maintain their health status.

Hall, Prochazka and Fink (2012) convey the purpose of the informed consent is to respect the patients' autonomy toward the desired result of the intended treatment, therefore allowing the ethical paradigm to shift in the decision making process toward the patient rather than the surgeon.

2.13.5.2 Factors that Affect Obtaining the Informed Consent

Hall, Prochazka and Fink (2012) highlight a few factors that affect obtaining the informed consent: patient comprehension, patient autonomy, patient use of disclosed information and the demands placed on the healthcare providers to meet the patients' needs with minimal disclosure of information.

2.13.5.2.1 Patient Comprehension

It is important that the patient fully understands what the surgical procedure entails, the risks and the benefits and can comprehend their acknowledgement on the informed consent record. Patient comprehension, according to Hall, Prochazka and Fink (2012), is related to the patient's age, education level, intelligence, cognitive function and anxiety.

2.13.5.2.2 Patients' Use of Disclosed Information

Hall, Prochazka and Fink (2012) convey that based on theory, patients will use the information disclosed in rational and autonomous ways. The authors express that while some patients base their decisions on intuition others make rational decisions while considering the risks and benefits.

2.13.5.2.3 Patient Autonomy

Patients exercise their rights by making an autonomous decision and signing the informed consent. Mckneally and Martin (2000) focus less on the decision making process and more on trust, allowing them to take a "leap of faith" based on the care entrusted in the surgeon.

2.13.5.3 Future Improvements of the Informed Consent

Incomplete informed consent and inaccurate information does not justify the patient's authorisation for the surgical procedure. This leads to medical legal claims, which are due to failure in communication when completing the informed consent. In order to improve the informed consent process and the correct completion thereof, nursing staff need to improve their skills in this area. This can be achieved by using effective methods and ways of communicating to ensure relevant information is recorded on the informed consent.

Patients' level of knowledge needs to be checked to ensure that information is transferred correctly before the informed consent is obtained.

The patient needs to understand that he/she is in charge and make the final decision for the surgical procedure. Leclercq *et al*., (2010) included the following practice implication for an adequate informed consent process: ensure that patients and doctors are aware of the importance of an adequate informed consent; the use of an interactive computer to guide the doctor when imparting information to the patient to understand the surgical procedure; to check the patient understands the risks and benefits involved; the correct informed consent record is used and confirmed with the booked procedure and recorded in the patient's own words; check that the informed consent is correctly completed and kept in the patient's file and easily accessible; provide the patient with adequate local information rather than just relying on one's clinical insight; clarify the patients understanding of the planned operation by asking the patient to repeat this information.

The attending surgeon provides the patient with adequate information with clear and simple information regarding the following: the nature of the proposed surgical procedure; the purpose of the surgical procedure; the risks and benefits and the possible complications intra-operatively and post-operatively; the treatment options available; the pre-operative assessment regarding current medication, medical and surgical history and nil per mouth as this can impact on the outcome of the surgical procedure.

2.13.6 Patient Description of Procedure - Own Words (and/or Informed Consent)

The patient confirms that he/she has agreed to the surgical procedure and describes the understanding of the surgical procedure in his/her own words. Clarke, Johnston and Finely

(2007) examined patient records over a 30-month period. The errors identified were near miss events involving wrong patient, wrong procedure, wrong side and wrong part. The most common procedure incorrectly operated on was the lower extremities. An important note on this study was to ensure verification of the patient's consent at multiple points before making the surgical incision.

2.13.7 Is the Booked Procedure the Same as the Patients' Description?

The booked surgical procedure must correlate with the patient's description and this is further confirmed with the informed consent.

2.13.8 Pre-medication Administered

Pre-medication is administered to patients prior to anaesthesia to achieve optimal conditions for the surgical procedure. Pre-medications can be administered intravenously at induction or during anaesthesia. The anaesthetist prescribes the pre-medication after taking the following factors into account: the age and weight of the patient; physical status; previous pre-medication history; allergies; the scheduled surgical procedure; the patient's length of stay in the hospital (Williams and Stroh, 2007). Williams and Stroh (2007) identifies the main objectives of pre-medication as helping to alleviate anxiety, promoting amnesia, reducing secretions, achieving sedation, alleviating pain and fear, and providing analgesia. It is imperative that the nurse administering the pre-medication confirms the time, dose and route on the prescription chart. The nurse then signs the prescription chart and completes an entry in the patient's implementation record.

The administration of pre-medication can have side effects, such as drowsiness and confusion, therefore the patient is observed for any possible reaction to the pre-medication.

If the patient presents with any adverse drug reaction this is brought to the immediate attention of the anaesthetist.

2.13.9 Patient Kept Nil Per Mouth

Patients are kept nil per mouth, meaning nothing to eat and drink 8 to10 hours prior to a surgical procedure. Therefore, careful history when obtaining information from a patient on admission and completing the pre-operative assessment record is important. The detailed data in the patient's medication history provides the nurse with vital information about the patient's condition and the need to consume any medication orally. In some cases, the surgeon will inform the patient to have clear fluids 3 to 4 hours before the surgical procedure, and in elderly and dehydrated patients, IV fluids are administered intravenously.

2.13.10 Identification Band Applied

A patient is accompanied by a staff member to the operating theatre receiving area, where they are identified in the presence of the nurse receiving him/her in the receiving area. The nurse clarifies the patient's identification against the identification band and the patient's records and further asks the patient to state their name, date of birth and surgical procedure. The patient also clarifies the side and site of the procedure to be conducted and this is confirmed against a signed informed consent. This ensures the correct patient is booked for the correct surgical procedure.

Wrong side surgery has become a common error due to poor patient identification. Patients are identified with the pre-operative assessment record, which is checked and clarified against their identification band.

Failure to identify patients correctly is constant throughout the healthcare industry. This is identified with medication errors, transfusion errors and wrong patient procedures. The United Kingdom National Patient Safety Agency reported 236 near miss related events between November 2003 and July 2005, due to missing wristbands or those that had incorrect patient information. In order to reduce errors, proper patient identification is important prior to any medical intervention (Lallmohamed, 2008).

In addition to this, Robertson (2008) stated that the most important safety check was to ensure that the right patient receives the right treatment every time. The National Safety Goals for 2009, released by the Joint Commission, was to "Improve the accuracy of patient identification." The aim of the goals was verbalising the intention of patient identification, helping to reassure an already anxious patient by further informing them that the identification process was to ensure they would be properly taken care of.

2.13.11 Pre-operative Check Done

The pre-operative check is done to ensure all the areas on the pre-operative assessment record are completed and entered correctly upon receiving the patient in the operating theatre receiving area.

2.13.12 Signatures with Handover

This area indicates that the patients' records are completed upon arrival in the operating theatre receiving area. The nursing staff in the operating receiving area clarifies this by completing and signing the implementation record.

2.13.13 Fluid Balance Record

Accurate recording, monitoring and assessment of fluid balance in a surgical patient are important to identify deterioration in the patient's condition, e.g. multiple organ failure. The Registered and the Enrolled Nurse are responsible for the completion of the fluid balance chart. Incorrect completion of the fluid balance record can present the patient with negative consequences. Transfusion errors can occur if the wrong transfusion, be it blood or intravenous fluid, is administered to the wrong patient. Fluid mismanagement, if not recorded correctly on the fluid balance chart increases the chance of an adverse event should the patient have an unfavourable reaction.

IV therapy is administered to patients to either prevent and/or correct their fluid or electrolyte status ensuring that the patient is neither dehydrated nor overhydrated. The administration of IV fluids may be due to the patient having the following problems: swallowing problems, gastrointestinal dysfunction, fluid deficit due to an illness or injury and patients scheduled for a surgical procedure and therefore need to remain nil per mouth (not to consume anything orally). The patients are carefully assessed prior to administration of any IV fluid as the amount, rate and composition of the IV fluid needs to be carefully calculated. A report by the 1999 National Confidential Enquiry into Perioperative Deaths (NCEPOD) Schubert (2003) highlighted a significant number of patient deaths due to incorrect infusion administration of either too much or too little. This report recommended that fluid prescribing be given a drug prescribing status; this recommendation has not been applied. Despite inappropriate fluid therapy resulting in as many as 1 in 5 patient complications and morbidity, it is rarely reported. Most likely areas where errors occur in prescribing IV fluids are in emergency departments, acute admissions and general medical and surgical wards. Areas where errors are less likely to

occur are operating theatres and critical care units, due to staff having more experience in prescribing IV fluids.

Sweeney, McKendry and Bedi (2013) performed a study, which concluded that IV therapy has serious harmful effects that can lead to a patient's death. Therefore it should only be applied if necessary and the patient must be monitored both clinically and biochemically. Careful charting of IV fluids is just as important as a prescribed drug or the administration of oxygen.

The article by Shepherd (2011), a tutor nurse at Florence Nightingale School of Nursing and Midwifery, Kings College, London, discusses the importance and health implications of dehydration and over-hydration and the reasons for accurate measurement of fluid balance. Abnormalities of over-hydration and dehydration can be detected if accurate fluid balance record is maintained. , which allows the nurse to deliver the appropriate care to the patient.

Roets, Aucamp and de Beer (2002) conducted a study to evaluate if the important parameters were recorded on the checklist. The degree of the completeness and legibility of the records were also noted in the study. The authors concluded that the fluid balance was inadequately recorded, while the allergies were indicated on most of the records. Roets, Aucamp and de Beer (2002) recommended the use of a comprehensive and easily useable document to minimise errors and negligence.

Wrong patient identification can lead to other forms of adverse events, such as administering wrong medication to the wrong patient or incorrect transfusion in the wrong

patient (blood or intravenous fluid); noted as a human error, it can lead to varying consequences on the patient, such as increased length of hospital stay. Additional to the National Safety Goals, 2009 released in 2009, was the goal to eliminate errors when administering blood transfusions. When blood transfusion is administered, two identifiers are required for confirmation that it is the correct patient and the correct transfusion.

Ling *et al*., (2011) implemented a new format on the document for recording intake and output to increase the compliance in completion, which was found to be more practical and user friendly as their study identified areas of incompleteness in charting. A pre-implementation and post-implementation audit was conducted which showed a significant improvement in the compliance of completion of the records. Calculation errors were often picked up by Specialists and Doctors regarding the totalling of the intake and output. Periodic briefing sessions were suggested and the new format be introduced at an early stage to nursing students in the nursing colleges. The study based their research questions to identify knowledge gaps that resulted in poor compliance in completion of the intake and output recording.

A recent study conducted by Tang and Lee (2010) identified calculation errors, inconsistency and inaccurate recording resulted from the lack of education in the nursing staff. A prospective survey was conducted that provided evidence that clinical experience did not influence the correct calculation on recording the values on the intake and output record.

It is the responsibility of the registered nurse to complete or supervise the completion fluid balance record. Patients who have an IV should be monitored and this needs to be identified and recorded in the patients' records.

Providing accurate data of the administration of IV fluid is a fundamental standard of practice, as it forms baseline patient information in achieving physiological patient stability, but it is noted for being inaccurate and incomplete. Poor recording of the fluid balance record can have an impact on the patient's stay in hospital.

A quantitative study conducted by Diacon and Bell (2014) concluded that the majority of fluid balance records were inaccurately calculated. A 24-hour observation chart is used to record the patient's intake and output and plays an important role in the management of the patient. According to SANC (Retrieved February 15, 2017 from http://www.sanc.co.za/) the South African Regulation of Nurses, the Scope of Practice of the Registered Nurse forms part of fluid balance monitoring, and he/she is responsible for accurate recording and completion of the fluid balance records.

There are principles and protocols in place for the administration of intravenous fluids, NICE Clinical Guidelines (2013) (Retrieved February 17, 2017 from https://www.nice.org.uk/guidance/cg174/documents/intravenous-fluid-therapy-nice-version2). Administration of intravenous fluid is for the following reasons:

- Fluid resuscitation

Intravenous fluid is administered to restore the electrolyte balance to vital organs caused by bleeding and loss of plasma from the gastrointestinal tract.

- Routine maintenance

Continuous IV fluid may be required for routine maintenance for complex fluid or electrolyte problems in patients. IV fluids are administered to patients who present with abnormal losses or redistribution issues and cannot meet their normal fluid and electrolyte needs enteral or orally.

- Replacement

Patients may require fluid replacement due to loss from intravascular or other fluid compartments, usually from the gastro-intestinal tract or urinary tract. The administration of the replacement fluid is done slowly and with caution to prevent potential risks.

- Redistribution

Fluid and electrolyte losses and changes in fluid distribution are common in patients who are critically ill, post major surgery or septic. The development of oedema is possible from the sodium and water excess.

The NICE Clinical Guidelines (2013) further highlight the following four areas that underpin the administration of intravenous fluid:

- Physiology of fluid balance.
- The pathophysiological effects of fluid balance.
- Approaches utilised to assess IV fluid needs.
- Properties of available IV fluids.

Roets, Aucamp and de Beer (2002) discovered, on data analysis, that only 45.2% of the 89.2% of respondents had an indication of the amount of fluid that remained in the vacolitre.

The IV site is checked for swelling and infiltration, as this can limit the flow of the IV fluid. Limited or no flow can result in the patient not being able to receive the appropriate doses of medication or the prescribed IV fluid timeously.

2.14. IMPROVING QUALITY OF THE COMPLETION OF THE PRE-OPERATIVE ASSESSMENT RECORDS

Makary *et al*., (2006) highlight the importance of teamwork to enhance patient safety. The authors convey that poor communication can lead to breakdown in teamwork, which can have catastrophic consequences and influence on patient safety.

Further breakdown in communication can lead to wrong side operations being conducted on patients and adverse and sentinel events. Wrong side surgery can be prevented by adhering to protocols and guidelines Makary *et al*., (2006). The development and implementation of protocols and guidelines must have clear and specific instructions and be a collaborative effort of the surgical team as well as the nursing staff admitting the patient. The fatal chain of events can have a detrimental effect on the life of the patient as well as the career of the anaesthetist, surgeon and nursing staff. Therefore, mandatory use, globally, of the WHO surgical safety checklist is effective in minimising wrong side surgery.

2.15. SUMMARY

This chapter explored current and relevant literature based on the purpose of this study. The literature presented the use of the surgical safety checklist and the non-compliance in the completion of the pre-operative assessment record and the impact they had on patient

safety. In this chapter, the literature review was discussed on completion of the pre-operative assessment records, relevant learning theory and the instructional design underpinned by the ADDIE Model. Researchers are still trying to find ways to increase the use of the surgical safety checklist and improve compliance in completion of the pre-operative assessment record to maintain patient safety. The next chapter will outline and discuss the methodology used to conduct this research.

CHAPTER THREE

RESEARCH DESIGN AND METHODS

3.1 INTRODUCTION

Chapter 3 describes the research design and methods used to review the records, including the research setting, population and sample used in this study, and discusses the data collection process and the data collection tool (Appendix G), its validity and reliability. This chapter focuses on the pre-test results (Appendix H) and implementation of the in-service education programme. The evaluation of the in-service education programme will also be discussed in this chapter.

3.2 RESEARCH DESIGN

The researcher used two quantitative methods, a one-group pre-test-post-test study to review the records and a survey to evaluate the respondents' satisfaction of the in-service education programme. To evaluate the education programme, the researcher used a questionnaire (Appendix P) which will be described in Chapter 5. A descriptive survey design was used to describe the satisfaction of the respondents' evaluation of the in-service education programme. According to Burns and Grove (2013) a questionnaire is a self-report form designed to gather information from a respondent's written response. Unlike an interview a questionnaire contains less depth but is similar to the information gathered during an interview (Burns and Grove, 2013). The chosen design, a one-group pre-test-post-test, is quantitative and quasi-experimental. Burns and Grove (2013) define research design as a blue print for conducting studies that maximises control over factors that could interfere with the validity of the findings. A research design is the researchers overall plan

for obtaining answers to the research questions that guide the study (Polit and Beck, 2012). De Vos, Strydom, Fouche' and Delport (2011) further states that a research design is a blue print or a detailed plan for how a research study is conducted. The chosen design conducted by the researcher was quantitative to address the research problem and achieve the research objectives in order to improve the compliance of completion of the pre-operative assessment records.

3.3 QUANTITATIVE RESEARCH

Quantitative research, according to Burns and Grove (2013), is described as the systematic process of obtaining numerical data in order to understand the aspects of the world. Quantitative design allows the researcher too systematically and logically progress with a specific plan of action to focus on a solution of the research problem (Polit and Beck, 2012). Quantitative designs present results numerically in percentages and frequencies. The researcher applied the quantitative research method because of the purpose and aim of the study, which was to review the pre-operative assessment records, develop and implement an in-service education programme for nurses based on the gaps identified in completion, and to review the pre-operative assessment records completed after the in-service education programme. The researcher obtained quantitative data using an approved structured audit tool (Appendix G) in line with the pre-operative assessment record, which was statistically analysed.

Quantitative research methods are classified into two main classes, quasi-experimental designs and experimental designs (Burns and Grove, 2013). Experimental designs can be further distinguished into three main categories, pre-experimental, true experimental and quasi-experimental. The researcher applied a quasi-experimental design for this study.

Major strengths of quantitative research methods are used for various control strategies. Biases are minimised with control by imposing conditions on the research situation and therefore maximising precision and validity (Burns and Grove, 2013). As data is precise, consistent and reliable, it can be easy to analyse (Retrieved on July 23, 2017 from http://betterthesis.dk/research-methods/lesson-1different-approaches-to-research/strengths-and-limitations).

Burns and Grove (2013) explain a common limitation in quantitative research methods is that moral and ethical questions cannot be answered using the research. Another limitation is that difficulty can be experienced in accessing secondary data as well as accessing available data, creating unexplainable complex issues due to robust data (Retrieved on July 23, 2017 from http://betterthesis.dk/research-methods/lesson-1different-approaches-to-research/strengths-and-limitations).

3.4 QUASI-EXPERIMENTAL DESIGN

Quasi-experimental design is when the researcher aims to establish the cause-effect relationships. Brink (2012) further states that quasi-experimental design is similar to a true experiment, as there is either a lack of control over the experimental situation or randomisation. The researcher is not in a position to assign participants randomly to either a control or an experimental group. Creswell (2014) explains that researchers use intact groups either because of the availability of participants or the setting, which limits the researcher from forming artificial groups. A quasi-experiment was applied in this study at two private hospitals using a one-group pre-test-post-test design, which allowed the researcher to collect baseline data, apply an experimental treatment and collect data after treatment was applied. The outcome of the treatment was to assist the improvement of the

compliance of completion of the pre-operative assessment records. The treatment in this study took place in the form of an in-service education programme (Appendix M). The in-service education programme was the treatment in the current study. The researcher explored the respondents' satisfaction of the in-service training by gathering data with a questionnaire. Burns and Grove (2013) state surveys serve to be important source of data and used with many designs such as descriptive and quasi-experimental studies similarly in the current study.

According to Polit and Beck (2012), quasi-experimental designs have their strengths as well as weaknesses. Quasi-experimental designs are practical and this is one of their major strengths. There is also a degree of control over the research, as quasi-experimental designs allow for a broader group of people to be assigned because not all participants are willing to allow the relinquishment of their treatment. The results may be less conclusive due to the implications of the generalisability of the results (Polit and Beck, 2012).

The researcher needs to ensure the necessary steps are taken to counteract the weaknesses encountered when interpreting results using a quasi-experimental design, as there is an erroneous risk of incorrectly interpreting the results obtained (Polit and Beck, 2012). In this study, the researcher hopes to improve the compliance of completion of the pre-operative assessment records following the in-service education programme. The conclusions derived from a quasi-experimental design depends on human judgement rather than objective criteria Polit and Beck (2012) resulting in less compelling cause-effect interferences. Polit and Beck (2012) further note another weakness in quasi-experimental designs is that the researcher is unable to manipulate the independent variable or assign subjects randomly to treatment groups. Quasi-experimental design allows for the search of

knowledge and examination of the casualties making it impossible to control the study design, therefore action needs to be taken in order to control the threats and validity of the research findings (Burns and Grove, 2013).

3.5 ONE-GROUP PRE-TEST-POST-TEST DESIGN

One-group pre-test-post-test designs are another commonly used pre-experimental design (Burns and Grove, 2013). According to Polit and Beck (2012), one-group pre-test-post-test involves a collection of baseline data twice, before and after an intervention, allowing the researcher to examine a change following the intervention.

According to Polit and Beck (2012), one-group pre-tests-post-tests designs present strengths as well as weaknesses, where events can cause changes in the scores of the pre-test and post-test that could result in alterations in the post-test responses. Polit and Beck (2012) further state that the changes in the post-test scores can be further altered by the maturation process, administration of the pre-test and changes in the instrumentation.

The researcher applied a one-group pre-test-post-test for this study and collected baseline data at two points, one before (Appendix H) the in-service education programme and one after (Appendix I) the in-service education programme. The in-service education programme was designed based on the data obtained from the analysis of the pre-test results. An audit tool (Appendix G) collected the pre-test and post-test data. A simple random sampling method obtained data from (n=187) pre-operative assessment patient records, which were scrutinised against the 16 core elements in line with the audit tool for completion of written details. The post-test data provided the researcher with relevant scores to determine if the in-service education programme improved the competencies of

the nursing staff in completing the pre-operative assessment records. During this study, there was neither a control group nor comparison group. The results of the in-service education programme were the presumed outcome of this study, which was to improve the completion of the pre-operative assessment records.

In this study, the post-test may be influenced by the in-service education programme, as the post-test scores could be altered due to the nursing staff being aware of the expected outcome of the correct completion of the pre-operative assessment records. The researcher's intent of the post-test was to assess if there was a knowledge improvement of the nursing staff that were responsible for completing the pre-operative assessment records. The in-service education programme included a half hour PowerPoint presentation with video clips and a 10-minute session for the nursing staff to complete a questionnaire (Appendix P) based on the satisfaction of the in-service education programme.

3.6 RESEARCH SETTING

A research setting, as described by Polit and Beck (2012), is a place where data were collected. This study was conducted at two hospitals in the private sector in Johannesburg, Gauteng, South Africa. Both private hospitals conduct a varied complexity of specialised surgical procedures. Patients admitted to Hospitals A and B is national and international; overseas patients who are visiting the country may require medical attention or emergency surgical procedures.

Hospital A has 379 beds, 10 operating theatres, 106-bed surgical wards and a 19-bed day ward. The surgical procedures scheduled in Hospital A include general, gynaecology, neurology (including spinal procedures), orthopaedic (including joint replacements),

urology, plastic, ophthalmology, ENT (ear, nose and throat procedures), maxillofacial and vascular. On average, 900 patients are admitted per month for surgical procedures.

Hospital B comprises of 214 beds, 20-bed surgical and day wards. Hospital B has eight operating theatres, which includes general, gynaecology, neurology (including spinal procedures), orthopaedic (including joint replacements), urology, plastic, ophthalmology, ENT procedures, maxillofacial, vascular, catheterisation lab, cardiac and cardio-thoracic surgery. Hospital B conducts approximately 900 surgical procedures every month.

Both hospitals have specialised nursing units that include the following: 24 hours Crisis Intervention Centre, 24 hours Emergency Centre, Neonatal and Paediatric ICU and six-bed High Care Orthopaedic Unit. They further accommodate the community by providing specialised clinics such as Antenatal Clinic, Baby Wellness and Immunisation Clinic, Breast-feeding Clinic, Pre-admission Centre as well as a Sleep Clinic. The supplementary services offered include computed tomography (CT) scans, Fertility Treatment, magnetic resonance imaging (MRI), Pathology and Radiology services and a Renal Dialysis Unit. All of these units are staffed with qualified personnel who are equipped with the relevant knowledge and skills to perform their tasks in a professional and organised manner.

Patients are admitted to the surgical wards prior to a surgical procedure. During this period, the pre-operative assessment records are completed by the Registered and Enrolled Nurse in the surgical and day wards. Additional to this, the surgical, day ward and operating theatre receiving areas have pupil Enrolled Nurses, Bridging Student and Enrolled Nursing Auxiliaries. The nursing staff admitting the surgical patient in the surgical and day wards and receiving the surgical patient in the operating theatre receiving area are qualified

Registered and Enrolled Nurses. The Registered and Enrolled Nurses receive the surgical patient awaiting the surgical procedure in the operating room receiving area.

3.7 UNIT OF ANALYSIS

De Vos, Strydom, Fouche' and Delport (2011) describes unit of analysis as objects, specific elements, persons or events whose characteristics the researcher intends to describe after data collection. In the current study, the unit of analysis consisted of the pre-operative assessment records (n=187) in the pre-and-post-test. According to Brink (2012) the population is referred to as the entire group of persons that is of interest to the researcher. The population that attended the in-service education programme were Registered Nurses, Enrolled Nurses, Enrolled Nursing Auxiliaries and Student Nurses from both hospital A and B (n=45). The population will be discussed in Chapter 5.

3.8 SAMPLING

Sampling plays a vital part of the research process and is a process of selecting subjects for the research that will be the representative of the entire population (Polit and Beck, 2012). Prior to selecting the sampling method, the researcher needs to take into consideration the research method, the source that will provide the necessary data and the setting in which the sampling will take place. The strategies employed will influence the results and the researcher's interpretation of the results. For this study, the researcher used a probability sampling method, simple random sampling, as it allowed the researcher to collect the necessary data to answer the research questions. The simple random sampling method provides an unbiased representation of a group and is a fair method of selecting samples from a larger population (Creswell, 2014). Creswell (2014) states the researcher selects units during simple random sampling that allows individuals an equal opportunity of being

selected. This method of sampling allowed the researcher to ensure an equal chance of the patients' pre-operative assessment records being selected for the sample.

The sample was determined by using the Raosoft calculator, using a 95% confidence level and a 5% margin error. The population for the current study was (n=360) patient pre-operative assessment records of which the sample size of (n=187) was drawn and audited in the pre-test and the post-test. The researcher audited the pre-operative assessment records in the pre-and post-test until the desired sample was reached (n=187).Three hundred and seventy four pre-operative assessment records were audited in total during pre-and post-test this study. The researcher did not have control over the selection of the sample size of the pre-operative assessment records at both private hospitals. An email correspondence was sent to both private hospitals after receiving ethical clearance to conduct the study at both private hospitals. The selection process was done by the filing department at both hospitals and. The researcher audited the selected number of pre-operative assessment records.

To clarify the sample size in the current study the researcher justifies this according to Creswell (2014:161) "bias in the population will be equally distributed among the chosen people".

According to Saunders, Lewis and Thornhill (2009), non-probability sampling method of a participant being selected from the total population is impossible, therefore making it difficult to answer the research question. For the current study the respondents' that fulfilled the inclusion criteria for the in-service education programme were Registered Nurses, Enrolled Nurses, Enrolled Nursing Auxiliaries and Student Nurses.

3.9 DATA COLLECTION

According to Burns and Grove (2013), data collection in a quantitative study allows for systematic methods of gathering numerical data that addresses the objectives and purpose of the study. The researcher collected data from the pre-operative assessment records of patients using a retrospective records review. Data were gathered from the respondents' on their opinion of the in-service education with a self-administered questionnaire, which the researcher handed out personally at both hospitals. According to Burns and Grove (2013), a retrospective record review is utilised to examine the effects of an intervention. In this study, the retrospective record review involved collecting and analysing information from the records of patients who had been admitted in the last year. The researcher personally collected the data using the audit tool (Appendix G). Data collection took place over a period of two months in the pre-test and three months in the post-test. During the data collection process the selection of the pre-operative assessment records was done by the filing department at both private hospitals and therefore this resulted in the selection of 57 (n=57) from Hospital A and 130 (n=130) from Hospital B during the data collection process.

3.9.1 Data collection method

The data collection for this study took place between 07h00 and 16h00 on weekdays during September and October 2016 for the pre-test and for the post-test, between May and June 2017. Data were collected using an approved audit tool (Appendix G), which was currently in use in the two private hospital groups included in this study. A simple random sampling method was used during the pre-test and post-test audit of the pre-operative assessment records. Due to the nature of the study, informed consent was not obtained, as there were no direct participants involved during the data collection process of the patients'

pre-operative assessment records. The patients' identification was excluded during the audit and substituted with a factitious number. The researcher was granted permission from the ethics committee (Appendix A) and further permission was granted to collect data from Hospitals A and B (Appendix D and Appendix E) in this study. The data were collected and coded and entered onto a spread sheet (Appendix L and Appendix O) and transferred to Statistical analysis software Stata, version 14 SE to manage and analyse the data. The researcher audited each pre-operative assessment record of patients that had a surgical procedure under anaesthesia against the instrument. The researcher scanned the three sections of the pre-operative assessment record for completeness. The data collection process was done in two days between both hospitals. After the data were collected over the two consecutive months the researcher finalised the results in preparation for data analysis.

3.9.2 Instrument

The researcher did not design a new instrument but used a current audit tool (Appendix G) which has been used for the past five years in the two hospitals included in this study. The audit tool was aligned with the pre-operative assessment records in use. The instrument had been tested for reliability and validity and formed part of the Council for Health Service Accreditation of Southern Africa (COSAHSA) audit for Private Hospital accreditation.

The instrument comprised five sections, the pre-operative record, fluid balance record, intra-operative record and post-operative checklist, recovery room record and recovery observation record. For the purpose of this study the researcher focused only on three sections, the pre-operative record, informed consent (pre-operative record) and the fluid

balance record, as the study was conducted on the completion of the pre-operative assessment records of patients' who were scheduled for surgery. There were criteria indicators for each section of the instrument, which allowed the researcher to obtain data on the completeness of the pre-operative assessment records within the given period of data collection.

The instrument was divided into three sections. Sixteen points were allocated to the pre-operative record instrument.

Section 1:

Pre-Operative Record:

- Patient received in theatre noted in implementation record.
- Patient Sticker/Patient name and file number.
- Allergy Sticker/Nil known/High risk.

Section 2:

Informed Consent/Pre-Operative Record:

- Patient description of procedure – own words (and or Informed Consent)
- Is the booked procedure same as the patients' description?
- Pre-medication administered.
- Patient kept nil per mouth.
- Identification band applied.
- Pre-operative check done.
- Signature with hand over.

Section 3:

Fluid Balance Record:

- Did patient have an IV?
- Fluid name.
- Starting and ending time.
- Volume started/Volume complete.
- Running total.
- IV site checked.

The researcher used an instrument that was a self-administered questionnaire to gather data from the respondents' satisfaction of the in-service education programme which will be discussed in Chapter 5.

3.10 DATA ANALYSIS

Data analysis, according to Polit and Beck (2012), can be explained as the measurement of the relationship between quantitative information that is analysed through statistical procedures. Burns and Grove (2013) state that data collection is a systematic method of gathering information that is relevant to the research question. The researcher captured the data on an excel spreadsheet. In this study the data gathered from the respondents' responses were presented by means of descriptive statistics and frequency tables in chapter 5. The quantitative data of the respondents' satisfaction of the in-service-education programme was handled using descriptive statistics.

The statistical tests described below were used during the analysis of the data. **Descriptive statistics** were used to summarise and describe the data collected during the pre-and post-

test of this study. According to Polit and Beck (2012), descriptive statistics present analysis in averages and percentages. Statistical analysis software Stata, version 14 SE, was used to manage and analyse the data. In data management, data were checked for consistencies, duplicates, and missing values. Proportionality tests at the 95% confidence intervals were employed to statistically significantly compare the percentage distributions of criteria on pre-operative assessment records for the pre-test-post-test for both hospitals and the educational programme. The data analysis was done with the assistance of a statistician. All results were presented in number percentages.

In order to test significant difference between the variables, the **Chi-Square** test, a non-parametric statistical test used. The Chi-Square test checks for differences between observed and expected values. The following are assumptions for the Chi-Square tests:

- The samples must be independent.
- An expected frequency in any cell of less than 1 must not occur in more than 20% of the cells (Bothma, Greef, Mulaudzi and Wright, 2015).

In the current study the **Chi-Square** test was used to test if there was a significant difference in proportions across the levels of the variables of the completeness of the pre-operative assessment records between the pre-test audit and the post-test audit.

A **Z-test** is used for the difference between two proportions that are performed to check whether there are significant differences between the proportions of correct entries in the pre-and post-in-service education training. In the current study the Z-test was used to compare the population mean to determine if the there was a significant difference.

All data were quantified and the numerical data were statistically analysed with the assistance sought from a statistician from the Medical Research Council. This method

enabled the researcher to organise and present data in a systematic manner, thus providing sufficient insight to this study.

Frequency distributions are used to organise numeric data systematically. Values are arranged from lowest to highest concurrently, with a count of the number of times each value was obtained (Polit and Beck, 2012).

- Frequency tables were used to display data in this study.
- Measures of the central tendency are part of the descriptive statistics, and are the mean, median and mode Burns and Grove (2013). In this study, the central tendency was measured by analysing the mean scores. According to Polit and Beck (2012), the mean scores are a sum of all the scores divided by a number of scores, which is referred to as the average, therefore making the mean score the most stable index of central tendency (Polit and Beck, 2012).

The researcher processed the audited pre-operative assessment records and compiled tables, with percentages, to interpret the data to present information that was incomplete during the preparation of the patient before surgical procedure under anaesthesia.

The completeness of the pre-operative assessment records in respect of legibility was also noted. Baseline data, obtained from the pre-operative assessment records that were audited, consisted of patients that had a wide variety of surgical procedures under anaesthesia. The results of the pre-test audit and post-test audit are presented in frequency tables.

3.11 PROCEDURE

3.11.1 Step one

The researcher obtained baseline data from the pre-test that was conducted incorporating a retrospective record review of (n=187) pre-operative assessment records of patients who had had a surgical procedure over the two-month period between September 2016 and October 2016 at both private hospitals. The audit tool (Appendix G) used during the data collection process was in line with the pre-operative assessment records. The files of patients who underwent a surgical procedure at both private hospitals were retrieved from the archive with the consent of the hospital management.

3.11.2 Step two

Burns and Grove (2013) state that an intervention can be delivered in a physiological, psychological or an educational form. Burns and Grove (2013) mention that the intervention must be designed to meet the outcomes of the study, providing consistency in the intervention. The in-service education programme (Appendix M), underpinned by the ADDIE Model, was delivered at both private hospitals included in this study for nursing staff, on both day and night shift, working in the surgical wards and the operating theatre receiving area. The purpose of the in-service educational programme was to guide the nursing staff to improve their responsibilities in completing the pre-operative assessment records ensuring it is in line with the hospitals guidelines and policy. It was also to change the nursing staff current practice in correctly completing the pre-operative assessment records, as this was a concern to improve patient safety. The theoretical content of the in-service education programme was based on the findings from the pre-test audit results.

The nursing staff was invited to attend the in-service education programme upon receiving an information letter (Appendix J) outlining the purpose of this study. An arrangement was scheduled to consult the Unit Managers of the surgical wards and the operating theatre receiving areas.

The in-service education programme was delivered over five days in February 2017. The training was scheduled for a convenient time in the surgical wards and operating theatres of both hospitals, and was not to interrupt the routine of the staff daily tasks. The managers were informed that the in-service education programme would be stopped should the staff be required to attend to an emergency. The in-service education programme took the form of a workshop and included, but was not limited to, failures identified with the elements of the audit tool. A power point presentation and video clips regarding the guidelines and importance of adherence when completing the pre-operative assessment records were included in the in-service education programme. The information supplied was to guide the nursing staff with sufficient knowledge, and the visual experience highlighted the importance of patient safety during their surgical journey. The researcher reserved a half hour time slot for the delivery of the in-service education programme.

An attendance register was signed by the nursing staff attending the in-service education programme. In order to appraise the influence and effectiveness of the in-service education programme, the researcher gave the nursing staff a questionnaire (Appendix P) to complete. This questionnaire was to provide feedback to the researcher on how they perceived the in-service education programme helped to develop their skills to improve patient safety by correctly completing the per-operative assessment record and their overall satisfaction of the programme.

3.11.3 Step three

A post-test was done of the pre-operative assessment records three months after the in-service education programme. A second retrospective record review (post-test audit) was conducted during May and June 2017 (Appendix I), using the same audit tool as for the pre-test (Appendix H) to evaluate the effectiveness the in-service educational programme had on the nursing staff and their compliance in improving the completion of the pre-operative assessment records. The sample size of patient records audited was (n=187). In order to ensure reliability the researcher was the only data collector for the pre-test and post-test. The results were compared to the results obtained in step one before the in-service education programme.

3.12 VALIDITY AND RELIABILITY

3.12.1 Instrument Validity

According to Brink (2012), validity is the ability of an instrument to measure the variables intended for measurement. Reliability of a research instrument shows the length to which the instrument measures the same results on repeated measures. The measure used to ensure validity and reliability of this study was the current audit tool, which has been used for the last five years throughout the country. This instrument has been tested for reliability and validity, and forms part of the COSAHSA audit for Private Hospital accreditation. An instrument is used to measure a specific variable of a study, for the purpose of this study the researcher used an audit tool (Appendix G), which was currently in use at the two private hospitals included in this study and in line with the pre-operative assessment records. The researcher was the only record reviewer for this study.

3.12.2 Content Validity

Brink (2012) states that the content validity of an instrument represents the components of a variable and the way it will be measured. The instrument used for this study was an approved instrument that has been developed by subject experts, and tested and reviewed, used for the past five years and forms part of the COSAHSA audit for the Private Hospital accreditation. The audit tool is in line with the outcomes in the pre-operative assessment record and therefore allows the researcher to measure the compliance in completion.

3.12.3 Face Validity

According to Brink (2012), one of the weakest kinds of instrument validity is face validity, as its purpose is to measure what it is supposed to. The audit tool (Appendix G) used in this study, allowed the researcher to obtain data, intending to measure completeness of the pre-operative assessment record.

3.12.4 Reliability of data collection

This is the ability of an instrument being able to produce consistent results when used repeatedly (Brink, 2012) and therefore raises concerns to the researcher during data collection. Irrespective of how reliable an instrument may be, it would serve no purpose if it lacked validity (Brink, 2012). The audit tool was developed by subject experts, ensuring it was in line with the pre-operative assessment record. Therefore, the audit tool proved to be a consistent reliable instrument to measure the intended outcomes every time it has been used in the past. The researcher was the only data collector during this study.

3.13 THE EVALUATION OF THE IN-SERVICE EDUCATION PROGRAMME

To describe the effectiveness of the in-service education programme, the researcher used a questionnaire to elicit the nursing staff feedback of their satisfaction of the education programme.

3.13.1 The design of the questionnaire

The design of the questionnaire used in this study was a survey used to gather the respondents written responses on their satisfaction of the in-service-education programme (Appendix K). According to Burns and Grove (2013) a questionnaire is a self-report form designed to gather information from a respondent's written response. A survey is used to gather information from a population through a self-report (Polit and Beck, 2012). According to Burns and Grove (2013) a questionnaire can be designed to ask open-ended questions where the respondents are required to give a written response or close-ended questions where the researcher provides the respondents with a selection of options. The questionnaire in this study comprised of open-ended and close-ended questions and the Likert-scale. The open-ended question were analysed and it yielded quantitative information which is summarised in (**see Table 5.14**). Data analysis used by qualitative researchers allows them to apply aspects of the participants experience unique to the aspects of the study (Polit and Beck, 2012). The choice of the design of the questionnaire in this study is that it addressed the research question: Would an in-service education programme for Registered and Enrolled Nurses based on a record review identifying gaps in pre-operative assessment records lead to improved completion of these records? It was cost effective and allowed the researcher to collect the data quickly and efficiently, on the same day of the in-service education programme. The quantitative research design was discussed in detail in Chapter 3. A qualitative, descriptive design was used to describe the

respondents' experience of the in-service education programme. Burns and Grove (2013) state that a descriptive research design provides an accurate interpretation of the characteristics or situation of how things happened naturally within a particular field of study. The questionnaire allowed the respondents' to describe their experiences of the in-service education programme as well as their experiences were questioned.

3.13.2 Research Setting

The in-service education programme was conducted three months after the pre-test audit in the surgical wards and the operating theatre at both hospitals.

3.13.3 Population and inclusion criteria

Burns and Grove (2013) describe the population as a total group of individuals who meet the criteria established by the researcher. The population for this study was nurses working in the surgical wards and the operating theatre receiving areas. To be included in this study the nurses needed to be either registered or enrolled at SANC and older than 18 years. An information letter was sent out to both hospitals outlining the purpose of the study and invited the nursing staff to attend. The attendance and completion of the questionnaire of the respondents were voluntary.

3.13.4 Sample

According to Polit and Beck (2012), the sample is a portion of the population from which information is collected. According to Burns and Grove (2013), a sample should contain at least 30 respondents. Total sampling was used which included all the nurses who volunteered to take part in this study. A total sample of 45 (n=45) respondents attended the in-service education programme and completed the questionnaire.

A questionnaire that consisted of two sections and eight questions had an open-ended, close-ended and Likert-scale rating questions (Appendix P) were administered to the respondents'. Section A consisted of questions relevant to the respondents' years of experience and years of experience in the operating theatre receiving area and the surgical ward. The selection of the questions in Section B in the questionnaire was relevant to the respondents' opinion of the in-service education programme and how it would guide them to improve the correct completion of the record and if they require further information in this regard.

3.13.5 Data collection

Polit and Beck (2012) state that in order to maximize completeness of a questionnaire is to administer the questionnaire to a group of respondents immediately allowing them to complete it at the same time and clarify their concerns. An advantage of using questionnaire as to an interview is that there is less opportunity for bias and questionnaires can be distributed to large samples. A questionnaire was used as a method of data collection in this study on the respondents' satisfaction of the in-service education programme. The questionnaire was anonymous and gave the researcher a chance to view the results for statistical differences.

3.13.6 Data collection method

Questionnaires are self-administered through mail, the internet and postal. Although questionnaires are economical method of collecting data it is not appropriate for children and the elderly (Burns and Grove, 2013).

The researcher explains the data collection method on the respondents' feedback. Following the in-service education programme the researcher handed out an anonymous questionnaire to be completed by the respondents' on their satisfaction of the training. The respondents' received an information letter (Appendix J) and a permission letter (Appendix K) from both private hospitals on their voluntary attendance and participation in the current study. The data collection method was a self-administered questionnaire. This allowed the respondents' the freedom to describe their experience of the in-service education programme.

3.13.7 Instrument

The researcher had selected a self-administered questionnaire (AppendixP) for data collection of the respondents' satisfaction of the in-service education programme.

The questionnaire comprised two sections that allowed the researcher to present the results of the data as follows:

- Section A comprised of demographic data pertaining to years of nursing experience and years of experience working in the operating theatre and or the surgical wards.

  The consisted of close-ended questions and the characteristics of this section allowed the researcher to gather data on the participants' independent variables. Close-ended questions allow the respondent to choose from options. Advantages of close-ended questions are that they are easy to administer and analyse, are completed in an efficient

amount of time and a preferred method for respondents that are not verbally expressive. There are disadvantages of close-ended questions is misinterpretation resulting in bias opinion and omitting key responses (Polit and Beck, 2012).

- Section B comprised of an open-ended question and Likert-scale rating. The respondents had the option to indicate their opinion in writing and in the Likert-scale to indicate their opinion in which they were given options to agree or disagree. Open-ended questions give respondents the opportunity to give a written respond in their own words (Polit and Beck, 2012). There are several disadvantages to open-ended questions as the data analysis is time consuming, difficult to interpret and respondents are not given an opportunity to clarify the questions resulting in questions being unanswered (Polit and Beck 2012). Advantages of open-ended questions allow the respondent to be verbally expressive conveying valuable replies (Polit and Beck, 2012).

3.13.8 Pre-testing of the instrument

The researcher designed the questionnaire and pre-tested it for validity and reliability. The questionnaire was pre-tested by six nurse educators for strengths and weaknesses. These expert nurse educators facilitate both the theoretical and clinical content of the pre-operative assessment records. The six nurse educators are Registered Nurses, all of who have more than five to ten years' of experience in facilitation. The researcher also received recommended email response amendments to the questionnaire from her supervisor. According to Saunders, Lewis and Thornhill (2009) pre-testing of a questionnaire is done to refine the questionnaire to omit any problems in the way the respondents' answer the questions and to ensure there are no problems in recording the data as well as measuring the validity and reliability of the questionnaire.

3.13.9 Data management and analysis

Polit and Beck (2012) describe data analysis as a systematic organisation and synthesis of data. In this study descriptive statistics and frequency tables were used to analyse the data captured on the respondents' satisfaction of the in-service education programme. Descriptive statistics according to (Polit and Beck, 2012) are referred to statistics used to summarise and describe data captured. The data were captured and entered onto an Excel spread sheet and analysed with the assistance of a statistician. Statistical analysis software Stata, version 14 SE was used to manage and analyse the data. The education programme was conducted in the operating theatres and the surgical wards at both hospitals. The current study provided evidence that the education programme was successful and significantly influenced the compliance in completing the pre-operative assessment records in some of the criterion as indicated in the results when comparing the pre-test to the post test results (**see Table 5.7**). Jones and Morris (2006) also reported the benefits in a study facilitating learning in the operating theatre and intensive care units. The authors explained that training in the clinical environment offers powerful benefits for the trainee who will be retain information in the environment that it is learned, allowing the trainee to master the skills, knowledge and abilities in a familiar clinical environment. Furthermore presenting training in the clinical environment can be done when cases are cancelled or during short breaks, using equipment that is readily available for demonstration.

Of the completed feedback questionnaires received (n=45: an overall response rate of 96.1%), 14 discrete answers were collated and 28% of the respondents answered the questions, including the respondents who indicated "nothing" as an answer. All respondents indicated the nurses who attended the training felt it was beneficial, with 35.7% indicating that the training should be repeated and held frequently; ensuring that the

Doctors and agency nursing staff attended alongside the nurses was deemed important by 28.6% of the respondents. Additional training on the pre-operative assessment process and care was requested by 14.3% of the nurses and post-operative care was specifically noted by 21.4% of those respondents.

In summary, this feedback identified three major themes: (1) the training is considered valuable and there is a desire for regular training of this nature; (2) attendance at the training session should include Doctors and agency nursing staff; (3) an area of primary concern was post-operative care and handover.

Quantitative content analysis was used to analyse the open-ended question. Open-ended questions yielded quantitative information (Burns and Grove, 2013). Unfortunately, there was hardly enough information to warrant full quantitative content analysis.

3.14 VALIDITY AND RELIABILITY

3.14.1 Instrument Validity

According to Polit and Beck (2012) the validity is a criterion for evaluating instruments validity and what it is supposed to measure. The researcher constructed the questionnaire and had the questionnaire evaluated by a panel of expert educators.

3.14.2 Content Validity

The questionnaire was tested for reliability and validity by Nurse Educators working at the training department with the researcher to check the questionnaire for content clarification. The questionnaire was intended to be completed by the nursing staff that attended the in-service education programme. The questionnaire contained short easy questions in a

language intended for the target group that would take less than ten minutes to complete. Following feedback on the content of the questionnaire from the educators the researcher amended the questionnaire appropriately. Polit and Beck (2012) state that content validity is when an instrument represents the sample being measured.

3.14.3 Face Validity

The face validity of the questionnaire was assessed by an expert of six of the educators that had given feedback (Appendix N) on the power point presentation for the in-service education programme. The educators provided written feedback on the questionnaire on the length, the layout of the questionnaire and the time taken to complete the questionnaire. According to Polit and Beck (2012), the face validity allows the instrument being used to measure the target construct as its purpose is to measure what it is supposed to. The instrument used in this study (Appendix P), allows the researcher to obtain data, from the respondents that attended the in-service education programme.

3.14.4 Reliability of data collection

This is the ability of an instrument being able to produce consistent results when used repeatedly (Brink, 2012) and therefore raises concerns to the researcher during data collection. Irrespective of how reliable an instrument may be, it would serve no purpose if it lacked validity (Brink, 2012). The reliability testing of the instrument was assessed by the panel of expert educators in the training department ensuring the questions were relevant to the in-service education programme and the demographic population that were expected to attend. The instrument was approved by the panel of expert educators following their feedback and the researcher's amendments ensuring it met the intended outcomes. The researcher was the only data collector during this study.

3.15 SUMMARY

This chapter described the research methods and design, sample and data collection instrument and process, reliability and validity and data analysis method. The data collection technique adopted for this study was a simple, timeous and cost effective process. The results of the pre-test will be presented in Chapter 4, and the post-test results and comparison with the pre-test will be presented in Chapter 5.

CHAPTER FOUR

PRESENTATION OF PRE-TEST RESULTS AND INTRODUCTION OF THE IN-SERVICE EDUCATION PROGRAMME

4.1 INTRODUCTION

Chapter 3 discussed the research design and methods. This chapter presents the pre-test results and the introduction of the in-service education programme.

Frequencies were done and percentages were reflected in tables to enhance illustration and interpretation.

4.2 PRE-TEST RESULTS

As already mentioned the audit tool consisted on three sections, the *pre-operative record, informed consent record* and *fluid balance record*.

Section one of the *Pre-operative Records*; *patient received in theatre record* indicates no significant difference between the "*Completed Yes"* and "*Completed No"* answers. They have similar proportions. The *patient sticker* is nor relevant since all indicated *"Yes"*. There is a significant difference between the proportions for the "*Completed Yes"* and "*Completed No"* for *allergy sticker*. There was significantly more *"Completed Yes"* than *"Completed No"* in this case. **Table 4.1** presents the results in all three areas in this section.

Table 4.1 Completion of the pre-operative assessment records (n=187)

Criteria	Completed Yes		Completed No		*P values*
	n	*%*	*n*	*%*	
Patient received in theatre noted in implementation record	95	50.8	92	49	0.785
Patient sticker/Patient file number	187	100	0	0	Unable to compute
Allergy sticker/Nil known/High risk	187	100	0	0	Unable to compute

$*(p<0.05)$

Table 4.2 presents the details of the second section of the pre-operative records, *Informed Consent Record*. There was a significant difference between *"Completed Yes"* and *"Completed No"* proportions for the following: *patient description of procedure, booked procedure same as patients description, patient kept nil per mouth, identification band applied, pre-operative check done* and *signatures with handover*. In all cases the proportion of *"Completed Yes"* answers was significantly more than the proportion of *"Completed No"* answers, except for premedication, where the opposite was true.

Table 4.2 Completion of the informed consent records (n=187)

Criteria	Completed Yes		Completed No		*P*
	n	*%*	*n*	*%*	***values***
Patient description of procedure-own words (and/or informed consent)	161	86.1	26	13.9	*0.001
Is the booked procedure same as the patients description (does it correlate) (and/or informed consent)	132	70.6	55	29.4	*0.001
Premedication Administered	69	36.9	118	63.1	0.006
Patient kept nil per mouth	134	71.7	53	28.3	*0.001
Identification band applied	137	73.3	50	26.7	*0.001
Preoperative check done	175	93.6	12	6.5	*0.001
Signatures with handover	151	80.7	36	19.3	*0.001

$(p<0.05)$

For the third section, *Fluid Balance Records*, there was higher proportion for recording the *patient having intravenous fluid* administered and the *fluid name* was indicated on the pre-operative assessment record ($p< 0.05$).

Starting and ending time, volume started and completed and *running total* all had statistically significantly higher proportions of incorrectly completed criteria than correctly completed criteria $(p<0.05)$.

There was no significant difference in the percentage distribution between correctly and not completed correct criteria for *intravenous site checked*. **Table 4.3** describes the fluid balance record of the pre-test results.

Table 4.3 Completion of the fluid balance records (n=187)

Criteria	Completed Yes		Completed No		*P values*
	n	%	*n*	%	
Did patient have an intravenous fluid (IV)	179	95.7	8	4.3	*0.001
Fluid name	162	86.6	25	13.4	*0.001
Starting and ending time	65	34.8	122	65.2	*0.001
Volume started/volume completed	47	25.1	140	74.9	*0.001
Running total	51	27.3	136	72.2	*0.001
Intravenous fluid (IV) site checked	80	42.8	107	57.2	0.058

*$(p<0.05)$

4.3 COMPARISON OF PRE-TEST RESULTS IN HOSPITALS A AND B

Table 4.4 describes the comparison of the pre-test results of the pre-operative assessment records between Hospital A and B. There was a total of (*n*=57) pre-operative assessment records from Hospital A and (*n*=130) pre-operative assessment records from Hospital B during the pre-test audit comparison.

With regard to *patient received in theatre*, there were (*n*=95) completed records in total, (*n*=11; 19.3%) from Hospital A and (*n*=84; 64.0%) from Hospital B. There were significantly more correctly completed responses in recording in this aspect in Hospital B than in Hospital A ($p<0.05$).

Both Hospital A and B were 100% compliant in having *patient sticker* available. There was no significant difference between Hospitals A and B regarding *allergy sticker* for the pre-education ($p>0.05$).

Table 4.4 Comparison of the completion of the pre-test results of the pre-operative assessment records between Hospital A and B

Criteria	Hospital A (*n*=57) Completed Yes		Hospital B (*n*=130) Completed Yes		*P values*
	n	%	*n*	%	
Patient received in theatre noted in implementation record (n=95)	11	19.3	84	64.0	*0.001
Patient sticker/Patient file number	187	100.0	187	100.00	0
Allergy sticker/Nil known/High risk (n=187)	57	100.0	130	100.0	0.057

**(p<0.05)*

There was a total of (*n*=161) completed records with regard to *patient description of procedure* of which (*n*=47; 82.5%) were completed from Hospital A and (*n*=114; 87.1%) from Hospital B. From a total of (*n*=132) records for the *booked procedure same as the patient's description,* there were more correct responses in Hospital B (*n*=92; 70.8%) than Hospital A (*n*=40; 70.2%). A total of the recording for the (*n*=183) *pre-operative check done* with Hospital A (*n*=51; 89.5%) and Hospital B (*n*=124; 95.4%). With regard to recording *signatures with handover* there were (*n*=151) in total. Hospital B (*n*=108; 83.1) had more correctly completed records as compared to Hospital A (*n*=43; 75.4%). There was no significant difference of correct recording in Hospitals A and B (*p>0.05).*

There was significantly more correct responses from a total of (*n*=69) completed record of *premedication administered* in Hospital A (*n*=28; 49.1%) than in Hospital B (*n*=41; 31.5%), *(p<0.05).*

From a total of (*n*=134) patient records a significant difference was noted in Hospital A (*n*=48; 84.2%) compared to Hospital B (*n*=86; 66.2%) in recording *patient kept nil per mouth (*p<0.05).

With regard to recording *identification band applied* there were (*n*=137) in total. Hospital A (*n*=48; 84.2%) had a significantly higher correctly completed response in than Hospital B (*n*=89; 68.5%), (p<0.05). **Table 4.5** describes the comparison of the pre-test results of the informed consent records between Hospital A and B.

Table 4.5 Comparison of the completion of the pre-test results of the informed consent records between Hospital A and B

Criteria	Hospital A (*n*=57) Completed Yes		Hospital B (*n*=130) Completed Yes		*P values*
	n	%	*n*	%	
Patient description of procedure-own words (and/or informed consent) (n=161)	47	82.5	114	87.1	0.341
Is the booked procedure same as the patients description (does it correlate) (and/or informed consent) (n=132)	40	70.2	92	70.8	0.935
Premedication Administered (n=69)	28	49.1	41	31.5	0.022
Patient kept nil per mouth (n=134)	48	84.2	86	66.2	0.012
Identification band applied (n=137)	48	84.2	89	68.5	0.025
Preoperative check done (n=183)	51	89.5	124	95.4	0.129
Signatures with handover (n=151)	43	75.4	108	83.1	0.223

**(p<0.05)*

Table 4.6 describes the comparison of the pre-test results of the fluid balance records between Hospital A and B. There were significantly more correctly completed responses in

recording *administration of intravenous fluid* from a total of completed records (*n*=179) in Hospital B (*n*=130; 100%) than in Hospital A (*n*=49; 86.0%) (*p<0.05).*

There was no significant difference in indicating the *fluid name* from a total of (*n*=162) for Hospital B (*n*=115; 88.5%) than Hospital A (*n*=47; 82.5%) *(p>0.05).*

There was significantly more correct recording of *starting and ending time* from a total of (*n*=65) in Hospital B (*n*=53; 40.8%) than in Hospital A (*n*=12; 21.1%), *(p<0.05).*

There was no significant difference in the total completed records noted between Hospitals A and B in recording the *volume started/volume completed* (*n*=47) and *Running total* (*n*=51) *(p>0.05).*

The total recording of the *intravenous fluid (IV) site checked* were (*n*=80) had no significant difference between Hospitals A (*n*=21; 36.8%) and Hospital B (*n*=59; 45.4%) *(p>0.05).*

Table 4.6 Comparison of the completion of the pre-test results of the fluid balance records between Hospital A and B

Criteria	Hospital A Completed Yes		Hospital B Completed Yes		*P values*
	n	*%*	*n*	*%*	
Did patient have an intravenous fluid (IV) (n=179)	49	86.0	130	100.0	*0.001
Fluid name (n=162)	47	82.5	115	88.5	0.267
Starting and ending time (n=65)	12	21.1	53	40.8	0.009
Volume started/volume completed (n=47)	12	21.1	35	26.9	0.394
Running total (n=51)	13	22.8	38	29.2	0.364
Intravenous fluid (IV) site checked (n=80)	21	36.8	59	45.4	0.277

**(p<0.05)*

4.4 DEVELOPMENT AND DESIGN OF THE IN- SERVICE EDUCATION PROGRAMME: THE ADDIE MODEL

The aim of this study was to review the pre-operative assessment records, and develop and implement an in-service education programme based on the gaps identified in the compliance of completion thereof. This was followed by a review of the pre-operative assessment records that were completed after the in-service education programme. The in-service education programme was developed and designed from the pre-test data results. To deliver the education programme effectively, the ADDIE Model Instructional Design was used.

The education programme was designed to determine if a training need exists, and if so, the type of training programme required addressing the gaps identified.

Typically, a training needs assessment would be required. The ADDIE Model guided the in-service education programme. **Table 4.7** below outlines the objectives based on the development and design of the education programme:

The focus of the ADDIE Model in this study was to guide the behaviour of the nursing staff to correctly and accurately complete the pre-operative assessment records. **Figure 3.1** indicates the objectives based on the ADDIE Model.

Figure 4.1 The ADDIE Model

Source: Addie- The eLearning Adventurer. (2017). (Retrieved November 15, 2016 from. www.e-adventurer.com/challenges/ADDIE/story.html).

The researcher describes the process that was applied to develop, design and deliver the in-service education programme.

Table 4.7 In-service education programme objectives

Objectives	
Analysis	• Identify the problem and the performance gaps. • Identify the target audience for the education programme. • The structure, content, scope of the education programme. • The skills and resources required to facilitate the education programme. • Roles and responsibilities of the personnel needing to be trained. • The desired outcome of the education programme.
Design	• Objectives based on the gaps identified from the pre-test audit results. • Selecting the methods to deliver the training. • Deigning an implementation and evaluation plan.
Development	• Developing the content for the training. • Integration of video clips and editing for technical accuracy. • Pilot testing the content of the training to be delivered by a panel of nursing experts. • Revising the content from the feedback received. • Prepare the training programme accordingly for the presentation.
Implementation	• An email notification sent to the participating hospitals. • The venue is confirmed and set up for a conducive learning environment. • The relevant resources and equipment is available to facilitate the training programme effectively.
Evaluation	• The training programme is evaluated to see if the needs of the target audience are met. • The results of the feedback are analysed to evaluate the effectiveness of the training programme.

4.5 APPLICATION OF THE ADDIE MODEL

The Addie Model is a form of instructional design commonly used by educators and facilitators to design and conduct effective training programmes. Instructional designs

were being facilitated as long ago as the 1950's, but only designed in 1975. It is a systematic process using creative and appealing instructional material to support the learning environment (Forest, 2014). The approach of this model guides the facilitator to apply each phase of the model. The ADDIE Model, which comprises five phases, the Analysis Phase, Design Phase, Development Phase, Implementation Phase and the Evaluation Phase, has been previously used in educational research and development of training programmes as supported by the literature review. After choosing the ADDIE Model, the researcher described how it was applied to deliver the in-service education programme. The problem addressed in this study was to improve the completion of the pre-operative assessment records by the implementation of an in-service education programme.

4.5.1 Analysis

The analysis phase is to identify the performance gap in order to determine the instructional goal (Branch, 2009). Answering the questions in **Table 4.7**, guided the researcher in determining the type of training that will meet the needs of the target audience. The target audience was the Registered and Enrolled Nurses who are responsible for completing the pre-operative assessment records. Understanding the roles and responsibilities of the target audience further guided the researcher to design the most applicable training programme. Language preference for the training programme was English, which was one of the needs that were required when assessing the content of the education training programme to be delivered. The environment also needs to be conducive to facilitate the training programme, and can be either in clinical setting or in a formal classroom setting. The chosen setting for the delivery of the education programme was conducted at both hospitals.

4.5.2 Design

The findings identified from the gathered data addressed the construction of the design of the education programme (Branch, 2009). The researcher formulated learning objectives in stage two, based on what the target audience were expected to learn. Items were created to test the success of the objectives set out. This guided the researcher on the selection of appropriate resources to plan, strategically and systematically, the outcomes to meet the target group's objectives. Included in this phase were the length of the training programme, an outline of the content to be covered and the sequence. Learning material using multimedia resources, together with a power point presentation, were included with audio-visual methods in the form of video clips that were easily accessible. The varied style incorporated into the in-service education programme was adapted to the needs of the target groups knowledge, skills and competency levels.

4.5.3 Development

The development phase involves how the instructional design content will be created and the materials used (Branch, 2009). The content of the education programme was in the form of a power point presentation and the content structured specific to the gaps identified. Video clips were attached to the objectives outlined and edited for technical accuracy. The content had a logical flow of the information that was delivered. The content of the training programme was reviewed by a panel of experts who were current nurse educators (Appendix M), which was acknowledged, edited and formatted by the researcher. The rationale of having an expert panel of reviewers during the design and development phase is to ensure the learning objectives are met and effective learning takes place. Feedback further shapes the content for the training programme. The researcher

allocated a reasonable time of half hour sessions for the delivery of the education programme.

4.5.4 Implementation

The purpose of the implementation phase is to prepare the learning environment to allow students to engage effectively (Branch, 2009). The implementation phase is putting the planned lesson into practice. Logistical arrangements are made in this phase regarding the venue, equipment needed and transportation. As the venue was at the clinical setting of the target audience, transportation was not required. The researcher arranged for the use of the proxy, speakers and extension cables that were essential to facilitate the training programme. An email notification was sent to the two hospitals included in the study, inviting the target audience to attend the describing of the aim of the study and the training programme. The in-service education programme was offered in the operating theatre receiving area and the surgical wards at both private hospitals.

4.5.5 Evaluation

The final phase is the evaluation to assess the quality of the facilitation of the instructional design before and after implementation (Branch, 2009). The evaluation phase involved the feedback from the target audience on the effectiveness of the training programme. Routinely, training programmes measure the participants' reaction. In this study, the target audiences' reaction was measured by a questionnaire (Appendix P) immediately after the training programme. There were many requests to deliver more in-service training on the subject matter and the participants found the information imparted very useful and informative. There was also feedback that it made them aware of patient safety issues and the medical legal risks associated with it. To attain if the participants would apply the

training objectives affectively requires the ADDIE process to be repeated with the assessment phase.

4.6 SUMMARY

This chapter presented the pre-test results and the comparison between hospital A and B. The implementation and presentation of the in-service education programme was done based on the gaps identified on the incomplete criterion on the pre-operative assessment records. Chapter 5 will present the post-test results.

CHAPTER FIVE

POST-TEST RESULTS

5.1 INTRODUCTION

The previous chapter presented the pre-test results and supported the findings with the implementation of an in-service education programme. This chapter presents the post-test results and the comparisons between the pre-and post-test results for Hospitals A and B.

All results are presented in percentages. The data were analysed to see if there was a significant association between the variables and the hospitals. The data are presented in frequency tables.

5.2 POST-TEST RESULTS

The post-test results for the three sections, *Pre-operative Record*, *Informed Consent Record* and *Fluid Balance Record,* are presented below.

Table 5.1 presents the post-test results for section one, the *Pre-operative Record*. There was a significant difference between the *"Completed Yes"* and *"Completed No"* proportions for *patient received in theatre* (95.7%; *n*=179), *patient sticker* (97.9; *n*=183) and *allergy sticker* (97.3; *n*=182). The vast majority of records were completed correctly with ($p<0.05$).

Table 5.1 Completion of the pre-operative assessment records (n=187)

Criteria	Completed Yes		Completed No		*P values*
	n	*%*	*n*	*%*	
Patient received in theatre noted in implementation record	179	95.7	8	3	*0.001
Patient sticker/patient file number	183	97.9	4	2.1	*0.001
Allergy sticker/nil known/high risk	182	97.3	5	2.7	*0.001

*$p<0.05$

The second section, *Informed Consent Records,* in **Table 5.2**, presents correctly completed criteria for *patient description of procedure* (92.0%; *n*=172), *booked procedure same as patient's description* (83.4%; *n*=156), *premedication administered* (78.1%; *n*=146), *patient kept nil per mouth* (94.7%; *n*=177), *identification band applied* (93.6%; *n*=175), *pre-operative check done* (94.7%; *n*=177) and *signatures with hand over* (90.1%; *n*=170). There was a significant difference between the *"Completed Yes"* and *"Completed No"* for all the criteria investigated (p>0.05).

Table 5. 2 Completion of the informed consent records (n=187)

Criteria	Completed Yes		Completed No		P values
	n	%	*n*	%	
Patient description of procedure - own words (and/or informed consent)	172	92.0	15	8.0	*0.001
Is the booked procedure the same as the patients' description (does it correlate) (and/or informed consent)	156	83.4	31	16.6	*0.001
Premedication administered	146	78.1	41	21.9	*0.001
Patient kept nil per mouth	177	94.7	10	5.3	*0.001
Identification band applied	175	93.6	12	6.4	*0.001
Pre-operative check done	177	94.7	10	5.3	*0.001
Signatures with handover	170	90.1	17	9.1	*0.001

*$p<0.05$

The third section, *Fluid Balance Records* is presented in **Table 5.3**. *intravenous fluids administered* (91.4%; *n*=171) and the *fluid name* (90.1%; *n*=170) were recorded correctly (*$p<0.05$).*

There was no significant difference *($p>0.05$)* for *starting and ending time* (46.5%; *n*=87), *volume started or completed* (46.0%; *n*=86) and *running total* (46.0%; *n*=86), which were recorded correctly. The values indicate that the nursing staff has paid less attention to in record keeping for this criteria of the pre-operative assessment records. There were a higher proportion of correctly completed criteria for *intravenous fluid site checked* than for incorrectly completed criteria.

Table 5.3 Completion of the fluid balance records (n=187)

Criteria	Completed Yes		Completed No		P values
	n	%	*n*	%	
Did patient have an Intravenous fluid (IV)	171	91.4	16	8.6	*0.000
Fluid name	170	90.1	17	9.1	*0.000
Starting and ending time	87	46.5	100	53.5	0.342
Volume started/volume completed	86	46.0	101	54.0	0.136
Running total	86	46.0	101	54.0	0.136
Intravenous fluid (IV) site checked	128	68.4	59	31.6	*0.000

*$p<0.05$

5.3 COMPARISON OF THE COMPLETION OF THE POST-TEST RESULTS IN HOSPITALS A AND B

Section one for the *Pre-operative Records* is presented in **Table 5.4**. There was a total of (*n*=57) pre-operative assessment records from Hospital A and (*n*=130) from Hospital B. Both Hospital A and B were 100% compliant in recording the *patient sticker* and *allergy sticker*. There was no significant difference in correctly completed recording of *patient received in theatre*, *patient sticker* and *allergy sticker* between Hospitals A and B (*p>0.05).*

Table 5.4 Comparison of the completion of the post-test results of the pre-operative assessment records between Hospital A and B

Criteria	Hospital A (*n*=57) Completed Yes		Hospital B (*n*=130) Completed Yes		*P values*
	n	%	*n*	%	
Patient received in theatre noted in implementation record (n=179)	55	96.5	124	95.4	0.731
Patient sticker/patient file number (n=187)	57	100.0	130	100.0	0.181
Allergy sticker/nil known/high risk (n=182)	57	100.0	125	96.2	0.133

Table 5.5 presents the results for section two, namely *Informed Consent Records*. There was a total of (*n*=172) *patient description of procedure* of which Hospital B (*n*=123; 94.6%) had more correctly completed records than Hospital A (*n*=49; 86.0%). With regard to recording the *booked procedure same as the patient's description* there were a total of (*n*=159) and Hospital B (*n*=114; 87.7%) had more correctly completed records than Hospital A (*n*=42; 73.7%).The total correct recording for *administration of premedication* (*n*=146), there were more completed records in Hospital B (*n*=111; 85.4%) than in Hospital A (*n*=35; 61.4%). The total correct recording of both the *pre-operative check done* and *signatures with handover* were (*n*=170). There was significantly more correct recording in Hospital B (*n*=122; 93.8%) than Hospital A (*n*=48; 84.2%) *(p<0.05).*

Hospital B (*n*=92; 70.7%) had a significantly higher correctly completed record for *identification band applied* from a total of (*n*=147) than Hospital A (*n*=55; 96.5%). There was a total of (*n*=177) completed records for *patient kept nil per mouth* where Hospital B

(*n*=120; 92.3%) had more correctly completed records than Hospital A (*n*=57; 100%). There was no difference for this criteria (p<0.05).

Table 5.5 Comparison of the completion of the post-test results of the informed consent records between Hospital A and B

Criteria	Hospital A (*n*=57) Completed Yes		Hospital B (*n*=130) Completed Yes		*P values*
	n	%	*n*	%	
Patient description of procedure-own words (and/or informed consent) (n=172)	49	86.0	123	94.6	0.045
Is the booked procedure same as the patients description (does it correlate) (and/or informed consent) (n=159)	42	73.7	114	87.7	0.018
Premedication administered (n=146)	35	61.4	111	85.4	*0.001
Patient kept nil per mouth (n=177)	57	100	120	92.3	0.031
Identification band applied (n=147)	55	96.5	92	70.7	0.283
Preoperative check done (n=170)	48	84.2	122	93.8	0.148
Signatures with handover (n= 170)	48	84.2	122	93.8	0.035

**p<0.05*

The third section, *Fluid Balance Record* is presented in **Table 5.6**. The total completed records with regard to recording the patient having *administration of intravenous fluid* was (*n*=171), and the *name of fluid* (*n*=167*).* There was no significant difference between Hospital A and Hospital B for correctly recording the *(p<0.05).*

There was significantly better recording for the following in Hospital B *(p=0.001)*: *starting and ending time* with a total of (*n*=87), where Hospital B (*n*=73; 56.2%) had more correctly completed records than Hospital A (*n*=14; 24.6%). A total of (*n*=86) for

recording the *volume started/ volume completed* with Hospital B (*n*=69) and Hospital A (*n*=17) and the *running total* were with Hospital B (*n*=71; 54.7%) and Hospital A (*n*=15; 26.3%). With regard the recording of the *intravenous fluid site checked* there were a total of (*n*=128) and Hospital B (*n*=105; 80.8%) had more correctly completed records than Hospital A (*n*=23; 40.4%).

Table 5.6 Comparison of the completion of the post-test results of the fluid balance records between Hospital A and B

Criteria	Hospital A (*n*=57) Completed Yes		Hospital B (*n*=130) Completed Yes		*P values*
	n	*%*	*n*	*%*	
Did patient have an intravenous fluid (IV) (n=171)	52	91.2	119	92.1	0.944
Fluid name (n=167)	51	89.5	116	89.2	0.651
Starting and ending time (n= 87)	14	24.6	73	56.2	*0.001
Volume started/ volume completed (n=86)	17	29.8	69	53.1	*0.003
Running total (n= 86)	15	26.3	71	54.7	*0.001
Intravenous fluid (IV) site checked (n=128)	23	40.4	105	80.8	*0.001

*$p<0.05$

5.4 COMPARISON OF PRE-AND POST-TEST RESULTS

A Z-test for the difference between the two proportions was performed to check whether there were significant differences between the proportion of correct entries in the pre-and post-education training. **Table 5.7** presents the difference between the pre-education and post-education.

Table 5.7 Comparison of the completion of the pre-test and post-test (Hospital A and B) (n=187)

Criteria	Before educational programme Hospital A and B		After educational programme Hospital A and B		*P values*
	Completed Yes		Completed Yes		
	n	%	*n*	%	
Patient received in theatre noted in implementation record	95	50.8	179	95.7	*0.001
Patient sticker/patient file number	187	100.0	183	97.9	*0.044
Allergy sticker/nil known/high risk	186	99.5	182	97.3	0.098
Patient description of procedure - own words (and/or informed consent)	161	86.1	172	92.0	0.068
Is the booked procedure the same as the patients' description (does it correlate) (and/or informed consent)	132	70.6	156	83.4	*0.003
Premedication administered	69	36.9	146	78.1	*0.001
Patient kept nil per mouth	134	71.7	177	94.7	*0.001
Identification band applied	137	73.3	175	93.6	*0.000
Preoperative check done	175	93.6	177	94.7	0.659
Signatures with handover	151	80.7	170	90.9	*0.005
Did patient have an IV	179	95.7	171	91.4	0.090
Fluid name	162	86.6	170	90.9	0.190
Starting and ending time	65	34.8	87	46.5	*0.020
Volume started/volume completed	47	25.1	86	46.0	*0.001
Running total	51	27.3	86	46.0	*0.001
IV site checked	80	42.8	128	68.4	*0.001

$*p<0.05$

Of the 16 discrete variables tested in the course of the pre-and post-test analysis, 11 demonstrated significant *($p<0.05$)* change following the in-service education programme.

In each instance the change represented improved recording of the pre-operative assessment records, which is an important finding and one in which evidences the need for and value continued in-service education. The criteria that showed significant difference in post-education programme were: patient received in theatre noted; patient sticker or file number; booked procedure same as patients' description; premedication administered; patient kept nil per mouth; identity band applied; signatures with handover; fluid start and end times; fluid volumes start and completion; fluid running total; intravenous site checked.

5.5 RESULTS

Population

Forty five of the nursing staff currently employed at the two private hospitals in this study attended the in-service education programme (*n*=45). Of these, most were Registered Nurses (40.4%) followed by Enrolled Nurses (21.2%), Enrolled Nursing Assistants (21.2%), Pupil Enrolled Nurses (1.9%) and Bridging Students (1.9%). The details are presented in **Table 5.8**.

Table 5.8 Categories of nurses who attended the in-service education programme (n=45)

Category of staff that attended in-service education programme	*n*	*%*
Registered Nurses	21	40.4%
Enrolled Nurses	11	21.2%
Enrolled Nursing Auxiliaries	11	21.2%
Pupil Enrolled Nurses	1	1.9%
Bridging Students	1	1.9%

5.6 GENERAL INFORMATION OF THE RESPONDENTS THAT ATTENDED THE IN-SERVICE EDUCATION PROGRAMME

In this study the baseline data were established from the general information included the following:

Section A

The respondents were asked to state the number of years of nursing experience and it was revealed that 28.9% (*n*=13) had worked for five to 10 years, and 26.7% (*n*=12) of respondents had 10 to 15 years of individual experience each. **Table 5.9** presents the details with the years of experience of the nursing staff.

Table 5.9 Years of nursing experience (n=45)

How many years of nursing experience do you have?	*n*	*%*
More that 1-5	4	8.9%
1-5	8	17.8%
5-10	13	28.9%
10-15	12	26.7%
Over 20	8	17.8%

Most respondents had five to 10 years of experience working in the operating theatre receiving area and or the surgical wards (28.9%; *n*=13), with 20.0% (*n*=9) reporting one to five and 10 to 15 years of experience in these areas (**Table 5.10**).

Table 5. 10 Years of experience of working in the operating theatre receiving area and/or the surgical wards (n=45)

How many years have you worked in the operating theatre receiving area or the surgical ward?	*n*	%
More than 1-5	7	15.6%
1-5	9	20.0%
5-10	13	28.9%
10-15	9	20.0%
Over 20	7	15.6%

Section B

All the respondents' (100%; *n*=45) "strongly agreed" that the correct completion of the pre-operative records was essential for patient safety (**Table 5.11**).

Table 5.11 Respondents' feedback on whether it is important to complete the pre-operative assessment record accurately (n=45)

	Response Category	*n*	%
It is important to complete the pre-operative assessment records accurately for patient safety	Strongly Agree	45	100.0%
	Somewhat Agree	0	0.0%
	Neither Agree nor Disagree	0	0.0%
	Strongly Agree	0	0.0%
	Somewhat Agree	0	0.0%

Respondents reported that the information provided during the training session was valuable (75.6%; *n*=34) and the guidance provided, aimed at directing the staff toward correct completion of the patient information records, was also valuable (42.2%; *n*=19). The collegial interaction was also important to some (15.6%; *n*=7), (**Table 5.12**).

Table 5.12 Respondents' enjoyed the most about the in-service training (n=45)

	Response Category	*n*	%
What did you enjoy the most about the workshop?	The information provided.	34	75.6%
	The interaction.	7	15.6%
	The guidance provided to complete the pre-operative assessment record.	19	42.2%

Respondents agreed that sufficient time had been allocated for the training programme (91.1%; *n*=41) (**Table 5.13**).

Table 5.13 Respondents' feedback on the time allocated for the presentation of the in-service training (n=45)

Was there sufficient time allocated to the workshop?	**Response Category**	*n*	%
	Yes	41	91.1%
	No	4	8.9%

When asking the respondents' to indicate additional information they would require that was not included in the in-service education programme, (*n*=45), the detailed feedback is presented on **Table 5.14**.

Table 5.14 Summary on feedback on whether additional information is required by respondents' not included in the in-service training (n=45)

What other issues not included in this in-service training workshop would you like?	*n*	*%*
Importance of care plans and patient's signing before going to theatre.	1	1.9%
Doctors should attend workshop.	2	3.8%
Post-operative care.	2	3.8%
This should be done often especially in the wards.	1	1.9%
Agency staff should be taught.	1	1.9%
Post-operative handover.	2	3.8%
Being in-service training every day or twice a week with sufficient time.	1	1.9%
Invite Doctors.	1	1.9%
Patient's coming to theatre with jewellery.	1	1.9%
Invite agency staff to attend.	1	1.9%
Need more training like this.	1	1.9%
Workshop helped a lot.	1	1.9%
Interesting workshop.	1	1.9%
Liked the videos.	1	1.9%

Table 5.15 presents the details on the respondents' whether completion of the pre-operative assessment record is the clinical foundation of patient management. Only 95.6% (*n*=43) strongly agreed with the pre-operative assessment.

Importantly, 95.6% (*n*=43) (**Table 5.16**) of the respondents' who attended the training programme agreed in strong terms that the completion of the pre-operative assessment is the clinical foundation of the patient management and that it can reduce operative risks.

Table 5.15 Respondents' feedback on whether completion of the pre-operative assessment record is the clinical foundation of patient management (n=45)

	Response Category	*n*	*%*
Completion of the pre-operative assessment document is the clinical foundation of patient management	Strongly Agree	43	95.6%
	Somewhat Agree	1	2.2%
	Neither Agree nor Disagree	1	2.2%
	Strongly Agree	0	0.0%
	Somewhat Agree	0	0.0%

Table 5.16 Respondents' Feedback on whether the correct completion of the pre-operative assessment records can reduce operative risks (n=45)

The correct completion of the pre-operative assessment document can reduce operative risks	**Response Category**	*n*	*%*
	Strongly Agree	43	95.6%
	Somewhat Agree	1	2.2%
	Neither Agree nor Disagree	1	2.2%
	Strongly Agree	0	0.0%
	Somewhat Agree	0	0.0%

The respondents' feedback after the in-service training revealed that the nursing staff was clear in their understanding of the importance of correct and complete recording in the pre-operative assessment records. The training demonstrably improved the correctness and

completeness of the records in most, but not all of the important criteria (11 of the 16 criteria were positively affected). The in-service training was viewed positively and the respondents expressed a desire to see this type of training occur regularly. However, despite the positive feedback and the clear understanding of the legal and safety ramifications of correct and complete recording in the pre-operative assessment records, post-education training results revealed continued gaps in the patient records.

5.7 SUMMARY

This chapter detailed the post test results after the implementation of the in-service education programme and a comparison was drawn between the pre-and post-test result between Hospital A and B. The researcher presented a detailed analysis of the survey responses using frequency tables. The next chapter 6 will conclude the current study with the discussion of the results, justifications, limitations and recommendations.

CHAPTER SIX

DISCUSSION OF RESULTS, JUSTIFICATIONS, LIMITATIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

This chapter will discuss the findings of this study, based on the results of the data analysis in chapters 4 and 5. The justifications, limitations and proposed recommendations of this study in terms of nursing education and further research are also discussed. In chapters 4 and 5, the pre-and post-test results were analysed, interpreted and presented by means of descriptive statistics and frequency tables.

6.2 DISCUSSION

When comparing the pre-and post-test results, it would be reasonable to conclude that, despite the following criteria patient sticker, allergy sticker and did patient have intravenous fluid, the education programme was successful as it had a positive influence on the majority of the criteria investigated on the completion of the pre-operative assessment records. However, implementing a successful in-service education programme is not unique to the current study. Various training methods are employed to impart the relevant skills and knowledge to healthcare professionals at healthcare institutions to improve quality patient care. Garzonis *et al*., (2015) reported on findings in their study focusing on improving patient outcomes from effectively training healthcare staff using group, individual and web-based training. Following the training methods used the authors recognized there was a positive improvement in patient outcomes which highlighted that the selection of the training method must be considered and the patient change it hopes to

impact. In addition according to Griscti and Jacono (2006), in a literature review explains how to make continuous education more effective by allowing the nurses to have a more participatory role in their learning. However, continued education and in-service programmes was used in the current study making a realistic and attainable effort but was difficult for the researcher to determine which nursing staff had implemented what they have learnt from the in-service education programme. In this study the education programme had a positive influence on completing some of the criteria because of the nursing staff having prior knowledge and experience in completing the pre-operative assessment records and practicing the knowledge attained from the education programme.

The criteria audited on the pre-operative assessment records in line with the audit tool reveals that the in-service education programme had a positive influence on some of the criteria including: patient received in theatre implemented, patient sticker, allergy sticker, patient description of procedure, booked procedure, premedication administered, identification band applied, patient kept nil per mouth, signatures with handover and fluid name. Dutra *et al*., (2016) reported positively on low cost interventions' success in promoting complete record keeping similar to the current study. The authors also suggested regular internal audits could be implemented within the teams on items that needed to be improved.

In addition time seems to play an important role for the nurses to best use the time available to ensure the criteria of the pre-operative assessment records is correctly completed. Braaf, Riley and Manias (2015) pointed out that nurses feel pressured of the time constraints given on administrative criteria that need to be met on completion of the

pre-operative records. The researcher noted that the legal requirements were met with regards to the completeness and legibility of the pre-operative assessment records.
The researcher acknowledges the age of the literature dated (2002) is older than 5 years, as there was no new literature with information to support the current study.

In this study the post-test audit did reveal an overall improvement in completing the pre-operative assessment records after the in-service education programme in some criteria in the three sections. However, there is room for improvement for compliance of the pre-operative assessment records in section, 3; the fluid balance records (**see Table 5.6 and Table 5.7**). The reason for poor compliance in section 3 in this study is unknown.

The study supports the literature stating that education programmes are the foundation for improving completeness of the pre-operative assessment records by the nursing staff. Walsgrove (2006) conducted a study by successfully developing and introducing an education, training and assessment programme for nurses conducting pre-operative patient assessments at different levels of practice. An audit was initially conducted at one of the two acute trust hospitals that identified that due to lack of structured training and assessment of the nurses led to absence of standards of practice. The programme demonstrated that by incorporating the training and assessment programme at different levels contributed to the success of the modelling of education of the pre-operative assessment nurse in the competency portfolio, suggesting the development of similar frameworks in the future across the United Kingdom. The author further supported the development of the skills formally at of the nurses by developing the programme of education and training for the pre-operative assessment nurses. A study by Klipfel *et al*., (2014), supports implementing an education strategy training helped to boost the

confidence of the nursing staff in managing emergency situations in a surgical unit similar to the current study. The authors further highlight how the training enhanced the interdisciplinary team to practice the skills creating a replication of the training which are critical to enhancing patient safety. It might therefore be argued that regular audits of the pre-operative assessment records can identify gaps to be implemented in on going education programme to improve compliance in completion of the pre-operative assessment records.

However, in the researcher incorporated multimedia into the education programme that was developed in line with the phases of the ADDIE Model was explained in chapter 3 of this study. The training within the operating theatres and the surgical wards added value for learning that further allowed the researcher to impart visual and auditory learning that positively influenced the education programme. Bluestone *et al*., (2013) reported in an integrative literature review study where the focus was on providing evidence supporting educational techniques, frequency, media and setting that was used as a method of instruction to deliver health professional education to improve patient outcomes. The authors emphasised that the selection of the media must support the instruction for the educational technique in order for it to be effective to get the desired outcome.

6.2.1 Section1: Criterion: Pre-operative assessment records

It was interesting to note that both hospital A and B the completion of this criterion before and after the education programme (**see Table 5.7**), only one criterion improved whilst the other two criterions became worse. In comparing the pre-test results in hospital A and B (**see Table 4.4**), hospital B had scored 44.7% more in completing this criterion patient received in theatre noted in implementation record. Whereas hospital A improved by 1.1%

in this criterion in the post-test when compared to hospital B. Both hospital A and B were compliant in completing the patient sticker/ patient file in the pre-and post-test (**see Table 4.4 and 5.4**). There was a slight variation in the scores in the pre-and post-test in both hospital A and B (**see Table 4.4 and 5.4**). The researcher noted that very little literature has been published regarding the compliance in recording in the patients' implementation records.

In a study by Hamza *et al*., (2013) evaluated the implementation records of patients that had undergone a surgical procedure at a teaching hospital in Sudan. The authors found important items were missed due to variations in the quality of the hand written notes indicating inadequacies in recording of the surgical procedures performed. As there are serious implications associated in poor patient care being administered due to unclear written implementation records, resulting in medico-legal risk, the authors suggested that recording should be part of surgical training to improve patient safety. Similarly a study conducted by Shah *et al*., (2011), where the implementation records of surgical patients were scrutinized for completeness and compared to an audit conducted in the same department in July 2009. Operative notes which can be used in a court of law with a range of clinical and medico-legal consequences if relevant information is omitted or not recorded. Therefore the authors support the completeness of the implementation records. Wauben, Lange and Goossens (2012) supports training are provided to improve quality of the patients' implementation records and to further improve patient safety following an evaluation of implementation records concerning laparoscopic cholecystectomy. The authors found that despite guidelines available to write the implementation records, this was very poorly adhered too and can influence the treatment being administered to the patient. The researcher found very little literature on patient sticker/ patient file number

during the review of other studies. Swart and Kuhn's (2015) findings were similar to those of this study, in that the authors reported that 92.6% of the patient records had a hospital label with patient sticker indicating name and age.

Mentioning the patients' allergies and obtaining the patients history is an important criterion on the pre-operative assessment record. Comparatively 3.8% of these criterions were either not indicated or incomplete in hospital B in the post-test (**see Table 5.4**) which decreased from the pre-test 0.8% (**see Table 4.4**). In this study it was evident that the nursing staff had an understanding of the importance of the correct completion of the patients' allergies and high risk factors. In a study conducted by Tuffaha *et al*., (2012) focusing on found that recorded completion corrections in the staff who attended and education programme was improved. In a study by Swart and Kuhn (2015) it was also found that allergies were recorded in 74.1% of the patients' pre-operative assessment records following an intervention. The education programme did not improve the compliance in completing the criterion in this section as there was no significant difference between the scores of the pre-and post-test.

6.2.2 Section 2: Informed consent records

In this criterion the patients' description of the procedure –own words, data from the pre-and post-test showed that hospital B was more compliant than hospital A (**see Table 4.5 and 5.5**). This implies that the education programme did influence the compliance in completing this criterion in both the pre-and post-test in hospital A and B (**see Table 4.5 and 5.5**). The gaps in the percentages reported in the post-test comparisons between both hospitals A and B, showed better compliance in after the education programme (**see Table 5.7**). The literature Dutra *et al*., (2016) and Masaki and Mahendiran (2015) evaluated

records completed by nursing staff for compliance in line with the legislation before and after an educational intervention explains that improvement can be made with continuous educational training. The authors further conclude in their study that incomplete patient notes can lead to poor patient care and risks to patient safety. Similarly in the researcher's opinion in this study opportunities to reinforce learning through repetition can in the future improve compliance in completing the pre-operative assessment records.

On confirming the booked procedure and informed consent is obtained and signed by the patient acknowledging the benefits and risks explained by the surgeon, Phillips (2013). There was no significant difference in the compliance for the booked procedure same as the patients' description in the pre-test in hospital A and B (**see Table 4.5**), however, the interpretation of the data in the post-test shows that compliance in hospital B improvement by 14% (**see Table 5.5**). In the current study this implies that the education programme did influence the compliance by gaining better scores from the pre-test to the post-test. In a study by Leclercq *et al*., (2010), the authors discovered gaps that existed on completion of the informed consent in theory and practice. The authors suggested the utilisation of interactive computer-based programmes to improve the surgical informed consent. The researcher identified improvement in completion of the criterion of booked procedure same as the patients' description after the in-service education programme and utilisation of the video clips that highlighted the medical legal implications on incorrect surgical procedures.

The surgical patients' consent in this study at both hospital A and B are verified three times prior to the commencement of the surgical procedure; the pre-operative visit, the receiving area and in the operating theatre. It is imperative to verify the patients' consent in order to prevent wrong side surgery, therefore the patients' description and the booked procedure

must be the same. Clarke, Johnston and Finely (2007) examined patient records for a 30 month period and found that multiple verifications of the patients' consent are imperative before the commencement of the surgical procedure. In a study conducted by Swart and Kuhn (2015) it was also found that only 38.3% of the pre-operative diagnoses were correctly recorded which impacts on whether the proposed surgical procedure is justified. In the current study, the patients' consent is verified three times, on admission, in the operating theatre receiving area and just before the commencement of the surgical procedure.

The criterion of premedication administration was either not recorded or omitted in the current study when interpreting the data on the before and after education programme. This implies that the education programme in this study significantly influenced the compliance of completing the records of premedication administration from 36.9% (pre-test) to 78.1% (post-test) (**see Table 5.7**). This is aligned with the findings by Swart and Kuhn (2015) who found that the criterion for premedication was not recorded for elective cases.

Maintenance of "nil per mouth" was significantly influenced by the education programme. This trend is positive as according to Seyedhejazi (2014) fasting pre-operatively reduces the risk of regurgitation and aspiration of gastric contents during the surgical procedure. Swart and Kuhn (2015) also concluded that pre-operative fasting is important to identify risk factors such as aspiration and also guide in the anaesthetic plan.

An important outcome identified from this study is the significance of recording the criterion of identification band applied (*p=0.000).* There was poor compliance in this criterion in hospital B (68.5%) in the pre-test (**see Table 4.5**) and an increase in

compliance noted in the post-test in hospital B (70.7%) (**see Table 5.5**). Hospital A scored 12.3% more in the post-test. This implies that the education programme did influence the compliance in this criterion. Failure to correctly identify patients can lead to near miss events. This is supported by literature from the United Kingdom National Patient Safety Agency where near miss events were reported as a result of poor patient identification due to missing identification wrist bands. In addition to this Robertson (2008) confirms that in order to improve patient safety and ensuring that patients reach the desired surgical outcome patients need to be correctly identified.

The criterion of the pre-operative check is done to ensure all the relevant information pertaining to the patient is completed on the pre-operative assessment record prior to the surgical procedure. Good compliance of 94.7% in hospital B (**see Table 5.7**) was found for recording the pre-operative check criterion in this study which was similar to the findings of Swart and Kuhn (2015) where relevant information was correctly completed to the proposed surgery.

The compliance of recording the date and time accompanied by the nursing staff signatures improved by 10.2% after the education programme (**see Table 5.7**). Roets, Aucamp and de Beer (2002) recommended that the legibility of handwriting and signatures is important as they can lead to communication errors that could contribute to harm on the patient.

6.2.3 Section 3: Fluid balance records

There is evidence that the education programme did not make a difference to the completion of the criterion patient had an intravenous infusion. It seems that this section and the criterion tend to be overlooked by the nursing staff, not recognizing it as significant

as the other criterion. Findings indicated that the completion of this criterion decreased by 4.3% (**see Table 5.7**) after the education programme. Roets, Aucamp and de Beer (2002) were concerned about the requirements for post-operative assessment recording of intravenous intake and developed a checklist. In a study by Ling *et al*., (2011), the fluid balance records were found to be either incomplete or illegible, and doctors have also complained of calculation errors or no totalling on the fluid balance chart. The authors aimed to identify the types of mistakes in recording in the fluid balance charts and conducted an audit of the fluid balance records and found the compliance in recording improved from 63% to 88% in the post-test. A new format was introduced to help reduce mistakes when recording in the fluid balance records and the authors indicated that the new format be periodically introduced to the new nurses. In this study there was a slight improvement of the criterion of indicating the fluid name by 4% (**see Table 5.7**) in after the education programme.

The start and end time criterion was very poorly recorded even after the in-service education programme. Only 34.8% (**see Table 5.7**) of the start and end times were recorded prior to the education programme and 46.5% (**see Table 5.7**) after the education programme. The criterion of indicating the volume started/volume completed was noted in 25.1% (**see Table 5.7**) of instances prior to the education programme and in 46.0% (**see Table 5.7**) after the education programme. Running total of the intravenous fluid criterion was recorded for 27.3% (see **Table 5.7**) of patient records in the pre-test findings and in 46.0% (**see Table 5.7**) of the post-test patient records. Checking of the intravenous site criterion improved by 25.6% (**see Table 5.7**) following the education programme. When comparing hospital A to hospital B in the post-test scores, hospital A had a higher compliance 40.4% **(see Table 5.6**) whilst hospital B scored a low 19.2% (**see Table 5.6**)

after the education programme. Similar findings were noted in a study by Roets, Aucamp and de Beer (2002) where there was inadequate recording of the fluid balance records. Tang and Lee (2010) highlighted inaccurate fluid balance recording due to lack of education leading to inconsistent recording. Masaki and Mahendiran (2015) reported positively that educational awareness can succeed in improving recording of the fluid balance.

6.3 NURSES FEEDBACK ON THE IN-SERVICE EDUCATION PROGRAMME

The study provided evidence that 45 nurses attended the in-service education programme. All the nurses completed the evaluation of the education programme (86.6% response rate) (**see Table 5.8**). There was more registered nurses (n=21; 40.4%) that attended the education programme in ratio to the other categories of attendees (**see Table 5.8**). Majority of the attendees had between 5-10 years of nursing experience (n=13; 28.9%) and years of experience of working in the operating theatre receiving areas and or the surgical wards (**see Table 5.9** and **5.10**).

In addition it was positive to find that most of the attendees enjoyed the provision of most of the information (n=34; 75.6%) (**see Table 5.12**). The nursing staff provided positive feedback on the education programme indicating that it provided them with the guidance to complete the pre-operative assessment records (n=19; 42.2%), whilst (n=17; 15.6%) enjoyed the interaction (**see Table 5.12**). Similarly a study by Bluestone *et al*., (2013) indicated that repetitive training interventions are critical to learning outcomes. The author further stated that the selection of the media and settings must be relevant and realistic to support the educational techniques and the efficiency of instruction, as this allowed the learners to process and apply the information. The researcher incorporated video clips in

the education programme to help the attendees have a visual experience to the related theory in the presentation.

It was interesting to note that all the attendees agreed (n=45; 100%) (**see Table 5.11**) on the importance to complete the pre-operative assessment record accurately. The nurses' understanding on the completion of the pre-operative assessment records changed after the introduction of the in-service education programme where (n=45; 100%) strongly agreed that it is important to complete the pre-operative assessment records correctly (**see Table 5.11**). From the feedback received the nurses found the education programme beneficial and indicated that they would recommend this programme to a colleague. The nurses also provided feedback on additional information that is required which was not included in the in-service education programme (**see Table 5.14**). From the (n=45) attendees (n=41; 91.1%) (**see Table 5.13**) acknowledged that sufficient time was allocated for the presentation of the education programme. The attendees (n=43; 95.6%) strongly agreed that patient risks can be reduced when the pre-operative assessment record is completed correctly (**see Table 5.17**).

6.4 JUSTIFICATION OF THE STUDY

The study is justified in terms of the aims and purpose which was to develop and in-service education programme based on the findings of the pre-test results. Chapter 1 provided an overview of the study and chapter 2 presented a summary of the literature review. The research methods and design was described in chapter 3. In terms of the objectives the study was to develop and introduce an in-service education programme based on the results of the pre-test results and was addressed in chapter 4. The purpose of the in-service education programme was to guide the nurses to improve the completion of the pre-

operative assessment records. Chapter 5 presented the post-test results and the comparison between the pre-and post-test results in hospital A and B discussing the findings of the study, justifications, limitations and recommendations for further research.

The nursing staff that attended the education programme provided feedback on their opinion of the presentation. The researcher noted that some criterion improved whilst others became worse after the education programme. Therefore this implies that the education programme was not a total success while it did influence some level of compliance in completing the pre-operative assessment records.

6.5 LIMITATIONS OF THE STUDY

The limitation of this study was insufficient categories of the nurses cannot be established as they were not on the pre-and post-test data.

Assumptions that the respondents were not completely honest in answering the questionnaire based on understanding the question following the training programme, as it was a self-reported questionnaire. The results of the respondents feedback on the questionnaire merely reflects their response over a given period of time of when the training programme was conducted and therefore the results need to be interpreted with caution not generalizing the entire population of nursing staff that are involved in completing the pre-operative assessment records.

A simple random sampling method was used in this study allowing the researcher to select an equal amount of pre-operative assessment records for the pre-and post-test audit. The post-test audit was conducted only once following the training programme and therefore

cannot be found that improvement in compliance in completion of the pre-operative assessment records can be sustained over a longer period of time.

6.6 RECOMMENDATIONS OF THE STUDY

The researcher therefore recommends regular audits of the pre-operative assessment records to monitor completion and enhance patient safety prior to a surgical procedure.

There is a need to develop more education training programmes to enhance the competency levels of nursing staff completing the pre-operative assessment records. Educators involved training nursing in the speciality of operating theatre need to pay more attention on the importance in the compliance of completing the pre-operative assessment record correctly. Even with the gaps identified on compliance with completion on some of the criterion of the pre-operative assessment records, the researcher is convinced based on the post-test audit results that regular audit with the current audit tool is appropriate to guide improvement on compliance on completion of the pre-operative records.

Further studies are recommended using similar research design with a larger sample. Improving and amending the audit tool to identify who had completed the pre-operative assessment records can assist in creating more focused training in the future. Quantitative studies involving regular training programmes can be a valuable way to determine the needs of the nursing staff on improving the completion of the patients' pre-operative assessment records.

6.7 CONCLUSION

This study provided evidence that after the introduction of the education programme to the nurses there was an overall improvement in the completion of the pre-operative assessment records. However, the completion of the fluid balance was disappointing as the in-service education programme did not significantly improve the completion of these criteria. The reason for poor compliance in completion of the fluid balance criteria is unknown and should be further investigated.

The finding of the three sections that cover the 16 criteria on the audit tool in line with the pre-operative assessment records pertaining to information obtained during admission and handing the patient over in the operating theatre receiving area, exemplify detrimental effects of malpractice lawsuits. In other words, of it is not recorded it is “not done”. In this study it is strongly indicated that there is need for improvement in completing the pre-operative assessment records. Further research is recommended for further study on a larger scale.

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APPENDICES

APPENDIX A Human Research Ethics Committee Clearance Certificate M160803

R14/49 Mrs Evashini Rajkumar

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M160803

NAME: (Principal Investigator)	Mrs Evashini Rajkumar
DEPARTMENT:	Nursing Education Mediclinic Morningside and Mediclinic Sandton
PROJECT TITLE:	Improving the Completion of the Pre-Operative Assessment Documentation in the Private Hospital Group in Johannesburg
DATE CONSIDERED:	26/08/2016
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Andrea Hayward

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
OFFICE OF THE DEPUTY VICE CHANCELLOR (RESEARCH)
31 OCT 2016
RESEARCH OFFICE HREC (MEDICAL) RECEIVED

APPROVED BY: Professor P Cleaton-Jones, Chairperson, HREC (Medical)

DATE OF APPROVAL: 28/10/2016

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary in Room 301, Third Floor, Faculty of Health Sciences, Phillip Tobias Building, 29 Princess of Wales Terrace, Parktown, 2193, University of the Witwatersrand. I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report.** The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. In this case, the study was initially reviewed in August and will therefore be due in the month of August each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature

Date 28/10/16

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

APPENDIX B Letter of request permission to conduct research from Mediclinic Executive Ethics Committee (Pty) Ltd

Mrs E. Rajkumar
P.O. Box 551
Umhlanga Rocks
4320
29 March 2016

Mrs Ann Van Zyl
Manager Nursing Education
Mediclinic (Pty) Ltd
P.O.Box 456
Stellenbosch
7599
South Africa

Dear Mrs Van Zyl

RE: APPLICATION FOR PERMISSION TO CONDUCT A STUDY

My name is Evashini Rajkumar. I am currently a postgraduate student at the University of Witwatersrand in the Department of Nursing Education reading for my degree in Masters of Science in Nursing. I would like permission to conduct my research titled "*Improving the completion of the pre-operative assessment documentation in a private hospital group in Johannesburg*".

A one group pre-test – post-test design will be applied to audit pre-operative assessment documents and describe whether in-service training improves the completion of these documents. Audit data will be collected using an audit tool.

My study will contribute to the safety of the patient requiring surgery by improving the practice and documentation skills of nurses working in the operating theatre receiving areas and the surgical wards.

I assure you that the names of patients and the personnel will not be revealed and the information obtained will remain confidential. The data will be collected electronically and saved on a password protected computer. Only the supervisor and I will have access to the data. The study has been reviewed by the Human Research and Ethics Committee.

Thank you

Yours sincerely

_____

STUDENT	SUPERVISOR
Mrs.Evashini Rajkumar	Mrs. Andrea Hayward
evashini.rajkumar@mediclinic.co.za +27828230052 +27117092366	Andrea.Hayward2@wits.ac.za +27114884271

Human Research Ethics Committee (Medical)

Prof. P Cleaton-Jones +27117172301 peter.cleaton-jones1@wits.ac.za

Administrative Officers

Ms Z Ndlovu +27117172700 zanele.ndlovu@wits.ac.za

Mr Rhulani Mkanasi +27117172656 Rhulani.mkansi@wits.ac.za

Mr Lebo Moeng +27117171252 Lebo.moeng@wits.ac.za

APPENDIX C Approval and permssion to conduct research from Mediclinic Executive Ethics Committee (Pty) Ltd

MEDICLINIC

RESEARCH APPLICATION – EVE RAJKUMAR

Date: 1 August 2016

FOR APPROVAL

C VAN WYK
HR Executive

NOTES

• Locality	:	Mediclinic Learning and Development
• Employee	:	Yes
• Value of Study	:	Confirmed
• Topic	:	Completion of pre-operative assessment form
• Impact	:	Three hospitals: Operating Department staff – Observations and in-service training
• Supported by Hospital	:	Supported by Ann van Zyl, Nursing Managers (Sandton, Morningside)

From: Rajkumar, Evashini
Sent: 19 July 2016 08:51 AM
To: de Lange, Dewald; Roman, Megan
Cc: Powell, Elize
Subject: RE: Seeking permission to do research study at Mediclinic

Dear Megan and Dewald

I am a student currently registered at Wits University, to commence my Research Study. I have attached my research proposal and a letter from Human resources Ethics Committee (Medical). Please can you kindly assist me in the requirements to obtain permission from Mediclinic Ethics Committee.

Thank you

Kind regards

Evashini Rajkumar (Eve)
Nurse Educator (Theatre)
MEDICLINIC SOUTHERN AFRICA

Mediclinic Ltd Learning Centre Northern Region
Cnr Peter Place and Main Road
Bryanston, 2021
Private Bag X1
Bryanston, 2021
T +27 11 709 2266

Rajkumar, Evashini

From:	van Zyl, Ann
Sent:	01 August 2016 02:39 PM
To:	Rajkumar, Evashini; Van der Merwe, Chalet
Cc:	Powell, Elize
Subject:	FW: research approvals
Attachments:	ScanJob.pdf

Dear Chalet and Eve

Please find attached approval letter signed by Mr van Wyk.

Regards

Ann van Zyl
Higher Education and Training Manager
MEDICLINIC SOUTHERN AFRICA

Mediclinic Regional Office
Tijgerpark 1, Willie van Schoor Drive
Bellville, 7530
PO Box 5228
Tygervalley, 7536
T +27 21 943 6000
F +27 86 681 3188
www.mediclinic.co.za

-----Original Message-----
From: van Wyk, Greg
Sent: 01 August 2016 02:31 PM
To: van Zyl, Ann
Subject: FW: research approvals

Dear Ann

Herewith the Research Approvals as discussed.

Kind regards

Greg van Wyk
Human Resources Executive
MEDICLINIC SOUTHERN AFRICA

Mediclinic Offices
Strand Road
Stellenbosch, 7600
PO Box 456
Stellenbosch, 7599

APPENDIX D Letter of request permission to conduct research – Hospital Manager

University of Witwatersrand
Faculty of Health Sciences
Department of Nursing Education
7 York Road
Parktown
2193

Mr Richard Brett
Hospital General Manager
Mediclinic Morningside
c/o Hill and Rivonia Streets
Morningside
Sandton

Dear Mr Brett

RE: PERMISSION TO CONDUCT RESEARCH FOR MSc (NURSING)

My name is Evashini Rajkumar. I am a registered postgraduate student at the University of Witwatersrand in the Department of Nursing Education reading for the degree of Masters of Science in Nursing. As a requirement for my study I would like to request the permission to conduct my research at Mediclinic Morningside.

The title of my study is "*Improving the completion of the pre-operative assessment documentation in a private hospital group in Johannesburg*". The study is based on my concerns regarding the completion of pre-operative assessment documentation of patients that are scheduled for surgery. The operating theatre is a specialized unit in which surgical procedures are conducted on patients daily. Patients rely on the knowledge and ability of the nursing staff to complete the pre-operative assessment documents which will ensure a safe and successful surgical journey. The correct completions of the documents are guided by policies and procedures. A deviation in these policies and procedures can place the surgical patient at risk.

The aim of the study is to audit the pre-operative assessment documentation and improve the completion of the documentation by means of in-service training. A one group pre-test – post-test design will be applied to audit pre-operative assessment documents and describe whether in-service training improves the completion of these documents. Audit data will be collected using an audit tool. Dependent on the findings of the audit, in-service training will be given to staff working in the operating theatre receiving areas and the surgical wards. A month following the in-service training a second audit will be done on the pre-operative assessment documents. The result of the first audit will be compared to that of the second audit to establish if there was an improvement in the completion of the pre-operative assessment documents.

The population for this study will consist of two elements, unit of analysis and population. The units of analysis will consist of the pre-operative assessment documents of patients who have undergone anaesthesia for a surgical procedure, before in-service training and after in-service training. The population will be all the Registered Nurses and Enrolled Nurses working in the surgical wards and the operating theatre receiving area in the three hospitals. A non-probability convenience sampling method will be used to select units of analysis.

Inclusion criteria will be the Registered and Enrolled Nurses who work in the surgical wards and the operating theatre receiving areas. In-service training will be presented in both day and night staff. These staff from the three hospitals will be invited to participate and consent will be obtained from nurses who are willing to participate in this in-service training.

Data will be collected in three steps. Step one and step three will make use of a current audit tool which has been used for the past five years and is available and in use in the three private hospitals included in the study. The tool is aligned with the pre-operative assessment documents in use. Step two will make use of a questionnaire assessing the participants' opinion of the usefulness of the in-service training with regards to the documentation. My study will contribute to the safety of the patient requiring surgery by improving the practice and documentation skills of nurses working in the operating theatre receiving areas and the surgical wards.

I assure you that the names of patients and the personnel will not be revealed and the information obtained will remain confidential. The data will be collected electronically and

saved on a password protected computer. Only the supervisor and I will have access to the data. The study has been reviewed and subjected to approval by the Human Research and Ethics Committee. A copy of the report of the study will be made available to you on written request after the completion of the study.

Thank you

Yours sincerely

_____

STUDENT	SUPERVISOR
Mrs.Evashini Rajkumar	Mrs. Andrea Hayward
evashini.rajkumar@mediclinic.co.za	Andrea.Hayward2@wits.ac.za
+27082 823 0052	+27114884271
+27117092366	

Human Research Ethics Committee (Medical)

Prof. P Cleaton-Jones +27117172301 peter.cleaton-jones1@wits.ac.za

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Ms Z Ndlovu +27117172700 zanele.ndlovu@wits.ac.za

Mr Rhulani Mkansi +27117172656 Rhulani.mkansi@wits.ac.za

Mr Lebo Moeng +27117171252 Lebo.moeng@wits.ac.za

University of Witwatersrand
Faculty of Health Sciences
Department of Nursing Education
7 York Road
Parktown
2193

Mrs Louise Sole
Hospital General Manager
Mediclinic Sandton
C/O Main Road & Peter Place
Bryanston
2021

Dear Mrs Sole

RE: PERMISSION TO CONDUCT RESEARCH FOR MSc (NURSING)

My name is Evashini Rajkumar. I am a registered postgraduate student at the University of Witwatersrand in the Department of Nursing Education reading for the degree of Masters of Science in Nursing. As a requirement for my study I would like to request the permission to conduct my research at Mediclinic Sandton.

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Data will be collected in three steps. Step one and step three will make use of a current audit tool which has been used for the past five years and is available and in use in the three private hospitals included in the study. The tool is aligned with the pre-operative assessment documents in use. Step two will make use of a questionnaire assessing the participants' opinion of the usefulness of the in-service training with regards to the documentation. My study will contribute to the safety of the patient requiring surgery by improving the practice and documentation skills of nurses working in the operating theatre receiving areas and the surgical wards.

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Thank you

Yours sincerely

_____

STUDENT

Mrs. Evashini Rajkumar

evashini.rajkumar@mediclinic.co.za
+27828230052
+27117092366

SUPERVISOR

Mrs. Andrea Hayward

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+27114884271

Human Research Ethics Committee (Medical)

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Mr Lebo Moeng +27117171252 Lebo.moeng@wits.ac.za

APPENDIX E Letter of request permission to conduct research – Nursing Manager

University of Witwatersrand
Faculty of Health Sciences
Department of Nursing Education
7 York Road
Parktown
2193

Ms Heidi Henning
Nursing Manager
Mediclinic Morningside
c/o Hill and Rivonia Streets
Morningside
Sandton

Dear Ms Henning

RE: PERMISSION TO CONDUCT RESEARCH FOR MSc (NURSING)

My name is Evashini Rajkumar. I am a registered postgraduate student at the University of Witwatersrand in the Department of Nursing Education reading for the degree of Masters of Science in Nursing. As a requirement for my study I would like to request the permission to conduct my research at Mediclinic Morningside.

The title of my study is "*Improving the completion of the pre-operative assessment documentation in a private hospital group in Johannesburg*". The study is based on my concerns regarding the completion of pre-operative assessment documentation of patients that are scheduled for surgery. The operating theatre is a specialized unit in which surgical procedures are conducted on patients daily. Patients rely on the knowledge and ability of the nursing staff to complete the pre-operative assessment documents which will ensure a safe and successful surgical journey. The correct completions of the documents are guided by policies and procedures. A deviation in these policies and procedures can place the surgical patient at risk.

The aim of the study is to audit the pre-operative assessment documentation and improve the completion of the documentation by means of in-service training. A one group pre-test- post-test design will be applied to audit pre-operative assessment documents and describe whether in-service training improves the completion of these documents. Audit data will be collected using an audit tool. Dependent on the findings of the audit, in-service training will be given to staff working in the operating theatre receiving areas and the surgical wards. A month following the in-service training a second audit will be done on the pre-operative assessment documents. The result of the first audit will be compared to that of the second audit to establish if there was an improvement in the completion of the pre-operative assessment documents.

The population for this study will consist of two elements, unit of analysis and population. The units of analysis will consist of the pre-operative assessment documents of patients who have undergone anaesthesia for a surgical procedure, before in-service training and after in-service training. The population will be all the Registered Nurses and Enrolled Nurses working in the surgical wards and the operating theatre receiving area in the three hospitals. A non-probability convenience sampling method will be used to select units of analysis.

Inclusion criteria will be the Registered and Enrolled Nurses who work in the surgical wards and the operating theatre receiving areas. In-service will be presented in both day and night staff. These staff from the three hospitals will be invited to participate and consent will be obtained from nurses who are willing to participate in this in-service training.

Data will be collected in three steps. Step one and step three will make use of a current audit tool which has been used for the past five years and is available and in use in the three private hospitals included in the study. The tool is aligned with the pre-operative assessment documents in use. Step two will make use of a questionnaire assessing the participants' opinion of the usefulness of the in-service training with regards to the documentation. My study will contribute to the safety of the patient requiring surgery by improving the practice and documentation skills of nurses working in the operating theatre receiving areas and the surgical wards.

I assure you that the names of patients and the personnel will not be revealed and the information obtained will remain confidential. The data will be collected electronically and

saved on a password protected computer. Only the supervisor and I will have access to the data. The study has been reviewed and subjected to approval by the Human Research and Ethics Committee. A copy of the report of the study will be made available to you on written request after the completion of the study.

Thank you

Yours sincerely

_____

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Mrs.Evashini Rajkumar	Mrs. Andrea Hayward
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University of Witwatersrand
Faculty of Health Sciences
Department of Nursing Education
7 York Road
Parktown
2193

Mrs Liesl de Blanche
Nursing Manager
Mediclinic Sandton
C/O Main Road & Peter Place
Bryanston
2021

Dear Mrs de Blance

RE: PERMISSION TO CONDUCT RESEARCH FOR MSc (NURSING)

My name is Evashini Rajkumar. I am a registered postgraduate student at the University of Witwatersrand in the Department of Nursing Education reading for the degree of Masters of Science in Nursing. As a requirement for my study I would like to request the permission to conduct my research at Mediclinic Sandton.

The title of my study is "*Improving the completion of the pre-operative assessment documentation in a private hospital group in Johannesburg*". The study is based on my concerns regarding the completion of pre-operative assessment documentation of patients that are scheduled for surgery. The operating theatre is a specialized unit in which surgical procedures are conducted on patients daily. Patients rely on the knowledge and ability of the nursing staff to complete the pre-operative assessment documents which will ensure a safe and successful surgical journey. The correct completions of the documents are guided by policies and procedures. A deviation in these policies and procedures can place the surgical patient at risk.

The aim of the study is to audit the pre-operative assessment documentation and improve the completion of the documentation by means of in-service training. A one group pre-test – post-test design will be applied to audit pre-operative assessment documents and describe whether in-service training improves the completion of these documents. Audit data will be collected using an audit tool. Dependent on the findings of the audit, in-service training will be given to staff working in the operating theatre receiving areas and the surgical wards. A month following the in-service training a second audit will be done on the pre-operative assessment documents. The result of the first audit will be compared to that of the second audit to establish if there was an improvement in the completion of the pre-operative assessment documents.

The population for this study will consist of two elements, unit of analysis and population. The units of analysis will consist of the pre-operative assessment documents of patients who have undergone general anaesthesia for a surgical procedure, before in-service training and after in-service training. The population will be all the Registered Nurses and Enrolled Nurses working in the surgical wards and the operating theatre receiving area in the three hospitals. A non-probability convenience sampling method will be used to select units of analysis.

Inclusion criteria will be the Registered and Enrolled Nurses who work in the surgical wards and the operating theatre receiving areas. In-service will be presented in both day and night staff. These staff from the three hospitals will be invited to participate and consent will be obtained from nurses who are willing to participate in this in-service.

Data will be collected in three steps. Step one and step three will make use of a current audit tool which has been used for the past five years and is available and in use in the three private hospitals included in the study. The tool is aligned with the pre-operative assessment documents in use. Step two will make use of a questionnaire assessing the participants' opinion of the usefulness of the in-service training with regards to the documentation. My study will contribute to the safety of the patient requiring surgery by improving the practice and documentation skills of nurses working in the operating theatre receiving areas and the surgical wards.

I assure you that the names of patients and the personnel will not be revealed and the information obtained will remain confidential. The data will be collected electronically and saved on a password protected computer. Only the supervisor and I will have access to the data. The study has been reviewed and subjected to approval by the Human Research and Ethics Committee. A copy of the report of the study will be made available to you on written request after the completion of the study.

Thank you

Yours sincerely

_____

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APPENDIX F Letter of request permission to use approved Mediclinic Audit Tool

Mrs E. Rajkumar
P.O. Box 551
Umhlanga Rocks
4320
29 March 2016

Mrs Ann Van Zyl
Manager Nursing Education
Mediclinic (Pty) Ltd
P.O.Box 456
Stellenbosch
7599
South Africa

Dear Mrs Van Zyl

PERMISSION TO USE THE MEDICLINIC AUDIT TOOL

My name is Evashini Rajkumar. I am currently a postgraduate student at the University of Witwatersrand in the Department of Nursing Education reading for the degree in Masters of Science in Nursing. As a requirement for my study I would like to request permission from your to institution to use the company's audit tool for my data collection.

A group pre-test – post-test design will be applied to audit pre-operative assessment documents and describe whether in-service training improves the completion of these documents. Audit data will be collected using an audit tool.

My study will contribute to the safety of the patient requiring surgery by improving the practice and documentation skills of nurses working in the operating theatre receiving areas and the surgical wards.

Permission to use the audit tool is purely for the purpose of my research and I would appreciate it if you would inform me if there are any additional requirements.

Thank you

Yours sincerely

_____

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APPENDIX G Data collection tool (AUDIT TOOL)

MEDICLINIC

DATA COLLECTION TOOL

AUDIT: OPERATIVE RECORD (PRE-OPERATIVE RECORD AND FLUID BALANCE RECORD)

AREA	YES	NO	NA	COMMENTS IF NO	/16
Pre-Operative Record					/10
Patient received in theatre noted in Implementation record					1
Patient Sticker / Patient name & file number					1
Allergy Sticker / Nil known / High risk					1
Informed Consent / Pre Operative Record:					
Patient description of procedure - own words (and / or Informed Consent)					1
Is the Booked Procedure the same as Patient's description (does it correlate) (and / or Informed Consent)					1
Premedication administered					1
Patient kept nil per mouth					1
Identification band applied					1
Pre-operative check done					1
Signatures with handover					1
					/6
Fluid Balance Record					
Did patient have an IV					1
Fluid Name					1
Starting & Ending Time					1
Volume Started/ Volume Complete					1
Running Total					1
IV Site Checked					1

APPENDIX H Example of pre-test audit

PRE-TEST (SEPT-OCT 2016)

[redacted]

MEDICLINIC

DATA COLLECTION TOOL

AUDIT: OPERATIVE RECORD (PRE-OPERATIVE RECORD AND FLUID BALANCE RECORD)

AREA	YES	NO	NA	COMMENTS IF NO	9 /16
Pre-Operative Record					8 /10
Patient received in theatre noted in Implementation record		0		No entry made	1
Patient Sticker / Patient name & file number	1				1
Allergy Sticker / Nil known / High risk	1				1
Informed Consent / Pre-Operative Record:					
Patient description of procedure - own words (and / or Informed Consent)	1				1
Is the Booked Procedure the same as Patient's description (does it correlate) (and / or Informed Consent)	1				1
Premedication administered		0		No indication if pre-med admin	1
Patient kept nil per mouth	1				1
Identification band applied	1				1
Pre-operative check done	1				1
Signatures with handover	1				1
Fluid Balance Record					1 /6
Did patient have an IV	1				1
Fluid Name		0		Fluid name not ind.	1
Starting & Ending Time		0		No time	1
Volume Started/ Volume Complete		0		incomplete	1
Running Total		0		incomplete	1
IV Site Checked		0		incomplete	1

APPENDIX I Example of post-test audit

POST- TEST (MAY - JUNE 2017)

MEDICLINIC

[redacted]

DATA COLLECTION TOOL

AUDIT: OPERATIVE RECORD (PRE-OPERATIVE RECORD AND FLUID BALANCE RECORD)

AREA	YES	NO	NA	COMMENTS IF NO	12/16
Pre-Operative Record					9/10
Patient received in theatre noted in Implementation record	1				1
Patient Sticker / Patient name & file number	1				1
Allergy Sticker / Nil known / High risk	1				1
Informed Consent / Pre-Operative Record:					
Patient description of procedure - own words (and / or Informed Consent)	1				1
Is the Booked Procedure the same as Patient's description (does it correlate) (and / or Informed Consent)		0		Booked procedure not same as pt. description	1
Premedication administered	1				1
Patient kept nil per mouth	1				1
Identification band applied	1				1
Pre-operative check done	1				1
Signatures with handover	1				1
Fluid Balance Record					3/6
Did patient have an IV	1				1
Fluid Name	1				1
Starting & Ending Time		0		Not recorded	1
Volume Started/ Volume Complete		0		Not recorded	1
Running Total		0		Not recorded	1
IV Site Checked	1				1

APPENDIX J Information sheet for participants on the attendance of the in-service education programme

INFORMATION FOR PARTICIPANTS OF THE IN-SERVICE WORKSHOPS

IMPROVING THE COMPLETION OF THE PRE-OPERATIVE ASSESSMENT DOCUMENTATION IN A PRIVATE HOSPITAL GROUP IN JOHANNESBURG.

Hello

My Name is Evashini Rajkumar. I am student at the University of Witwatersrand in the Department of Nursing Education reading for the degree in Masters of Science in Nursing. The title of my study is "*Improving the completion of the pre-operative assessment documentation in a private hospital group in Johannesburg*".

I would like to invite you to participate in my study by attending a workshop and filling in a short questionnaire after the in-service training. The information will be anonymous and confidential. You can withdraw from the study at any time without discrimination or penalty. I assure you that all information will remain confidential and anonymous.

The study is based on my concerns regarding the completion of the pre-operative assessment documentation of patients that are scheduled for surgery.

The aim of the study is to audit the pre-operative assessment documentation and improve the completion of the documentation by means of in-service training. In the in-service training we will discuss the documentation and your input will be a valuable contribution and greatly appreciated.

Thank you for your interest and participation

Yours sincerely

_____

STUDENT

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SUPERVISOR

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APPENDIX K Participant letter of consent to participate in research

Permission from the participant

IMPROVING THE COMPLETION OF THE PRE-OPERATIVE ASSESSMENT DOCUMENTATION IN A PRIVATE HOSPITAL GROUP IN JOHANNESBURG

I hereby agree to participate in the study. I have acknowledged the content of the study and understand the content. I do understand that my privacy will be maintained.

I confirm that I have read and understand the information sheet. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected.
I acknowledge that Human Research, Ethics and publications Committee of the faculty of Health Sciences, University of Witwatersrand has approved the study.

I hereby give consent for my records to be used as per the above mentioned conditions for the purposes of research:

PARTICIPANT: _____ DATE: _____

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SUPERVISOR

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APPENDIX L Pre-test Data

		1	2	3
	SECTION 1			
	Pre- Operative Record			
Area 1	Patient received in theatre noted in implementation record	1	0	0
Area 2	Patient sticker/Patient file number	1	1	1
Area 3	Allergy sticker/Nil known/High risk	1	1	0
	SECTION 2			
	Informed Consent/Pre-Operative Record			
Area 4	Patient description of procedure - own words (and/or informed consent)	1	1	1
Area 5	Is the booked procedure the same as the patients description (does it correlate) (and/or informed consent)	1	1	1
Area 6	Premedication administered	0	0	0
Area 7	Patient kept nil per mouth	0	0	0
Area 8	Identification band applied	0	1	0
Area 9	Preoperative check done	1	0	1
Area 10	Signatures with handover	1	1	1
	SECTION 3			
	Fluid Balance Record			
Area 11	Did patient have an IV	1	1	1
Area 12	Fluid name	0	1	0
Area 13	Starting and ending time	0	0	0
Area 14	Volume started / volume completed	0	0	0
Area 15	Running total	0	1	0
Area 16	IV site checked	0	1	0
		8	10	6

	Definition
1	Yes
0	No

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
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0	1	137	0.73	0.5	1	187	137	50
1	1	175	0.94	0.5	1	187	175	12
1	1	151	0.81	0.5	1	187	151	36
1	1	179	0.96	0.5	1	187	179	8
1	1	162	0.87	0.5	1	187	162	25
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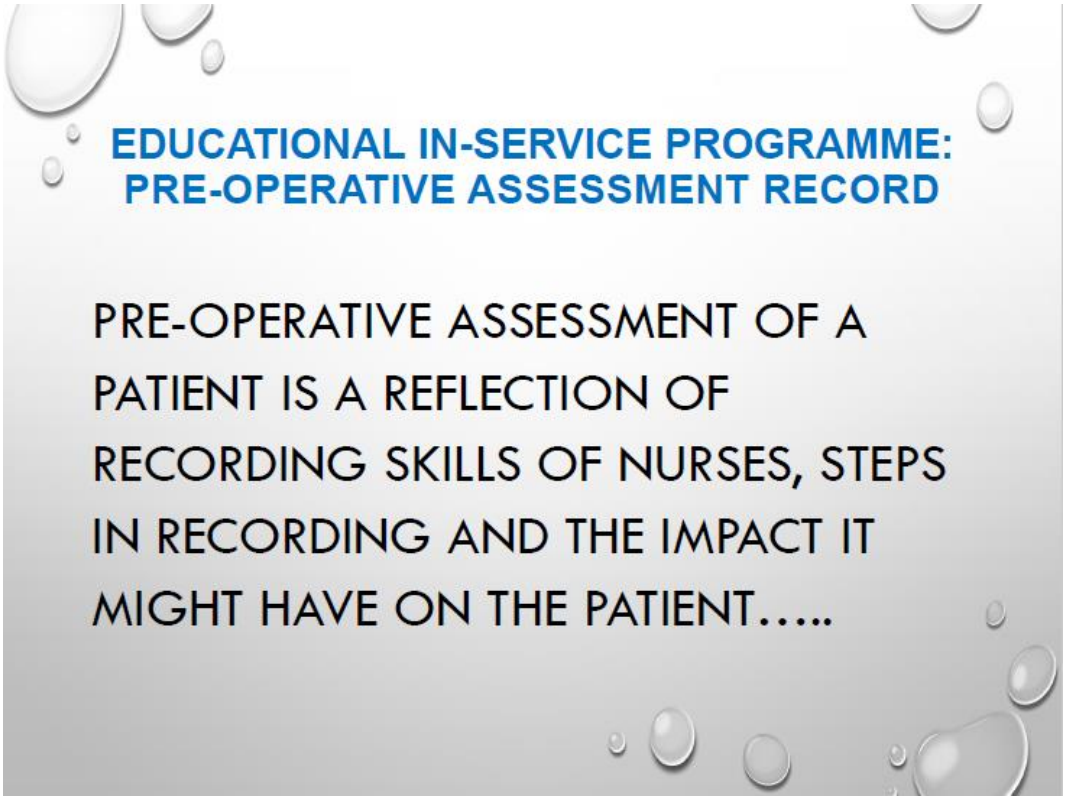
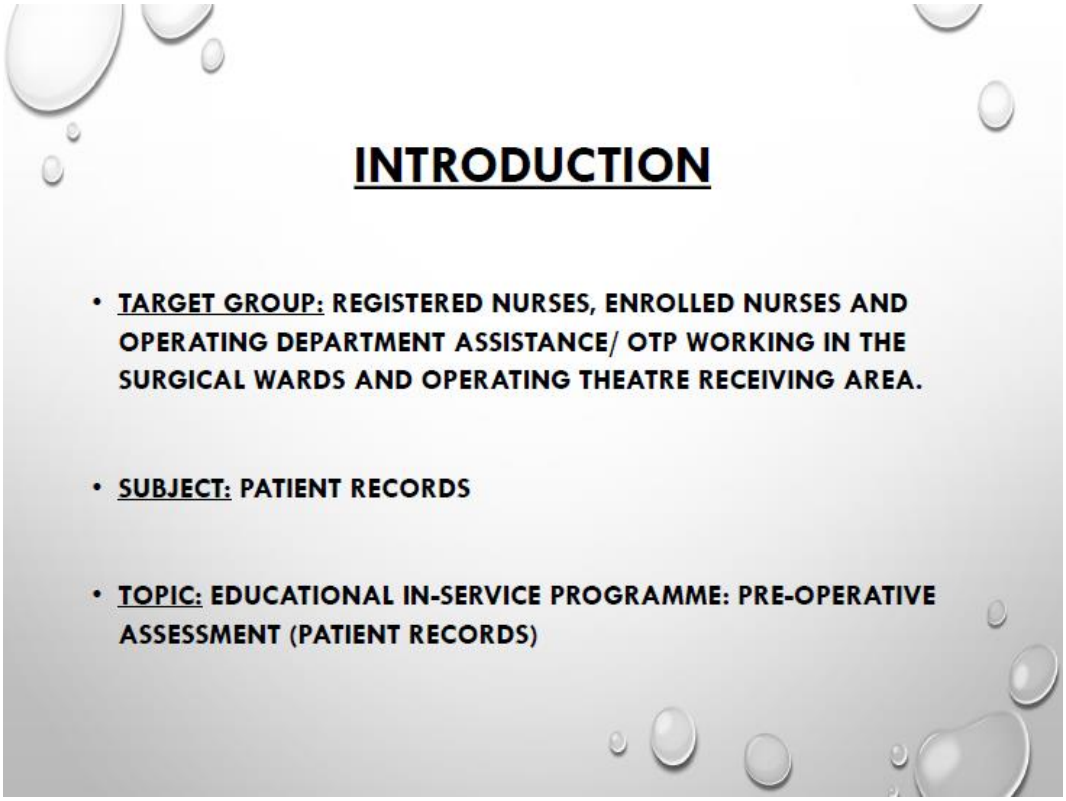
11	12	2011						

APPENDIX M In-service education programme





OUTCOMES

AFTER THE IN-SERVICE EDUCATIONAL PROGRAMME THE NURSING STAFF WILL BE ABLE TO:

- **IMPROVE COMPLETION OF PRE-OPERATIVE ASSESSMENT RECORDS.**
- **IMPROVE STANDARD OF PATIENT CARE AND MINIMIZE SURGICAL RISKS.**

"OK, Mrs. Wagner, you need to get out of your clothes and into this gown."

ASSESSMENT OF PRIOR KNOWLEDGE

- **WHAT IS A PRE-OPERATIVE ASSESSMENT?**
- **LIST YOUR RESPONSIBILITIES IN COMPLETING THE PRE-OPERATIVE ASSESSMENT RECORDS.**

CONTENT

- **DEFINITION OF PRE-OPERATIVE ASSESSMENT:**
- THE BEGINNING OF THE PATIENTS SURGICAL JOURNEY TO UNDERGO A SURGICAL INTERVENTION.
- IT IS THE RESPONSIBILITY OF THE PERI-OPERATIVE NURSE TO ENSURE SAFETY OF THE PATIENT BY ASSESSING, PLANNING AND PRIORITIZING THE PATIENT'S CARE TO ENSURE A DESIRED SURGICAL OUTCOME.
- THE RN OR EN , OBTAINS HISTORY OF THE SURGICAL PATIENT TO GAIN ADEQUATE INFORMATION PRIOR TO COMMENCEMENT OF A SURGICAL PROCEDURE.

PREPARING THE PATIENT FOR SURGERY

- *VIDEO CLIP ON PREPARING THE PATIENT FOR SURGERY (ADMISSION 1)*

CONTENT

- **THE FOLLOWING INFORMATION IS RECORDED ON THE PRE-OPERATIVE ASSESSMENT RECORD:**

1. PATIENT IDENTIFICATION (NAME & SURNAME):

- IDENTIFICATION OF THE PATIENT TO ELIMINATE MEDICO-LEGAL RISKS AND ADVERSE EVENTS (E.G. WRONG PATIENT, INCORRECT PROCEDURE, WRONG SITE)

CONTENT

- IT IS IMPORTANT FOR A PATIENT TO HAVE AN IDENTIFICATION BAND ON ADMISSION TO ENSURE THE CORRECT PROCEDURE IS PERFORMED ON THE RIGHT PATIENT.
- CLARIFICATION OF THE CORRECT PROCEDURE ON THE RIGHT PATIENT IS FURTHER CONFIRMED WITH THE INFORMED CONSENT.
- PATIENT COMPLETES & SIGNS THE CONSENT AND DESCRIBES THE PROCEDURE IN THEIR OWN WORDS WHICH MUST CORRELATE WITH THE BOOKED PROCEDURE & BE SIGNED & DATED BY BOTH THE NURSE & PATIENT.

DID YOU IDENTIFY THE PATIENT CORRECTLY

- *VIDEO CLIP… DID YOU IDENTIFY THE PATIENT CORRECTLY…(2)*

CONTENT

- PATIENTS ARE IDENTIFIED BY ASKING THEM THEIR NAME (INITIALS & SURNAME) AND ALLOWING THE PATIENT TO VERBALLY CONFIRM THEIR NAME.
- THE FOLLOWING IS CHECKED AGAINST THE IDENTIFICATION BAND AND THE PRE-OPERATIVE CHECKLIST:

➢ INITIALS & SURNAME

➢ HOSPITAL NUMBER, AND PATIENT STICKER

➢ OPERATIVE PROCEDURE (SIDE / SITE)

PREVENTING MISTAKES..

- *VIDEO CLIP ON PREVENTING MISTAKES…..(3)*

CONTENT

2. ALLERGIES:

- PATIENTS FAIL TO MENTION ALLERGIES DUE TO CONCERN OVER IMPENDING SURGERY.
- ALLERGIES CAN BE CAUSED BY CLEANING SOLUTIONS, ADMINISTRATION OF MEDICATION OR SURGICAL DRESSINGS USED IN THE OPERATING THEATRE.
- THE SURGEON/ ANAESTHETIST MUST BE INFORMED OF ALLERGIES AND THE ALLERGIES NOTED ON THE PATIENTS RECORD.

MEDIA

- *VIDEO CLIP ON CORRECT PATIENT IDENTIFICATION…..(4)*

CONTENT

3. IF PRE-MEDICATION WAS ADMINISTERED OR NOT:

- **PRE-MEDICATION IS A LIGHT SEDATIVE ADMINISTERED TO A PATIENT FOR OPTIMAL CONDITIONS FOR SURGERY & INCLUDES THE FOLLOWING:**

➢ TO REDUCE ANXIETY

➢ PREVENT ASPIRATION OF GASTRIC CONTENTS

➢ PRODUCE AMNESIA

CONTENT

➢ REDUCES VAGAL REFLEXES DURING INTUBATION

DANGERS OF PRE-MEDICATION:

- PRE-MEDICATION CAN CAUSE THE PATIENT TO BECOME DROWSY AND DISORIENTATED.
- PRECAUTIONARY MEASURES MUST BE TAKEN TO ENSURE PATIENT SAFETY AND THAT THE COT SIDES ARE UP TO PREVENT FALLS.

MEDICATION ERRORS

- *VIDEO CLIP ON MEDICATION ERRORS….(5)*

CONTENT

4. WAS THE PATIENT KEPT NIL PER MOUTH.

- NIL PER MOUTH MUST BE RECORDED ON THE ANAESTHETIC FORM AS WELL AS THE PRE-OPERATIVE ASSESSMENT FORM USED TO HAND OVER THE PATIENT IN THEATRE.
- " NIL PER MOUTH" ABOVE A PATIENTS BED MEANS NOTHING TO EAT OR DRINK.
- IT IS IMPORTANT FOR PATIENTS TO FAST PRE-OPERATIVELY TO ENSURE SAFETY DURING INDUCTION OF GENERAL ANAESTHESIA.
- IT FURTHER PREVENTS THE ASPIRATION OF STOMACH CONTENTS INTO THE LUNGS.

CONTENT

- INTRAVENOUS FLUID IS SOMETIMES ADMINISTERED DUE TO DISRUPTION OF ROUTINE LACK OF FOOD AND DRINK.
- TO NOURISH THE PATIENT & REPLACE BODY FLUIDS & ELECTROLYTES DURING THE PERI-OPERATIVE PERIOD. (PREVENT DEHYDRATION)
- TO ADMINISTER DRUGS.
- RECORDING IN THE FLUID BALANCE CHART IS A CRUCIAL REQUIREMENT TO ESTABLISH THE TYPE & QUANTITY OF FLUID THAT WAS ADMINISTERED. THIS INFORMATION MUST BE CHECKED ON THE PRESCRIPTION CHART PRE-OPERATIVELY IV FLUID WAS ADMINISTERED.

- *IMPORTANCE OF RECORDING IN FLUID BALANCE CHART….(6)*

CONTENT

- CORRECT ADMINISTRATION AND RECORDING IN FLUID BALANCE CHART IS BENEFICIAL TO EVERY PATIENTS OUTCOME AS INDICATED IN THE AUDIT TOOL.

5. WAS A PRE-OPERATIVE CHECK DONE , AND SIGNATURES ON HAND OVER:

- IT IS IMPORTANT TO ENSURE ALL THE ACTIVITIES UNDERTAKEN ARE CHECKED AGAINST THE PRE-OPERATIVE ASSESSMENT RECORD, SIGNATURES COMPLETED ON HAND OVER AT THE OPERATING THEATRE RECEIVING AREA.

CONTENT

- ENSURE THAT THE PRE-OPERATIVE ASSESSMENT RECORD IS TICKED OFF AND SIGNED CORRECTLY.
- THE IMPLEMENTATION RECORD MUST BE COMPLETED AND ALL ENTRIES MUST BE SIGNED.

AUDIT TOOL

- THE AUDIT TOOL USED DURING THE STUDY IS ALIGNED TO THE PRE-OPERATIVE ASSESSMENT RECORDS OF PATIENTS BEING ADMITTED FOR A SURGICAL PROCEDURE UNDER ANAESTHESIA.

MEDICLINIC

APPENDIX C

DATA COLLECTION TOOL

AUDIT: OPERATIVE RECORD (PRE-OPERATIVE RECORD AND FLUID BALANCE RECORD)

AREA	YES	NO	NA	COMMENTS IF NO	/16
Pre-Operative Record					/10
Patient received in theatre noted in Implementation record					1
Patient Sticker / Patient name & file number					1
Allergy Sticker / Nil known / High risk					1
Informed Consent / Pre-Operative Record:					
Patient description of procedure - own words (and / or Informed Consent)					1
Is the Booked Procedure the same as Patient's description (does it correlate) (and / or Informed Consent)					1
Premedication administered					1
Patient kept nil per mouth					1
Identification band applied					1
Pre-operative check done					1
Signatures with handover					1
Fluid Balance Record					/6
Did patient have an IV					1
Fluid Name					1
Starting & Ending Time					1
Volume Started/ Volume Complete					1
Running Total					1
IV Site Checked					1

SUMMARY

- *VIDEO ON PRE-OPERATIVE CHECKLIST (7)*

ASSESSMENT

HAND OUT PRE-OPERATIVE ASSESSMENT RECORDS FOR NURSING STAFF TO AUDIT AND IDENTIFY ERRORS.

SOURCES

1. (PHILLIPS, N. 2013. BERRY & KOHN'S OPERATING ROOM TECHNIQUE. 12TH EDITION. ELSEVIER)
2. MEDICLINIC AUDIT TOOL
3. MEDICLINIC PRE-OPERATIVE ASSESSMENT RECORD
4. YOU TUBE VIDEOS

APPENDIX N Feedback from Educators on the in-service education programme

Rajkumar, Evashini

From: Powell, Elize
Sent: 13 January 2017 06:32 AM
To: Rajkumar, Evashini
Subject: Pre-oprative Assessment.ppt
Attachments: Pre-oprative Assessment.ppt

Dear Eve,

I added comments on the applicable slides starting from slide 4. The content is correct according to the knowledge you want to transfer to the RN's and EN's.

Kind regards.

Elize Powell
Head Educator
MEDICLINIC SOUTHERN AFRICA

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F +27 11 709 2283
M +27 82 672 7696
www.mediclinic.co.za

Rajkumar, Evashini

From: Naicker, Treshika
Sent: 11 January 2017 07:25 AM
To: Rajkumar, Evashini
Subject: RE: RE: Validation of In-Service Educational Programme

No problem ☺.

From: Rajkumar, Evashini
Sent: 11 January 2017 07:22 AM
To: Naicker, Treshika
Subject: RE: RE: Validation of In-Service Educational Programme

Dear Treshika

Thank you for your valuable input and suggestions. Greatly appreciated. Workbook is a great suggestion to achieve the expected outcome.

Thank you

Kind regards

Eve

From: Naicker, Treshika
Sent: 11 January 2017 07:18 AM
To: Rajkumar, Evashini
Subject: RE: RE: Validation of In-Service Educational Programme

Dear Eve

Good day.

I think the power point is a great idea as it helps the audience focus on the message, creating a collaborative environment and being able to easily share the information. I think an inclusion of a Workbook which is filled with practice problems, where the answers can be written directly in the book will help reiterate your objective and allow participants to remember what was taught.
Thus an ideal learning session would comprise of a combination of: audio-visual based content-power point and providing an opportunity to participate through exercises.

It's just a suggestion.

Regards Tresh ☺

From: Rajkumar, Evashini
Sent: 18 January 2017 09:38 AM
To: De Lange, Santel
Subject: RE: Pre-oprative Assessment.ppt

Dear Santel

Thank you for the positive feedback. I will implement the changes you recommended.

Kind regards

Eve

From: De Lange, Santel
Sent: 18 January 2017 09:31 AM
To: Rajkumar, Evashini
Subject: RE: Pre-oprative Assessment.ppt

Hi there

How are you? Still surviving in class?

At last I had a look at you PPP ☺.

My feedback:

1. At the outcomes: Is this according to your research outcomes? I think it sounds a bit negative to say you are going to improve (as in research, we know there is a problem but we need to say it in a positive way) ☺
2. With outcomes I suggest: 1st outcome: More accurately complete pre-operative assessment records, outcome 2: Provide effective patient care and minimize surgical risks.
3. The testing of prior knowledge and content looks good, easy to understand and well explained ☺
4. Then at the summary it says media: poster, but the poster is not on there, so I can't evaluate it ☺
5. And with assessment I am not sure which power point you are referring to, so can't evaluate that one
6. Then the last slide sources: I will just add the sources where you got the audit tool from (policy/ procedure), as well as the policy or procedure where on the completion of the pre-operative document. And also refer to it during your content where you explain to them how to complete the document.

That is it from me. Hope it helps.

Have a good day

Rajkumar, Evashini

[redacted]

From: Davis, Colleen
Sent: 16 January 2017 03:52 PM
To: Rajkumar, Evashini
Subject: RE: In-Service Educational Programme

Pleasure ☺

From: Rajkumar, Evashini
Sent: 16 January 2017 12:45 PM
To: Davis, Colleen
Subject: RE: In-Service Educational Programme

Dear Colleen

Thank you for your valid input and contribution. It is genuinely of great help.

Thank you

Kind regards

Eve

From: Davis, Colleen
Sent: 16 January 2017 11:55 AM
To: Rajkumar, Evashini
Subject: RE: In-Service Educational Programme

Hi Eva

Well done on doing this. You are almost there ☺

Just one comment about the power point presentation. As it stands now, it is great for notes but not great for getting the content across to the staff. The content is good (as far as I can see without checking it) but the formatting needs to be adjusted.

There is too much content per slide. Our eyes and brains cannot take it all in. You will be presenting the content to them. Perhaps you can have more of a group discussion to brain storm what they already know before the slides. This will wake up and focus their brain on the content you want them to concentrate on and remember. They will remember the discussion more than the slides.

Perhaps use key words or pictures and hand out notes instead of a full slide.

That is just my 2cents worth.

Hope it is helpful

kind regards

Colleen

Rajkumar, Evashini

From:	de Kock, Carina
Sent:	18 January 2017 08:48 AM
To:	Rajkumar, Evashini
Subject:	RE: In-Service Educational Programme
Attachments:	Pre-operative Assessment PP - Eve feedback.ppt

Hi Eve,

Please find my feedback on your Power Point attached.

I've put in some comments and where I changed something, I did that in BLUE.

Well done for coming so far – the last stretch is almost over – **GOOD LUCK!!!**

Kind regards,

CARINA DE KOCK
NURSE EDUCATOR: THEATRE
MEDICLINIC LTD LEARNING CENTRE CAPE REGION (S917)
Tijgerpark 1, Willie Van Schoor Drive, BELLVILLE, 7530
P.O Box 5228, TYGERVALLEY, 7536
T: +27 21 943 6000
M: +27 84 4034858
E: carina.dekock@mediclinic.co.za

Rajkumar, Evashini

From:	Griessel, Carina
Sent:	11 January 2017 02:16 PM
To:	Rajkumar, Evashini
Subject:	RE: In-Service Educational Programme
Attachments:	Pre-oprative Assessment presentation with comments.ppt; Proposal with comments up to page 7.docx
Importance:	High

Dear Evashini,

I have briefly looked at your research proposal – I think your approach is spot on.

I would be careful to state that documentation skills will improve the outcome – I would ensure the theme of also making sure the nurses understand the relevance of the pre-operative "checks", is threaded into my documentation. The outcome of poor documentation in this instance, could harm patients.

Great work.

I have to apologise for not being able to assist in-depth at this stage – we are currently busy with one of the most challenging projects in theatre and we are starting the pilot in 3 weeks in Tshwane – I am therefore overstretched.

Good luck and I would love to see the final outcomes.

Kind Regards

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APPENDIX O Post-test Data

		1	2	3
	SECTION 1			
	Pre- Operative Record			
Area 1	Patient received in theatre noted in implementation record	1	1	1
Area 2	Patient sticker/Patient file number	1	1	1
Area 3	Allergy sticker/Nil known/High risk	1	1	1
	SECTION 2			
	Informed Consent/Pre-Operative Record			
Area 4	Patient description of procedure - own words (and/or informed consent)	1	1	1
Area 5	Is the booked procedure the same as the patients description (does it correlate) (and/or informed consent)	1	1	1
Area 6	Premedication administered	1	1	1
Area 7	Patient kept nil per mouth	1	1	1
Area 8	Identification band applied	1	1	1
Area 9	Preoperative check done	1	1	1
Area 10	Signatures with handover	1	1	1
	SECTION 3			
	Fluid Balance Record			
Area 11	Did patient have an IV	1	1	1
Area 12	Fluid name	1	1	1
Area 13	Starting and ending time	0	1	1
Area 14	Volume started / volume completed	0	1	1
Area 15	Running total	0	1	1
Area 16	IV site checked	1	1	1
		13	16	16

	Definition
1	Yes
0	No

4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
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12	8	12	8	8	12	11	11	11	12	11	16	10	16	12	11	16	15	10	12	12	13	12	12	11	12

186	187	Total Count	Mean	Median	Mode	Sample	Yes	No
1	1	179	0.96	0.5	1	187	179	8
1	1	183	0.98	0.5	1	187	183	4
1	1	182	0.97	0.5	1	187	182	5
1	1	172	0.92	0.5	1	187	172	15
1	1	156	0.83	0.5	1	187	156	31
1	1	146	0.78	0.5	1	187	146	41
1	1	177	0.95	0.5	1	187	177	10
1	1	175	0.94	0.5	1	187	175	12
1	1	177	0.95	0.5	1	187	177	10
1	1	170	0.91	0.5	1	187	170	17
1	0	171	0.91	0.5	1	187	171	16
1	0	170	0.91	0.5	1	187	170	17
1	0	87	0.47	0.5	0	187	87	100
1	0	86	0.46	0.5	0	187	86	101
1	0	86	0.46	0.5	0	187	86	101
1	0	128	0.68	0.5	1	187	128	59
16	10	2445						

APPENDIX P Participant satisfaction questionnaire of in-service education

Programme

IMPROVING THE COMPLETION OF THE PRE-OPERATIVE ASSESSMENT DOCUMETATION IN A PRIVATE HOSPITAL GROUP IN JOHANNESBURG

QUESTIONNAIRE BASED ON SATIFACTION OF THE IN-SERVICE WORKSHOP

SECTION A

Please select the appropriate option for the following questions.

1. **How many years of nursing experience do you have?**

> 1 - 5 ☐

1 - 5 ☐

5 - 10 ☐

10 - 15 ☐

Over 20 ☐

2. **How many years have you worked in the operating theatre receiving area or the surgical ward?**

> 1 - 5 ☐

1 - 5 ☐

5 - 10 ☐

10 - 15 ☐

Over 20 ☐

SECTION B

Please select the best option for each of the following questions.

3. **It is important to complete the documents accurately for patient safety.**

Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Strongly Disagree	Somewhat Disagree
○	○	○	○	○

4. **What did you enjoy the most about the workshop?**

   The information provided ☐

   The interaction ☐

   The guidance provided to complete the document ☐

5. **Was sufficient time allocated to the workshop?**

   Yes ☐

   No ☐

6. **What other issues not included in this in-service training workshop would you like?**

   _____

   _____

7. **Completion of the pre-operative assessment document is the clinical foundation of patient management.**

Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Strongly Disagree	Somewhat Disagree
○	○	○	○	○

8. The correct completion of the pre-operative assessment document can reduce operative risks.

Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Strongly Disagree	Somewhat Disagree
◯	◯	◯	◯	◯

APPENDIX Q Feedback from Educators on the participant satisfaction of questionnaire

Educator 1

I like this one better.

APPENDIX L

IMPROVING THE QUALITY OF THE PRE-OPERATIVE ASSESSMENT DOCUMETATION IN A PRIVATE HOSPITAL GROUP IN JOHANNESBURG

QUESTIONNAIRE BASED ON SATIFACTION OF THE IN-SERVICE WORKSHOP

SECTION A

Demographic data

Please select the appropriate option for the following questions.

1. What is your gender?

Male ☐ Female ☐

2. What is your Ethnicity?

Black ☐

White ☐

Coloured ☐

Indian ☐

Other ☐

Other _____ (please specify)

3. Which age category below includes your age?

18 - 25 ☐

25 - 35 ☐

35 - 45 ☐

45 or older ☐

SECTION B

Please select the best option for each of the following questions.

1. Did the in-service workshop meet your needs?

Yes ☐

No ☐

I don't know ☐

2. Did you understand the importance of completing in the completion of the pre-operative assessment document?

Yes ☐

No ☐

I need more clarity ☐

3. I am afraid that I could still make errors as I am still unclear of my duties.

A. Always ☐

B. Occasionally ☐

C. Never ☐

D. Often ☐

Rather use this for all questions

Key

4. I feel encouraged after the in-service workshop to come up with better ways of completing the pre-operative document.

Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
○	○	○	○	○

5. I understand why it is important for me to correctly complete the pre-operative assessment document.

Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
○	○	○	○	○

6. How satisfied are you with the information you received regarding the completion of the pre-operative assessment document?

Very Satisfied	Somewhat Satisfied	Neither Satisfied nor Dissatisfied
○	○	○

7. How did you find the length of the in-service workshop?

Too long ☐ Too short ☐

8. What other issues not included in this in-service workshop do you need to be addressed ?

_____

_____

9. Are you satisfied with the quality of the pre-operative assessment document?

Yes ☐

No ☐

10. List 2-3 things ~~do~~ we need to work on to improve the quality of the pre-operative assessment document?

Educator 2

It's good.

APPENDIX L

IMPROVING THE COMPLETION OF THE PRE-OPERATIVE ASSESSMENT DOCUMETATION IN A PRIVATE HOSPITAL GROUP IN JOHANNESBURG

QUESTIONNAIRE BASED ON SATIFACTION OF THE IN-SERVICE WORKSHOP

SECTION A

Please select the appropriate option for the following questions.

1. How many years of nursing experience do you have?

> 1 - 5

1 - 5

5 - 10

10 - 15

Over 20

2. How many years have you worked in the operating theatre receiving area or the surgical ward? 3 combined

alignment to correct

> 1 - 5

1 - 5

5 - 10

10 - 15

Over 20

SECTION B

Correct numbering

Please select the best option for each of the following questions.

1. It is important to complete the documents accurately for patient safety.

Strongly Agree Somewhat Agree Neither Agree nor Disagree Strongly Disagree Somewhat Disagree

4. What did you enjoy the most about the workshop?

The information provided

The interaction

The guidance provided to complete the document

5. Was sufficient time allocated to the workshop?

Yes

No

6. What other issues ~~not included~~ would you include but were not covered in this in-service training workshop would you like?

7. Completion of the pre-operative assessment document is the clinical foundation of patient management.

✓ Strongly Agree Somewhat Agree Neither Agree nor Disagree Strongly Disagree Somewhat Disagree

Alignment.

8. The correct completion of the pre-operative assessment document can reduce operative risks.

Strongly Agree Somewhat Agree Neither Agree nor Disagree Strongly Disagree Somewhat Disagree — Agree

Educator 3

APPENDIX L

IMPROVING THE QUALITY OF THE PRE-OPERATIVE ASSESSMENT DOCUMETATION IN A PRIVATE HOSPITAL GROUP IN JOHANNESBURG

QUESTIONNAIRE BASED ON SATIFACTION OF THE IN-SERVICE WORKSHOP

SECTION A

Demographic data

Please select the appropriate option for the following questions.

1. What is your gender?

Male ☐ Female ☐

2. What is your Ethnicity?

Black ☐

White ☐

Coloured ☐

Indian ☐

Other ☐

Other _____ (please specify)

3. Which age category below includes your age?

18 - 25 ☐

25 - 35 ☐

35 - 45 ☐

45 or older ☐

SECTION B

Please select the best option for each of the following questions.

1. Did the in-service workshop meet your needs?

Yes ☐

No ☐

I don't know ☐

2. Did you understand the importance in the completion of the pre-operative assessment document?

Yes ☐

No ☐

I need more clarity ☐

3. I am afraid that I could still make errors as I am still unclear of my duties.

A. Always ☐

B. Occasionally ☐

C. Never ☐

D. Often ☐

4. I feel encouraged after the in-service workshop to come up of better ways of completing the pre-operative document.

Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
○	○	○	○	○

5. I understand why it is important for me to correctly complete the pre-operative assessment document.

Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
○	○	○	○	○

6. How satisfied are you with the information you received regarding the completion of the pre-operative assessment document?

Very Satisfied	Somewhat Satisfied	Neither Satisfied nor Dissatisfied
○	○	○

7. How did you find the length of the in-service workshop?

Too long ☐ Too short ☐ just right ☐ :)

8. What other issues not included in this in-service workshop do you need to be addressed ? (is this general issues, or issues ie. the pre op form)

_____

_____

9. Are you satisfied with the quality of the pre-operative assessment document?

Yes ☐

No ☐

10. List 2-3 things do we need to work on to improve the quality of the pre-operative assessment document?

Educator 4

APPENDIX L

IMPROVING THE COMPLETION OF THE PRE-OPERATIVE ASSESSMENT DOCUMETATION IN A PRIVATE HOSPITAL GROUP IN JOHANNESBURG

QUESTIONNAIRE BASED ON SATISFACTION OF THE IN-SERVICE WORKSHOP

SECTION A

Please select the appropriate option for the following questions.

1. How many years of nursing experience do you have? as a qualified RN.

> 1 - 5

1 - 5

5 - 10

10 - 15

Over 20

2. How many years have you worked in the operating theatre receiving area or the surgical ward?

> 1 - 5

1 - 5

5 - 10

10 - 15

Over 20

SECTION B

Please select the best option for each of the following questions.

3. It is important to complete the documents accurately for patient safety.

Strongly Agree Somewhat Agree Neither Agree nor Disagree Strongly Disagree
Somewhat Disagree

4. What did you enjoy the most about the workshop?

The information provided ← are these not the same thing?

The interaction

The guidance provided to complete the document

5. Was sufficient time allocated to the workshop?

Yes

No

6. What other issues regarding the pre-op form? not included in this in-service training workshop would you like? training on?

7. Completion of the pre-operative assessment document is the clinical foundation of patient management.

8. Strongly Agree Somewhat Agree Neither Agree nor Disagree Strongly Disagree Somewhat Disagree

8. The correct completion of the pre-operative assessment document can reduce operative risks.

9. Strongly Agree Somewhat Agree Neither Agree nor Disagree Strongly Disagree Somewhat Disagree

Educator 5

APPENDIX L Like the type of Questions

IMPROVING THE QUALITY OF THE PRE-OPERATIVE ASSESSMENT DOCUMETATION IN A PRIVATE HOSPITAL GROUP IN JOHANNESBURG

QUESTIONNAIRE BASED ON SATIFACTION OF THE IN-SERVICE WORKSHOP

SECTION A

Demographic data

Please select the appropriate option for the following questions.

1. What is your gender?

Male ☐ **Female** ☐

2. What is your Ethnicity?

Black ☐

White ☐

Coloured ☐

Indian ☐

Other ☐

Other _____ **(please specify)**

3. Which age category below includes your age?

18 - 25 ☐

25 - 35 ☐

35 - 45 ☐

45 or older ☐

SECTION B

Please select the best option for each of the following questions.

1. Did the in-service workshop meet your needs?

Yes ☐

No ☐

I don't know ☐

2. Did you understand the importance in the completion of the pre-operative assessment document?

Yes ☐

No ☐

I need more clarity ☐

3. I am afraid that I could still make errors as I am still unclear of my duties.

A. Always ☐

B. Occasionally ☐

C. Never ☐

D. Often ☐

4. I feel encouraged after the in-service workshop to come up of better ways of completing the pre-operative document.

Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
○	○	○	○	○

5. I understand why it is important for me to correctly complete the pre-operative assessment document.

Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
○	○	○	○	○

6. How satisfied are you with the information you received regarding the completion of the pre-operative assessment document?

Very Satisfied	Somewhat Satisfied	Neither Satisfied nor Dissatisfied
○	○	○

7. How did you find the length of the in-service workshop?

Too long ☐ Too short ☐

8. What other issues not included in this in-service workshop do you need to be addressed ?

_____

_____

9. Are you satisfied with the quality of the pre-operative assessment document?

Yes ☐

No ☐

10. List 2-3 things do we need to work on to improve the quality of the pre-operative assessment document?

Educator 6

APPENDIX L

IMPROVING THE COMPLETION OF THE PRE-OPERATIVE ASSESSMENT DOCUMETATION IN A PRIVATE HOSPITAL GROUP IN JOHANNESBURG

QUESTIONNAIRE BASED ON SATIFACTION OF THE IN-SERVICE WORKSHOP

SECTION A

Please select the appropriate option for the following questions.

1. How many years of nursing experience do you have?

> 1 - 5

1 - 5

5 - 10

10 - 15

Over 20

2. How many years have you worked in the operating theatre receiving area or the surgical ward?

(>1 - 5) Do you want to say less of more

(1 - 5) — Some of

5 - 10

10 - 15

Over 20

SECTION B

Please select the best option for each of the following questions.

3. It is important to complete the documents accurately for patient safety.

Strongly Agree Somewhat Agree Neither Agree nor Disagree Strongly Disagree Somewhat Disagree

4. What did you enjoy the most about the workshop?

The information provided

The interaction

The guidance provided to complete the document

5. Was sufficient time allocated to the workshop?

Yes

No

6. What other issues not included in this in-service training workshop would you like?

7. Completion of the pre-operative assessment document is the clinical foundation of patient management.

8. Strongly Agree Somewhat Agree Neither Agree nor Disagree Strongly Disagree Somewhat Disagree

8. The correct completion of the pre-operative assessment document can reduce operative risks.