



**EXPLORING PATIENTS' HANDOVER PROCESS BETWEEN
OPERATING ROOM TEAM MEMBERS AND POST ANESTHESIA
CARE UNIT NURSE:**

A CASE OF UNIVERSITY TEACHING HOSPITAL OF BUTARE RWANDA

By

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Master's in Nursing – Perioperative track

June 2017



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College of Medicine and Health Sciences, School of Nursing and

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DECLARATION

I, NZAMURAMBAHO HUMURE Philippe, do hereby declare that this **dissertation** submitted in partial fulfilment of the requirements for degree of **MASTERS OF SCIENCE** in **NURSING** at the University of Rwanda, College of Medicine and Health Sciences, is my original work and has not previously been submitted elsewhere. Also, I do declare that a complete list of references is provided indicating all the sources of information quoted or cited from the literature.

Date and signature of the student

.....

DEDICATION

I would like to dedicate this project to the Almighty God whose special blessing and love made this work a success. To my parents and friends for their encouragement and support. To my co-worker for their patience with me throughout the stress and success of the schooling process and the completeness of this project. And also my classmates, with whom I have been blessed to share this journey and for whom I have great respect.

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I extend my sincere thanks to all I have not mentioned and whose contribution to the completion of this study was valuable.

ABSTRACT

Background: Handover failures are common in healthcare settings and lead to different adverse patient outcomes and complications. The complexity of perioperative environment and the condition in which surgical patients are handed over to postanesthesia care (PACU) nurses make surgical patients the most vulnerable to handover failures and associated complications.

Problem statement: Lack of standardized process, irrelevance or absence of core team members, noise, distractions and interruptions threaten the quality of handovers.

The aim of this study was to explore the process of patient care handover between the OR team and PACU nurses, staff compliance with tasks and information transfer to the PACU nurse at CHUB.

Methods: A prospective observational study using cross-sectional design was conducted on patients and staff involved in admission to the PACU of the University Teaching Hospital of Butare (CHUB), south Rwanda. A sample of 109 admissions was calculated using Yamane's formula and a checklist adopted from the one developed validated and utilized in two hospitals of London. A single researcher observed handover and completed the checklist accordingly. Data was analyzed through SPSS version 21 Statistics and presented in tables and charts showing percentages.

Results: Only 89% patients were handed over, the team handing over was complete in only 0.9%, and tasks execution and attentiveness of the staff complied 15.6% with the protocol. Most of the essential information items were conveyed in less than 60% however all pieces of surgical related information was conveyed less than 10%.

Conclusion: Postoperative Patients handovers practice in CHUB was noted to have gaps that pose risks. There is no standardized process, the staff rely on memory and information transfer was characterized by heterogeneity and incompleteness, whereby

Recommendations: Standardization of the process, use of postoperative handover checklist, staff trainings researches on postoperative patient handover are essential to improve quality and safety of postoperative patient care at CHUB.

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LISTE OF ACRONYMS AND ABBREVIATIONS

- AORN:** Association of periOperative Registered Nurses
- APNS :** Advanced Practice Nurses
- CHUB:** Centre Hospitalier Universtaire de Butare (University Teaching Hospital of Butare)
- CS:** Caesarean section
- DVT:** Deep Vein Thrombosis
- GO:** Gynaecology& obstetrics
- Hb:** Haemoglobin
- ICU:** Intensive Care Unit
- Iv:** Intravenous
- OR:** Operating Room nurse
- PACU:** Postanesthesia care unit
- RN:** registered nurse
- PACU:** Post anesthesia care unit
- RN:** Registered Nurse
- SEM:** Socio ecological model
- UR:** University of Rwanda
- WHO:** World Health Organization

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CHAPTER 1: INTRODUCTION

1.2. DEFINITIONS OF KEY TERMS

Handover: a transfer of information and responsibility from one person to another

Handoff: term which is used interchangeably with handover

Post anesthesia care unit (PACU): a service unit of health care designed to receive surgical patients directly after surgery. It was developed to reduce immediate complications related to surgery and anesthesia.

PACU nurse: registered nurses with enough knowledge and skills to care for patients who underwent surgery in the immediate post-operative period assigned to work in the post-anesthesia care unit. These nurses need to be hard-working regarding assessment and monitoring patients and be able to multitask as they may be receiving and monitoring different patients at a time

Process: a series of actions of a continuous operation aiming to some end.

Theatre team members: a group of individuals with a variety of knowledge and skills, working in theatre with the same objective of delivering safe surgery and better outcomes of surgical patients. It is mainly comprised of circulating nurse, scrub nurse, surgeon and assistant and anesthesia provider and anesthesia assistant.

University teaching hospital of Butare (CHUB): : Is a public referral and teaching hospital located in Southern Province, Huye District, Ngoma Sector which offers specialized care to patients referred from District Hospitals of Southern Province and south part of Western Province of Rwanda as well as people from other areas and countries who come to seek for health care.

1.2. BACKGROUND

Handover of patient care is a moment when an interactive communication is held to allow the opportunity for discussion and questioning between the giver and receiver of patient information (Nagpal et al. (2013 p. 495). However that phase of care is associated with miscommunication and inaccurate information transfer which result in medical errors and various adverse outcomes of patient care (Boat & Spaeth, 2013, p. 647). Effective communication among healthcare workers especially during handover, is the core stone for the delivery of quality health care. This precious value of communication among health workers results from its character of insuring safety and continuity of patient care, through enhancing teamwork and multidiscipline goals achievement. The Joint Commission reported that, defect in communication between healthcare providers while handing over patients is associated with medical errors and many adverse patients' outcomes. These count 80% of all healthcare associated errors (The Joint Commission, 2012, p.1).

Good quality handover is attributed to being a central element to the success of health care delivery, since any patient handover intends primarily to accurately transfer information describing a patient's health condition, the ongoing treatment and plan of compulsory care to ensure that the continuity and safety of patient care is guaranteed (Nagpal et al., 2013, p. 495).

Clinical handover is an inevitable reality of taking care of patients and occurs in different areas and conditions such as between clinical settings, between working shift, between various health professions and between different healthcare institutions (Nila S. Radhakrishnan , 2015, p.2; Manias et al.,2015, p.1). However, theatre environment is a complex setting because various caregivers in various disciplines interact with patients within a short period of time with impressive number of checkpoints and changeovers happening all over the continuum of perioperative phase (preoperative, intraoperative, and postoperative phases). That makes surgical patients the most vulnerable to inaccuracy of information transferred during handover and complications resulting from handover failure (Nagpal et al., 2010, p.171; Robins and Dai, 2015, p.264).

The understanding of the postoperative handover process through questions of where, how and what a handover message must cover has become a good topic of discussion for many researchers. The literature explains that there are several means and ways of carrying out handoff communication which depends on healthcare settings or location and the communication style within setting. It was also shown that each type of handover process can have its own advantages/disadvantages. (Abraraw Lehuluante, 2013, p.4)

In many healthcare settings verbal report is given by an anesthesia provider to the post anesthesia care unit registered nurse (PACU RN), and discussion is held between them for clarification of the transferred information. Accurate and detailed information about the patient's medical history, intraoperative events, and postoperative plan are taken in discussion. From that information, the PACU RN assumes the continuity of care until the client is fully recovered from anesthesia, and meets criteria for discharging a patient from recovery room (Robins and Dai 2015, p.264).

However, some literature find this not fair and suggest that postoperative handover should consist of a multidisciplinary team including surgeon, anesthesia provider, surgical nurse, OR (nurse). According to Abraraw Lehuluante (2013, p. 15), in addition to the information provided by the anesthetist the surgical nurses should be present to convey information concerning the surgical site, estimated blood loss, type of implant used if any, outcome of the procedure etc. In their literature search, Segall et al. (2012, p.110) found that many studies insist on the presence of the surgeon at handover site to convey surgical related information and discuss the care plan with other team members. It was therefore judged ineffective to let the anesthesia provider alone take the responsibility to convey all pertinent postoperative information because it was attributed to be neither realistic nor a suitable approach to enhance teamwork.

The author further identified common barriers to safe and effective postoperative handovers. Among others, absence of some team members, unsteadiness and unorganized process, lack of preparation prior to the patient transport, multitasking of the PACU team and distractions,

the incomplete transfer of information, other communication problems including erroneous information, too much information, as well as inattention to the clinical tasks, and lack homogeneity (Segall et al., 2012, p.110).

For effective postoperative handover the staff should not rely on the memory only, and the research suggests implementation of structured process of handing over. It is in that regard that Segall et al., (2012, p.107) suggest implementation of strategies including: Preparation of equipment, monitor, alarms, fluids prior to patient arrival, fulfil all vital care tasks previous to the oral handover, follow the handover sequence, make it face to face interaction, assure the presence of all OR team members (sender) and PACU nurse at the bedside of the patient, speak in chronological order (one at a time as others are attentively listening).

The literature shows that many studies recommended the standardization of the handing over process (Yang and Zhang, 2016; p.1071; Long, 2016; p.41; Arora and Julie Johnson, 2006, p.648). Yang and Zhang, 2016; p.1071 emphasized on the presence of the surgeon at the bedside to convey surgical related information as well as specific goals to work toward. In addition, Mukhopadhyay et al., 2014, p.782) cited from various literature that” lack of face-to-face interaction is one of the major reasons for communication failure , which may lead to information omissions”. They also suggested that handover sequence should consider the following steps: **Pre handover:** before the patient’s arrival, there should be preparation of the receiving team and equipment. **Arrival:** once the patient arrives to the receiving area, urgent clinical tasks must be completed before information transfer. **Handover meeting (information transfer):** subsequent to the completeness of urgent tasks, the anesthesia specific information is transferred by anesthetist and then the surgeon follows with surgical specific information. **Post handover:** the receiving part performs a checking and care plans is proposed then an opportunity given to both the sending and receiving team sides to ask questions and discussions take place (Manser & Foster, 2011, p.182; Yang and Zhang, 2016 p.1066). The authors further suggested that postoperative handover should be face to face interaction for communication allowing team member to speak one at time rather than written documents only.

Omission or poor performance of one of these steps lead to ineffective and error prone handover process. In addition current practice focuses on handover meeting alone and leaves behind other phases of the process. Furthermore research revealed that environmental and task factors can also threaten the quality of handover. Those factors consist of noise, multitasking of whichever side of the staff involved, interruption and other activities (e.g., attaching monitoring equipment or intravenous infusion devices), when they take place concomitantly to the verbal handover (Segall, et al., 2012, p.110). Also these authors recommended availing an adequate time for handover and restriction of interruptions.

Missing or fragmented information may result from inaccurate handover process and trigger life threatening adverse events like delays in medical diagnosis, wrong treatment, prolonged length of stay, increased health care expenditure, patient complaints and possible increase of morbidity and mortality (Nagpal et al., 2013, p.495).

Despite the importance of patients care handoff, and complication resulting from inaccurate information transfer, failures in that process are common in health care facilities worldwide and the handover of patients after surgery to the post anesthesia care unit (PACU) or intensive care unit (ICU) is the most exposed to information loss due to the complexity of those units of care (Segall et al., 2012 , p.110). The authors further stated that “information transfers in postanesthesia care unit are characterized by poor teamwork and communication, associated with patients arriving in a compromised state, unclear procedures, technical errors, unstructured processes, interruptions and distractions, lack of central information repositories, and nurse inattention because of multitasking”.

A study undertaken within a busy gastrointestinal surgical department of a large London teaching hospital showed that only 55.8% of the important information was report from the OR to the PACU suite (Nagpal et al., 2010).

A study done in Germany demonstrated that information transfer during post-operative handovers from anesthesiologists to the staff in the PACU showed incompleteness of information in most of cases. Information like patient’s name and type of surgery was

communicated in many cases, whereas other items were talked about less frequently. For instance initiation of pain treatment was reported 12% of cases, antibiotic therapy 14% and fluid management was conveyed in 15% of the cases. However, a number of the elements that were rarely conveyed, such as postoperative pain management, and fluid management are critical in postoperative care (Milby et al., 2014, p.194)

In many parts of the world including African countries, failures in post operative handoff of patients and associated complications is poorly documented, but as cited by Haynes et al., (2009 p.492). Studies in industrialized countries revealed 0.4 to 0.8% perioperative rate of death from patient admitted in surgery and 3 to 17%, of major complications with a substantial number resulting from miscommunication especially during handoff of patient care. These rates are expected to be much higher in middle and low income countries as well as Africa including Rwanda. Surgical care and related complications characterize extensive burden of illness. Therefore researchers have worthy shifted their attention from the public health community to perioperative healthcare worldwide (Haynes et al., 2009).

Different studies showed potential improvement in quality of handoff of patients care and information transfer in post operative care unit as a result of harmonization of handover process and standardization of information transfer (Salzwedel et al., 2013, p.4; Segall, et al., 2012, p110). Therefore different organizations such as the World Health Organization, Australian Commission, International Centre for Patient Safety and medical personnel recommended the standardization of information transferred during post operative handoff of patient care to optimize surgical outcomes and minimize complications associated with ineffective handover process and information transfer (Salzwedel et al., 2013, p.1).

The researcher couldn't find data about quality of post anesthesia patient care handoff process in sub Saharan Africa, a region in which Rwanda is localized. In Rwanda failures of postoperative handover and associated burden of disease are not documented. However there is no doubt that handover failure and related patient adverse outcomes do exist in the country.

The University Teaching Hospital of Butare (CHUB) has adopted international standards of best practice to improve patient safety and minimize medical errors. Guidelines, policies and procedures are in place others are being developed for that purpose. The hospital has checklists for patients' safety, for better running of surgical care, and better outcome of operated patients. These include preoperative checklist that help in handing over patients from the wards to theatre nurses in the waiting area. Surgical safety checklists that are used in theatre to strengthen team communication and steadiness of care are a way to minimize complications related to surgery and perioperative deaths. All these activities are of low importance if measures to insure the safety and continuity of care in post operative period are not established and harmonized, as the product of surgery can be compromised by poor post operative care which can result from omitted or ineffective handover.

1.3. PROBLEM STATEMENT

Handover failures are common in different areas of healthcare facilities. Incomplete handover has been associated with various adverse effects contributing to increased morbidity and mortality. Surgical patient are the most vulnerable to the risks and complications related to handover failures worldwide (Walt and Joubert , 2014, p. 4). As mentioned above, aiming to optimize surgical care and minimize surgical complications associated to PACU handoff failures, different organizations including WHO suggested standardization of handover process and information transfer during handover process and development of PACU handover checklists. There is a significant improvement in quality of information transfer and patient care handoff in different areas where handover checklists were implemented. In CHUB theatre, records of last 6 months show that an average of 150 patients is admitted in that unit every month. However data about PACU handover process and associated complications is missing in the hospital. According to anecdotal observation, only one nurse per shift is assigned to work in PACU yet the unit contains 8 beds receiving patients from 4 operating rooms whereas the guidelines recommend a PACU staffing number allowing one-to-one observation of every patient until airway control is regained, respiratory and cardiovascular are stable, and the consciousness restored (Whitaker et al., 2013, p.5).

This can be one of common threats of effective postoperative handovers illustrated in the literature as it can result in high workload, hurried handover, and nurse inattention because of multitasking, interruptions and distractions such as doing other clinical activities parallel to the transfer of information during the handover. Moreover, patients incoming in a critical state, lack of harmonized processes, distractions, lack of consistency and organization, irrelevance or absence of teams, ineffective preparation prior to the handover meeting are also not evaluated in CHUB. However, these are genuine signs of defect in postoperative handover. The exploration of the handover process at CHUB/PACU should help to evaluate the presence/absence of all handover features that interfere with accuracy of information transfer and how staff observes them as well as their skills in honouring better handover practice, hence the reason of this study.

1.4. THE AIM OF THE STUDY

This study intended to explore the process of patient care handover between the OR team (anesthetist, circulating nurse, and surgeon) and PACU nurses, and identify its features compromising the quality of information transferred to the PACU nurse.

1.5. SPECIFIC OBJECTIVES

- ✓ To observe patients handoff from theatre to PACU unit at CHUB
- ✓ To assess surgical team compliance with handover tasks to include equipment preparation, patient specific tasks and attention and attentiveness of the staff.
- ✓ To determine the types of information transferred to PACU nurse during postoperative handover process.

1.6. RESEARCH QUESTION

- ✓ Do postoperative patient handovers happen between OR and PACU staff at CHUB ?
- ✓ Who are involved in attending post operative handover among CHUB theatre staff?
- ✓ To what extent does the staff handing over patients comply with handover tasks?

- ✓ How often do the OR staff communicate patients specific, surgical and anesthesia related information to the PACU profession?

1.7. SIGNIFICANCE OF THE STUDY

This study has provided basic data for the hospital to understand the postoperative patient care handover process in CHUB/PACU, and occurrence of handover process features interfering with accurate information transfer in the setting. It can also stimulate further studies and projects aiming to quality patient care information transfer in post anesthesia care unit including standardization of handover information transfer. It might also inspire leader to implement and adhere to postoperative handover standards of practice, hence lessening the burden of complications associated with failures of that important phase of health care delivery. Additionally, this study might arouse healthcare institutions to integrating postoperative handover aspect in their education and trainings.

CHAPTER 2. LITERATURE REVIEW

2.1. INTRODUCTION

This chapter is showing the theoretical framework and model used by the researcher for the better understanding of the context as well as the views of different researchers. It also shows the handover gaps identified in the literature and complications resulting from the defective handovers as well as implementation of strategies established.

2.2. HANDOVERS IN HOSPITAL

For the continuity of any operation there is a need of handover to transfer information and responsibility and accountability from one person to another. This is applied in all domains and inevitable as it is a normal phenomenon for humans to have rest and break.

Handover in healthcare settings is among the most critical measures nowadays. The safe patient transfer all along the continuum of care is made a success by an optimal communication between health care providers especially nurses, who always occupy the frontline in caring and improving safe practices (Chard & Makary, 2015, p.330).

Handover is defined as “the transfer of information and professional responsibility and accountability between individuals and teams”(Segall et al. 2012, p.102) . It is a transition occurring between 2 or more workers when they want to exchange task specific information, authority and accountability for an operation (Nila S. Radhakrishnan, 2015, p.2).

Handover consists of interactive time where the provider and the receiver exchange information on the previous, current and ongoing situation of the operation and the responsibilities as well as the plan of next steps for better outcome. During handover process the information provider must convey accurate information and allow time for questions and clarification. This interactive nature of information sharing is very important to allow both sides to understand all components of transferred information through discussion which generates a team approach in elaboration and appraising plans for next steps (Jefferies et al., 2012, p.130).

In healthcare facilities, healthcare providers are not allowed to leave patients alone and the continuity of care is always imperative in all healthcare settings. However, changing of members of healthcare team are inevitable in healthcare facilities because no health provider can work 24 hours a day and 31 days a month as there is a need for break and rest of healthcare providers (Nila S. Radhakrishnan, 2015, p.1). The research shows a doubled number of errors associated with increased working time of nurses to greater than 12 hours a day (Nila S. Radhakrishnan, 2015, p.1). As a result, handovers are an inevitable reality of taking care of patients in the hospital (Chard and Makary, 2015, p.330).

According to Chard & Makary, (2015, p.329) patient transfers arise at many times in healthcare delivery (eg, changeovers of working shifts, relief for breaks, lunch and dinner times) and during numerous points of care (eg, hand-over reporting among nursing units, reporting of pertinent patient data among departments). Furthermore, the emergency of specialties and expertise increases the need of shifting responsibilities of care from one individual to another. These necessary changeovers of health care personnel whereas the patient still the same, are unavoidable and may trigger discontinuity of care as well as medical errors resulting from mistakes committed during the exchange of patient information if not honoured with much attention (Chard & Makary, 2015, p.330). Therefore whenever there is a need of transferring a patient from one provider to another, be it temporarily or permanently handover should emerge leading to multiple patients care handovers and information transfer in healthcare settings.

The practice of handing over process involves “senders,” those caregivers transmitting patient information and transitioning the care of a patient to the next clinician, and “receivers,” those care- givers who accept the patient information and care of that patient. (The Joint Commission, 2012, p.3).

During patient handovers, professional’s responsibility and accountability on some or all aspects of care for a patient or a group of patients are transferred from one provider to another or from a team of healthcare providers to another in order to insure the continuity of care

(Nagpal et al., 2010, p.171). Through patient care handover, the receiving team appreciates the patient's medical condition, recommended investigations and results as well as received treatments. This helps the new team which had no information about the client to anticipate the outcomes and plan for next steps of care. Mirby et al.,(2014, p.192) stated that inaccuracy of information transferred results in lack of certitude regarding patient care leading to adverse outcomes and patient's harm. The environment in which the handoff exchange occurs plays an important role in the process. Distractions and excessive noise can contribute to difficulty in hearing the information. Interactive communication, standardization of handover process has been recommended in many studies and has shown positive results were implemented (Nila S. Radhakrishnan, 2015, p.2, Chen et al.,2012 p5, Salzwedel et al., 2013, Nagpal et al., 2013, p.495).

Situation, Background, Assessment, Recommendation (SBAR) is a good example of standardized communication tool for handover which is considered the easiest to understand and implement. This was originally developed by the United States Navy as a communication technique to be used on a nuclear submarine. It has been used in the health-care setting since the late 1990s (Nila S. Radhakrishnan, 2015, p.2). The author further stated that institutions should take steps to standardize handoffs in a way to provide clear communications and an opportunity for two way communication. These institutions can have access to a Variety of tools in the published literature and adapt them to the context of their settings through modification of issues as to the extent that meet institutional needs.

Handover quality is found to be predicted by information transfer, shared understanding and working atmosphere in a recent study performed in postoperative handover as well as two other handover settings (Møller et al., 2013, p.241). These authors stated that the however the quality of handover is predicted by information transfer but all other challenges like working atmosphere and problems with respect to patient safety and quality in the patient flow with specific interest to the local context the handover takes place in, must also be considered, as organisations and local settings differ. They further declared that information transfer is not the only action to address in handover improvement.

2.3. HANDOVER IN POSTOPERATIVE ARENA

The transfer of patient care after surgery to the post anesthesia care unit (PACU) presents special challenges to providers on both the delivering and receiving sides. Different features of surgical patients and perioperative care have various negative influences on patients' handover in PACU. Factors like patient's state, multiple providers, task factors, environmental factors and time allocated for handover, make the post anesthesia handover the most vulnerable to information loss. As cited by Manser & Foster (2011, p.182), the condition in which the patient is handed over to the PACU nurse requires good preparation of the receiving team and equipments prior to the reception. Yang & Zhang (2016, p.1066) stated that urgent tasks should be completed before allowing the handover meeting to start.

However, post anesthesia care unit is unique and different from other nursing environment. It is always a busy area whereby the nurse is providing care of different levels including care for patients in critical states, as well as receiving and discharging patients in and out the unit (Long ,2016, p.8). The author further showed that the OR team is also in hurry to finish the operating schedule and allocate a little time to patients' handover (Long, 2016, p.2). It was also revealed in the literature that while transporting the patient, the operating room (OR) anesthesia and surgical team must continue to monitor the patient and equipments. In some circumstances they are at the same time charged to monitoring and executing other additional therapeutic tasks such as manual ventilation (Segall, et al., 2012, p102).

In addition to that Robins & Dai, (2015, p. 264) confirmed that multiple providers and variation of individuals 'communication styles along the continuum of surgical care (pre, intra and post operative phases) heightens the risk for information loss, as the previous providers may have not conveyed all pertinent information. All these and other factors make surgical patients the most vulnerable to handover failures, associated adverse events and medical errors. To improve that vulnerability different studies suggested that post operative handover sequence should consider the following steps: **Pre handover** before the patient's arrival, there should be preparation of the receiving team and equipment. **Arrival**: once the patient arrives to the receiving area, urgent clinical tasks must be completed before

information transfer. **Handover meeting (information transfer)** subsequent to the completeness of urgent tasks, the anesthesia specific information is transferred by anesthetist and then the surgeon follows with surgical specific information. **Post handover:** the receiving part performs a checking and care plans is proposed then an opportunity given to both the sending and receiving team sides to ask questions and discussions take place (Manser & Foster (2011, p.182);Yang and Zhang , 2016 p.1066).

The authors further suggested that postoperative handover should be face to face interaction for communication allowing team member to speak one at time rather than written documents only. It is in that regard that Segall et al.,(2012, p.107,) suggested implementation of strategies including: Preparation of equipment, monitor, alarms, fluids prior to patient arrival, fulfill all vital care tasks previous to the oral handover, follow the handover sequence, make it face to face interaction, assure the presence of all relevant team members (senders) and PACU nurse (receiver) at the bedside of the patient, speak in chronological order (one at a time as others are attentively listening).

Yang & Zhang (2016; p.1071) emphasized on the presence of the surgeon at the bedside to convey surgical related information as well as specific goals to work toward. Figure 2.1 shows an example of post operative patient handover pathway.

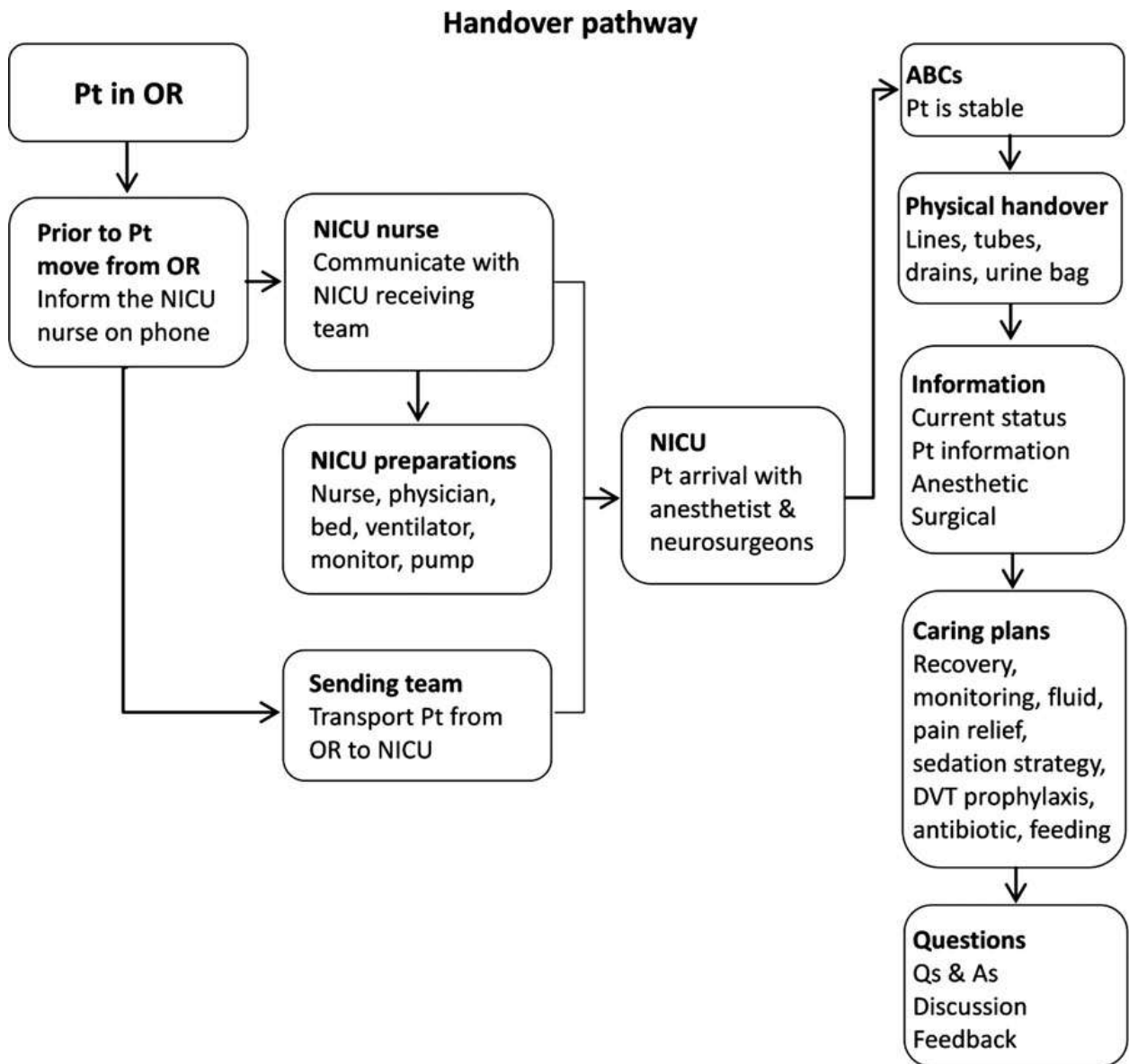


Figure 2.1: Example of handover pathway. Structured process for patient (Pt) post neurosurgery handover from the operation room (OR) to the neurosurgery intensive care unit (NICU). (Yang & Zhang 2016, p.1066)

2.4. THEORETICAL FRAMEWORK

The socio ecological model (SEM) was applied in this study. The model helped to understand that the actual post operative patient handover process and the way it depends on interaction of a variety of factors. This theory recognizes the interactions of individuals and surrounding systems to generate performance of an action (Golden et al.,2016, p.364). In socio ecological theory (SEM) Mc Leroy (1988) describes behaviours influencing factors at multiple levels, including intrapersonal, interpersonal levels, institutional levels, community, and public levels.

The socio ecological model according to (McLeroy et al. 1988, p.355)

Intrapersonal levels Individual characteristics that influence behavior: Knowledge, skills, self-efficacy

Interpersonal levels: Family, friends, peers Interpersonal processes and groups providing identity and support

Organizational levels: Churches, stores, community organizations. Rules, regulation, policies, structures constraining or promote behaviors

Community levels: Social networks Community norms (community regulations)

Public levels: policy Local, state, federal, Policies and laws that regulate or support healthy practices/actions

Reference to this theory the researcher will explain how quality perioperative handover process results from different factors interacting. The figure below shows how this model will be applied to the exploration of postoperative handover process.

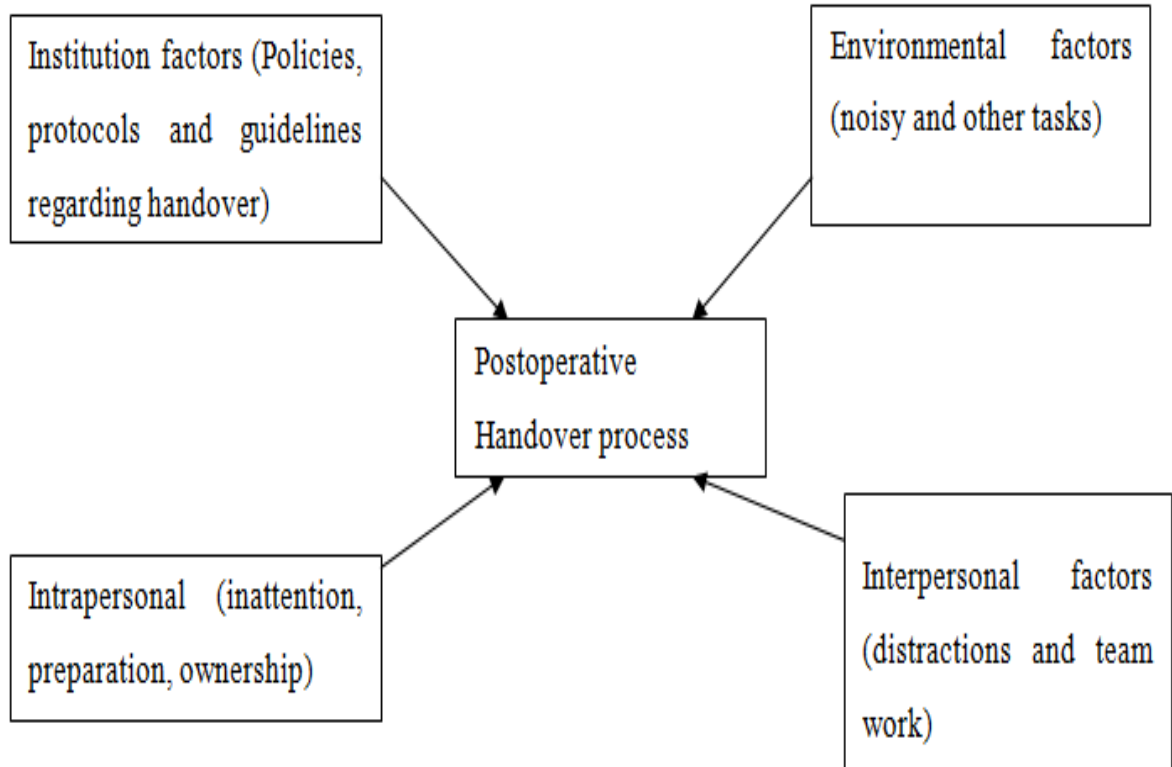


Figure 1 : 2.2: Applied socio-ecological concept model (McLeroy et al. 1988, p.355)

2.5. POST OPERATIVE PATIENT CARE HANDOVER FAILURES

The literature shows that the information transfer in post anesthesia care unit is provided incompletely in majority of cases whereby a number of information was oftenly transmitted and other items were rarely conveyed. In the study done by in Germany, the items like patient's name or type of surgery 97% and others like diagnosis were mentioned moderately 60% while other items including initiation of pain were mentioned less often 12%, antibiotic 14% and peripheral venous catheter mentioned at 11% (Milby et al., 2014, p.194).

Another study done in Canada, Toronto demonstrated that the process of handing over patients after surgical to PACU staff is constantly dependable whereby in majority of cases some information is not transmitted by the OR team members to the nursing staffs in PACU. Information such as estimated blood loss was communicated at 88% of handovers, desaturation events (SpO₂<90%) at 81% of handovers; and quantity of fluids received by the patient during the surgical procedure was transmitted at 62% of all handovers. The only items which were conveyed in over 90% of all handovers were information about the type of surgery and the analgesia administered during surgery. (Siddiqui et al.,2012, p.440).

Another study showed that information transfer failures were found the whole of the continuum of surgical care, whereby preoperative assessment and optimization counted 29.6% of failures ; preprocedural teamwork, 61.7%; postoperative handover, 52.7%; and daily ward care, 33.7%. Their study affirmed that patient specific information was communicated only 66%, procedure specific information 67% and surgical specific information only 30% of verbal handovers. This information included intraoperative surgical which was transferred 15% and blood loss 20% cases.

Besides that written surgical handover only convey 68% of the essential information (Nagpal et al., 2010, p.405). According to Segall et al. (2012, p.110) information transfers in post anesthesia care unit are compromised by a number of causes including poor teamwork and communication, associated with patients arriving in a critical state, unclear procedures, technical errors, unstructured processes, interruptions and distractions, and nurse inattention because of multitasking. Arenas et al., (2014, p.217) stated that “When undivided attention is not given, the probability of remembering any given unit is 67.5%. When undivided attention is given, the probability of remembering any given unit is 90.2%”.

2.6. TASKS PERFORMED DURING HANDOVER

Postanesthesia care unit is unique and different from other nursing environment. It is always a busy area whereby the nurse is providing care of different levels including care for patients in critical states, as well as receiving and discharging patients in and out the unit (Long, 2016, p.8). In addition some other tasks are to be performed on the same patient all along the handover process. These include setting up monitors and alarms, placing the drains and urinary bag, intravenous lines, positioning the patient etc., and should be performed safely and appropriately (Nagpal et al., 2011, p. 832) .

When all these tasks are not anticipated and honored by the PACU team with much attention, they contribute to handover failures and inaccurate information transfer. In their study (Nagpal et al., 2011, p. 835-836) revealed that factors that contribute to handover failure are poor preparation of the recovery team for the handovers, differences in workflow patterns of various health care professionals and competing work demands. They result in distractions, interruptions, noise and inattention during handover which in turn lead to fragmentations omissions and incompleteness of information transfer. For example, on one occasion, the anesthetist handed over the patient's relevant information to the recovery nurse. At the same time, other nurses were asking the recovery nurse for information regarding previous patients. This not only diverted the nurse's attention, but also created confusion. As a result, the handover was prolonged and the anesthetist was forced to repeat information (Nagpal et al., 2011 p.836).

Different authors have identified a variety of factors influencing whereby the commonly found in the literature include noise, interruptions, overloading a high rate of patient arrival and discharge, defective preparation prior to patient reception, patients incoming in a critical state, lack of harmonized processes, distractions, inattention of staff members, excess information, irrelevance or absence of core team members, lack of standardized process, lack checklists to harmonize information to be transferred (Segall et al., 2012, p.110; Long, 2016 p42; Chen et al.,2012, p.5).

Despite the importance of preparation and tasks performance of the PACU team prior to verbal report, the compliance of staff with tasks is still questionable. For example in their study, Yang and Zhang (2016; p.1071) reported that the receiving staffs were ready with ventilator, monitor and microinjection pumps alarms set up and on standby in 81% of handovers of post operative neonates. In another study, Nagpal et al. (2011, p.835) reported 3 tasks errors per handover in 26% of all patients studied. The authors warned that there is no doubt that failure to set monitor alarms may lead to defective monitoring of patient 's condition and failure to locate IV lines urinary bag and drains is a sure indication of collapse in monitoring bleeding, intake and output.

2.7. POST OPERATIVE INFORMATION TRANSFER DURING HANDOVER

The literature suggested that the information communicated during handoff should be current, complete and concise and the receiving caregiver should be given an opportunity to read back, repeat back, and ask questions as needed. Nagpal et al. (2013, p. 495) categorized the information to be transferred during postoperative handover phase into 3 categories including patient-specific information, surgical information, and anesthetic information. However, different studies stated that information transfer during post-operative handovers in the PACU are in most cases incomplete (Milby et al., 2014 p.194, Siddiqui et al.,2012, p.440, Nagpal et al., 2011, etc). A review of 38 articles that focused on failures in information transfer during handover showed that information transfer failures were common in surgical care and were distributed across the continuum of care (Nagpal et al., 2010 a). The authors found that the majority of these breakdowns occurred during verbal communications involving one transmitter and one receiver.

This lack of accuracy in information transfer or ineffective communication result in increased cognitive burden, duplication of test and care, loss of data, healthcare associated errors, delayed diagnosis or treatment, prolonged hospitalization of patients and poor patient care outcome.

Leblanc et al. (2014, P.9) cited that medical errors are common; occurring in 3.2%–10.6% of patients, and it is estimated that 58%–66% of these errors may result in patient injury. Up to 65% of these injuries are major, and up to 54% are preventable. About 18%–25% of these errors occur during the preoperative period

The Joint Commission (2012, p.1) reported that “ineffective hand-off communication is a critical patient safety problem in health care; in fact, an estimated 80% of serious medical errors involve miscommunication between caregivers during the transfer of patients”.

In their study Dimick et al., (2004, p.531) found that minor complications counted 6.3%, events and major complications 6.6%. Median hospital costs were lowest for patients without complications (4,487 dollars) compared with those with minor (14,094 dollars) and major complications (28,356 dollars). Thus surgical complications as many of them are subjected by inaccuracy of information transferred during handover raise a huge burden for hospitals, nations and communities in general.

To improve the quality of postoperative handover and information transfer, different initiatives have been taken world widely including standardization of handover process, use of checklists, and continuous education of staffs and positive results were shown in different researches. For instance, the Association of perioperative registered nurses (**AORN**) recommended standardization of communication process and other techniques like involving all providers from related disciplines, use of patient handover protocols and checklists and encouraging team members to asks questions (Seifert, 2012, p.479). In this regard the literature shows that a good number of authors suggest that postoperative handover should happen between anesthesia provider and PACU nurse (Siddiqui et al., 2012, p.438; Robins & Dai, 2015, p.264).

However other researcher prefer the presence of all surgical team members (OR nurse , surgeon, and anesthesia provider) to the handover site others(Nagpal et al. 2010, p.174; Abraraw Lehuluante, 2013, p.15). In addition, the Joint Commission National Patient Safety Goal 2 set in 2006 has been to improve the effectiveness of communication among

caregivers. Whereby its requirement 2E was the implementation of standardized approach to handoff communications, including an opportunity to ask and respond to questions (Vineet Arora & Julie Johnson, 2006). The authors illustrated measures that organizations need to implement that requirement.

1) The organization's process for effective handoff communication includes: interactive communications allowing for the opportunity for questioning between the giver and receiver of patient information.

2) The organization's process for effective 'handoff' communication includes: up-to-date information regarding the patient's care, treatment and services, condition and any recent or anticipated changes.

3) The organization's process for effective 'handoff' communication includes: a process for verification of the received information, including repeat back or read back, as appropriate.

4) The organization's process for effective 'handoff' communication includes: an opportunity for the receiver of the handoff information to review relevant patient historical data, which may include previous care, treatment and services.

5) Interruptions during 'handoffs' are limited to minimize the possibility that information would fail to be conveyed or would be forgotten.

In 2012 the Joint Commission Center for Transforming Healthcare established following strategies to improve post operative handover and quality of information transfer.

- **Standardize critical content** this includes identification of key information about the patient history and current condition to be transferred, which should be synthesized from the sources before communicating it to the receiver.

- **Hardwire within your system** this includes establishing harmonized means of handing over through creation of consistent methods such as use of checklists, standardized and tools.

- **Allow opportunity to ask questions** this includes using critical thinking skills when discussing a patient's case as well as sharing and receiving information as an interdisciplinary team.
- **Quality and measurement** this includes leadership involvement in keeping successful handover. Monitoring and evaluation of the staff compliance on standard information transfer.
- **Educate and coach** Continuous training of the staff on how to carry out a successful handover and standardized information transfer

(The Joint Commission, 2012, p.3)

However, these strategies are not implemented in different areas of the world and some other areas are not providing data about post operative handover. According to Robins & Dai, (2015, p.264) the use of a checklist during a handoff could help providers correctly exchange information and increase the adequacy of the handoff for nurse receivers.

4.8. CRITIQUING USED LITERATURE

The literature used in this study has much strength but is not free from weaknesses. Amongst the strength it was seen that some of used articles were metanalysis which consists of review and analysis of different researches on a specific topic. Conversely such kind of researches is considered to be of high degree of evidence. Furthermore other article cited or quoted were of interventional studies which are also for a considerable degree of evidence. For instance some of them assessed the postoperative handover before and after the introduction of handover checklist. However the weaknesses subside whereby many of reviewed articles used non experimental like cross sectional and survey studies which are deemed to contain low degree of evidence. Convenient sampling and observational method which are thought to be likely biased were also used by researchers cited in this research and some other articles were not peer reviewed.

CHAPTER3. METHODOLOGY

3.1. INTRODUCTION

This chapter provides detailed description of the study process, means that will be used, area of the study, study population, as well as the expected challenges during the course of this study.

3.2. RESEARCH DESIGN

A prospective descriptive cross sectional design using non participant observation was used to collect data during verbal communications. This was done through a non participative observation whereby the researcher observed OR team members while handing over patients to the PACU staff. The researcher was using checklists to record the handing over process and information transfer in the PACU of the University teaching hospital of Butare, south Rwanda. A field note was used to record other addition information which was not provided to the checklist.

3.3. RESEARCH APPROACH

A quantitative approach was used to exploring patients' handover process between operating room team members and post anesthesia care unit nurse at University Teaching Hospital of Butare in Rwanda.

3.4. SETTING

This study was conducted at the University Teaching Hospital of Butare, one of five referral and teaching hospitals in Rwanda. It is the only hospital of this level which is located out of Kigali the capital town of the country. CHUB is located in Ngama sector, Huye district, Southern Province. The CHUB main theatre is made up 4 operating rooms and an eight bed recovery room (PACU). Preoperative waiting room is very narrow and doesn't hold patients for long time, thus every patient is brought to theatre when everything is arranged to take the patient to Operating room (OR). CHUB theatre staff is made up by 5 anesthesiologists who run the OR, PACU and ICU, 21 anesthetic technicians , and 18 nurses who run the 4 operating rooms, sluice room, waiting room and PACU. Theatre activities are done in 2

shifts, day shift which takes 10 hours and night shift which takes 14 hours. As stated above in most of times only 2 nurse per shift, is assigned to work the PACU which contains 8 beds, receiving, admitting, monitoring and caring for patients from 4 ORs until they get stable and ready to be discharged to their respective wards. Rarely, one anesthetist is designed to help the PACU nurse depending on the number of available anesthetists especial when there are many residents in anesthesiology.

3.5. STUDY POPULATION

This study was conducted on handovers taking place in PACU whereby all persons (patient, surgeon, operating room nurse, anesthesiologist, anesthetist, and PACU nurse) involved in handover were eligible to be included in the study. However every single handover was considered as a unit of the observation hence an element of the study population. According to CHUB Recovery room records an average of 150 patients are admitted to PACU every month meaning that 150 handovers take place every month.

3.5.1. INCLUSION CRITERIA

Patients underwent surgeries, immediate admission to PACU, having signed informed consent prior to surgery, and the admission/handovers might be done during ordinal day shifts from Monday to Friday 7:00 am up to 5:00 pm.

3.5.2. EXLUSION CRITERIA

All handovers done in nights and weekends and those which are done in other wards rather than PACU like intensive care unit (ICU) and patients having surgery under local anesthesia who were immediately sent to surgical ward because they don't need admission in PACU didn't take part in this study. Patients who had not sign the consent prior to surgery were not part of observation during this study.

3.6. SAMPLE SIZE AND SAMPLING STRATEGY

Data was collected on 109 admissions of patients who underwent surgery throughout one month period from (April 15th to May 15th) during day shifts excluding weekend. Convenient sampling strategy was used, whereby all handovers of patients which hold in

PACU during that period were eligible to this study until the desired number was reached. This number is from a population of 150 turnovers of patients admitted in PACU every month and was calculated using the following formula developed by Yamane in 1967 (Israel, 1992, p.4).

$$n = \frac{N}{1+N(e)^2} = \frac{150}{1+150(0.05)^2} = 109$$
 Where n is the sample size, N is the population

size, and e is the level of precision.

Data collection team had to consider that a single handover could incorporate many people including patient, surgical and anesthesia team members as well as PACU nurses.

3.7. DATA COLLECTION

3.7.1. DATA COLLECTION TOOL

As the hospital doesn't dispose on a structured tool about information transfer and quality of post-operative handovers, the researcher borrowed a checklist which was developed in 2011 by Kamal Nagpal and colleagues. The tool was designed to assess the existing practices of the postoperative handover in two big hospitals in Europe, London and Basel. He then adopted it to the CHUB condition and the context of the topic. That checklist has been validated and utilized in 2 huge teaching hospitals in London, United Kingdom (UK) (Nagpal et al., 2011, p.833). The checklist was first modified and adapted to confine the context of the topic and the study area. Adjustments were made to include items such as attendance of sender and receiver team members, and other practices which can impact on the effectiveness of handover such as preparation of the receiving team and equipments prior to handover report, urgent task accomplishment before report, closeness of members, attention of members, quietness of the environment, avoidance of distractions and interruptions, time for questions, duration of the process as well as the existence of structured process. Subsequent to that, that version of the checklist was used in a pilot study which has been carried out in the small recovery room of Gynecology and Obstetrics (GO) department, where the

Caesarian Section (CS) are done to test feasibility and inclusiveness. The pilot study was tested valid with Cronbach's Alfa test and revealed 0,811

The checklist was made of the following 2 major items: sequence of patients' handover and types of information transferred PACU team during handover.

3.7.2. ELEMENTS OF THE TOOL

Tasks performance and preparedness of the team prior to verbal report

The way the handover is provided and the condition of the environment in which the information is conveyed has a substantial impact on quality of information transfer. This part included the preparation and task accomplishment of the PACU team prior the arrival of the patient in the unit, whether the responsible people are present to convey the information to the right recipient, the presence or absence of the givers and receivers at the patient's bedside, presence or absence of distractions including phones, conversation irrelevant to the case being handed over, presence of external staff (anyone not part of the postoperative handover team apart from the observer), unstructured processes, interruptions and distractions, nurse inattention because of multitasking as well as the use of checklist and existence of postoperative handover policy. This will also help to assess whether one person speaks at a time as well as the time for questions.

Type of information transferred to PACU team during handover

Patient Information: It includes the essential information about the patient history and identification that should be communicated from theatre team to PACU nurses. Patient name, age, medical history, allergy status, diagnosis, name of procedure, patient current condition and vital signs.

Anesthetic information: It illustrates all anesthesia related concerns like, type of anesthesia, complications during anesthesia course, any blood products (had/needs), important medications administered in theatre, concerns for recovery (vitals parameter range and

action) fluid therapy and plan, plan for pain management, plan for lines, eg, central venous, arterial, postoperative investigations, eg, Hb,

Surgical information: This should help to measure to what extent the information related to surgery and associated risks is transferred to PACU nurse. Intraoperative surgical course and any complications, blood loss, number of drains and plan, DVT prophylaxis plan, antibiotic plan, feeding plan.

3.7.2. DATA COLLECTION PROCEDURE

A researcher observed the handover processes during post operative handoff of patient care between OR team and PACU nurses. Both OR team members who deliver patients to the PACU postoperatively and nurses who receive patients at PACU as well as the patients being handed over were observed using the checklist. After checking the daily surgical schedule the researcher approached patients in their respective wards every morning or in waiting area before being transferred to theatre and seek for the informed consent. The researcher or research assistants used to meet theatre and PACU staff in their morning staff meetings. After a self introduction to them, the researcher provided detailed information on what was the research about and the willingness and to participate. Those willing to participate in the study signed the consent forms, then the researcher were permitted to observe their handover process and complete the checklist through the whole course of the process. The data collection were done through observing and filling whether the elements of the process or information provided on the chart are honored or not, and circling the corresponding answers (yes or no). This was done during regular working shifts from Monday to Friday 7am to 5 pm

To prevent biases, all healthcare providers (nurses, surgeons and anesthesia providers) involved in this study, were kept ignorant about the content of the checklist, however they were informed that a study was being conducted on them to explore post-operative handovers process in their setting.

3.8. DATA ANALYSIS

Collected data were entered into a spread sheet SPSS dataset, analyzed through descriptive statistical methods using Social Package for Statistical sciences (SPSS version 21) software. As the study was totally descriptive the data were analyzed statistically through calculation of frequency and measures of central tendency. e.g the mean was used to calculate the rate of completed handovers.

3.9. ETHICAL CONSIDERATION

The project of this study was submitted to the Rwanda Committee of Ethics for review and approval, and then presented to the Hospital administration for agreement and facilitation. Patients and staff involved in this study have signed informed consent before participation in this study. They were explained that the participation was voluntary and that they were allowed to withdraw from the observation whenever they wanted without any negative consequence. Names of patients and staff who participated in this study did not appear on the checklist. They were given contact numbers of persons to call if any queries. They were also aware that there were not supposed to expected to contact any harm resulting from this study and the benefits would be general to the whole population as quality improvement programs could be generated from this study.

3.10. DATA DISSEMINATION

The result of this study will be presented to the CHUB administration and University of Rwanda (UR) a copy will be provided to each of these institutions. After review and approval from experts this study will be published at the national level as well as the global level.

3.11. DATA MANAGEMENT

Completed observation checklists were kept in a locked cupboard in a secured room, which may be accessed by authorized people only. Data interred in computer for procession and analysis were kept in the researcher's personal computer and secured with password.

3.12. LIMITATION OF THE STUDY

This study was conducted in only one setting. This is a limitation for the study as the generalizability would not be promising. Another limitation of this study lays on the convenient sampling which was used, yet this sampling strategy is known to be easily biased. The reliability of data may also be limited due to the fact that only one researcher collected the data. Furthermore the participants were informed that an observational study was being conducted looking out their practices in handing over patients. Therefore Hawthorne effect was possible in this study whereby participants may have improved their behavior during observation. Further, handovers during night shifts and weekends were not assessed, thus it was not clear whether the information transfer was influenced by specific time frames.

CHAPTER 4: RESULTS

4.0. INTRODUCTION

This chapter describes the study findings according to the research specific objectives. The researcher observed patients admissions from operating room to PACU for recovery, during a period of 1 month starting from April 15th to May 15th. The observations were done from 8:00 am to 5:00 pm from Monday to Friday. During that period, 121 PACU admissions were done. However 12 patients did not consent to participate therefore these results are based on the 109 observations made. Both male 66 patients (60.6%) were and female 43(39.4%) patients were admitted in PACU.

4.1. DESCRIPTION OF OBSERVED PATIENT'S HANDOFF FROM THEATRE TO PACU UNIT AT CHUB

4.1.1 HANDOVERS OBSERVED

Among the observed 109 PACU patient admissions 89 % (97 cases) were handed over between OR team and PACU nurses, whereas 12 patients (11 %) were not handed over.
Figure 4.3

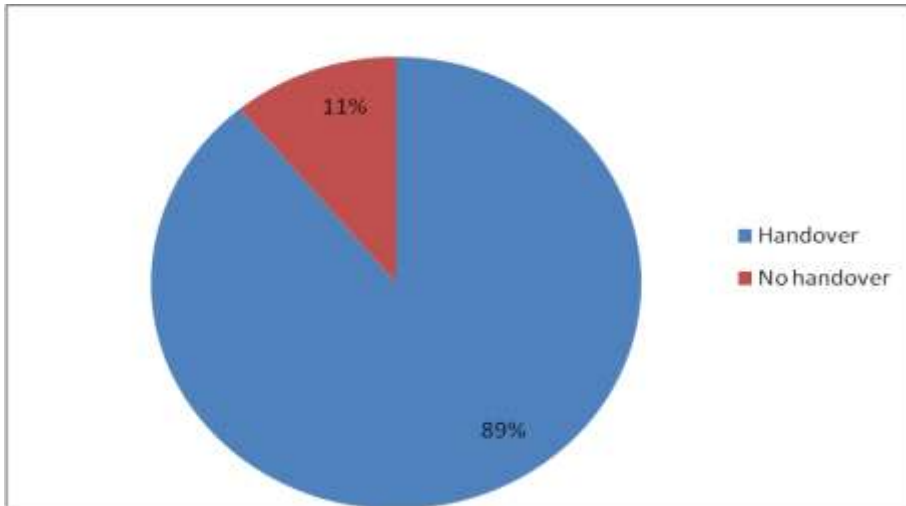


Figure 4.3: Observed handovers

4.1.2. REASONS FOR PATIENTS ADMISSION WITHOUT HANDOVER

Patient admissions happening without in this study were either due to the absence of OR qualified professional staff member to accompany the patient to PACU whereby patients were taken to PACU by the Porter or undergraduate student alone, or the patients were admitted to PACU while the PACU nurses were not available to receive the patients, hence the patient was left in the recovery ward without handover between OR and PACU staff. Among patients who were not handed over 7 cases (6.4%) were due to lack of nurse in PACU, and 5(4.6%) were caused by being accompanied by no qualified person. Table 4.1

Table 1:4.1: Reasons for missed postoperative patient handovers in PACU

Reason for no handover	Frequency	Percent
No PACU Nurse in the room	7	6.4
No qualified profession to accompany the patient	5	4.6
Total	12	11.0

4.1.3. TEAM MEMBERS INVOLVED IN POSTOPERATIVE PATIENT HANDOFFS

Most of handovers 85.3% of all observed handovers were between anaesthesia provider and PACU nurse. Figure 5 shows the composition of team members who participated in handover. Figure 4.4

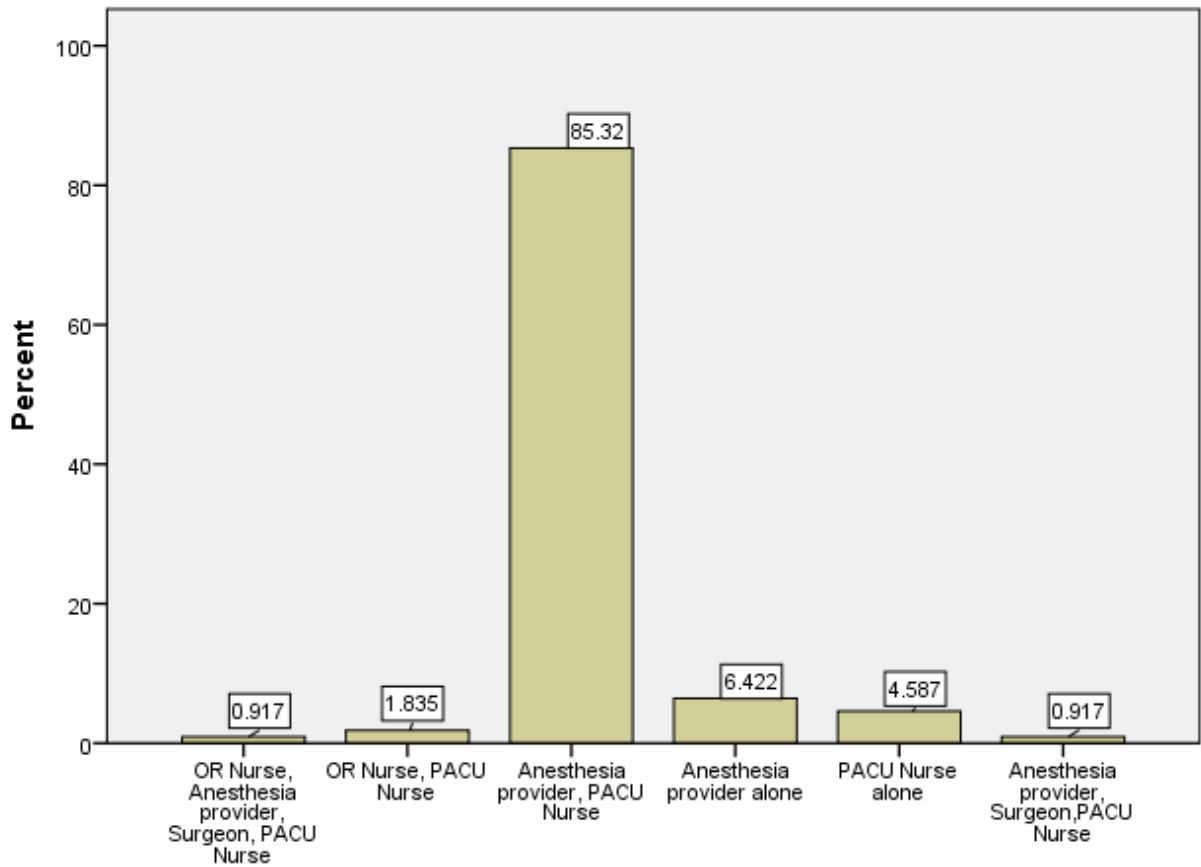


Figure 4.4. Team members who participated in postoperative patient handing over

4.2. COMPLIANCE WITH HANDOVER TASKS

4.2.1. EQUIPMENT PREPARATION PRIOR TO COMMENCING HANDOVER REPORT

Almost all items requiring preparation and arrangement were cared for in not quite than a half of all handovers. Patients' intravenous lines were the most cared for and were well arranged and set 78 (71.6%) of all handovers the lines whereas monitor pumps 50 (45.9%) and drains 51 (46.8%) were the least attended to. Figure 4.5

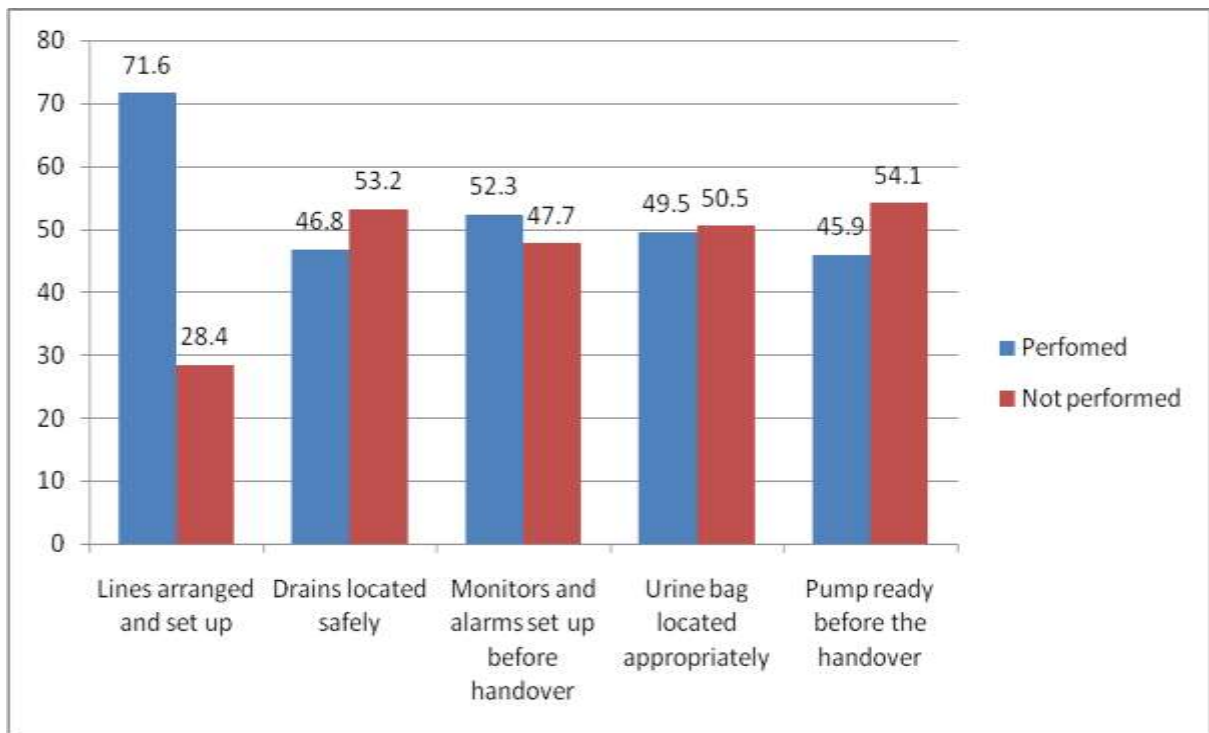


Figure 4.5: Distribution of equipment related task execution prior handover

4.2.2. PATIENT SPECIFIC TASKS ACCOMPLISHMENT BEFORE TO COMMENCING HANDOVER REPORT

Among necessary patients specific task, covering the patient was the most practiced in 93 (85.3%) of all cases whereas providing good pain relief to the patient was the least performed task done in 66 (60.6%) of all cases. Figure 4.6

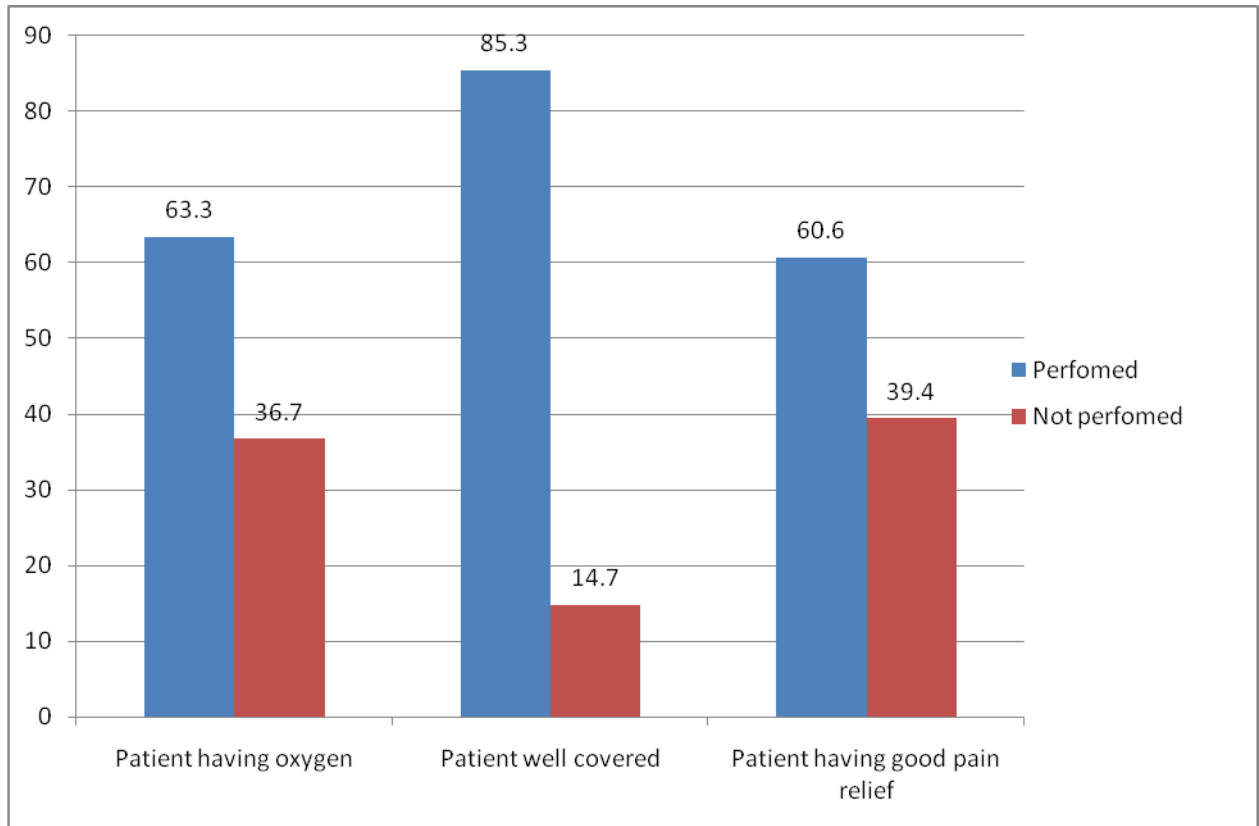


Figure 4.6: Execution of patient specific tasks prior to report.

4.2.3. STAFF ATTENDANCE AND ATTENTIVENESS DURING PATIENTS HANDOVER IN PACU

In this study it was found that factors showing the staff enthusiasm and compliance with the quality of handover are moderately honored. Taking time for handover was observed in

73.4% of all case and represents the most practiced among other factors as shown in Figure 4.7

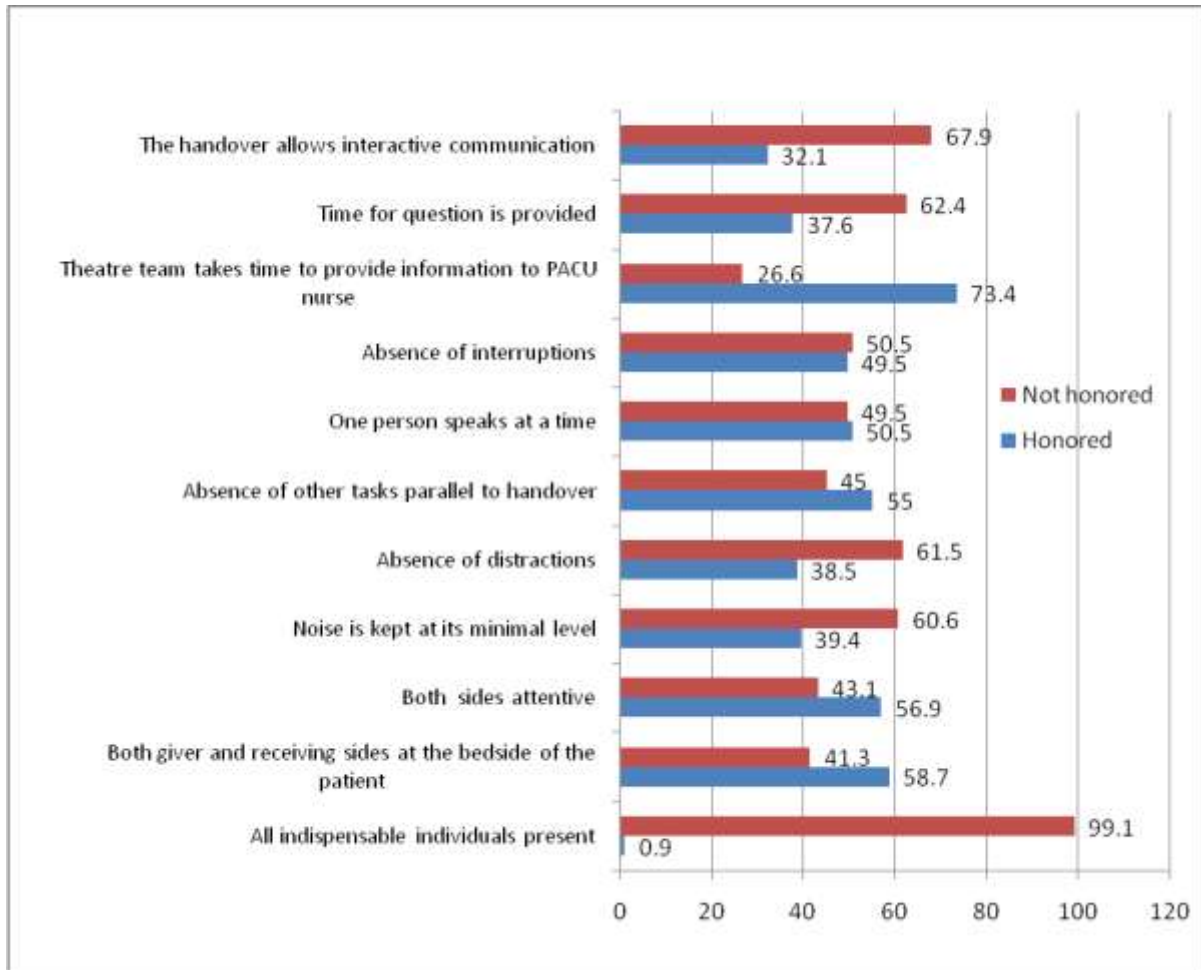


Figure 4.7: Attendance and attentiveness during handover

4.2.4. LEVELS OF COMPLIANCE WITH THE HANDOVERS

The researcher categorized the levels of compliance as non compliant (provide less than 60 % range), partially compliant (provide 60 to 80 % range) and compliant (provide greater than 80 % range) Table 4.2 shows the levels of compliance according to specific task while figure 4.8 shows the overall compliance levels with three specific tasks combined

Table 2 4.2: Levels of compliance with tasks

compliance with equipment preparation	Frequency	Percent
None compliant	71	65.1
partially compliant	20	18.3
Compliant	18	16.5
Total	109	100.0
compliance with patient specific tasks	Frequency	Percent
none compliant	91	83.5
partially compliant	5	4.6
Compliant	13	11.9
Total	109	100.0
compliance with attendance and attentiveness	Frequency	Percent
None Compliant	70	64.2
partially Compliant	15	13.8
Compliant	24	22.0
Total	109	100.0

4.2.5. OVERALL COMPLIANCE WITH TASKS

According to the results the overall compliance was 15.6%. Figure 4.8

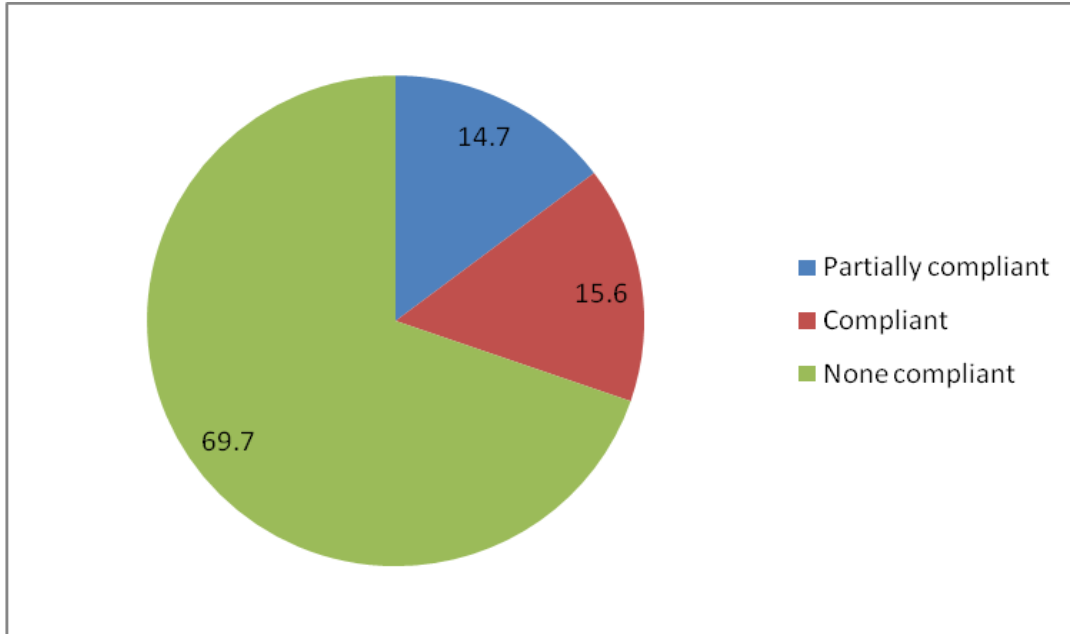


Figure 4.8: Overall compliance with tasks

4.3. TYPES OF INFORMATION TRANSFERRED TO THE PACU NURSE DURING POSTOPERATIVE HANDOVER PROCESS.

4.3.1. PATIENT INFORMATION

According to the results postoperative patient handover, patient information procedure and diagnosis were frequently communicated 80.7% and 79.8% respectively and others like patient name and allergy status were less communicated 21.1%, 11.9%, medical history being the least conveyed information (11%). Figure 4.9

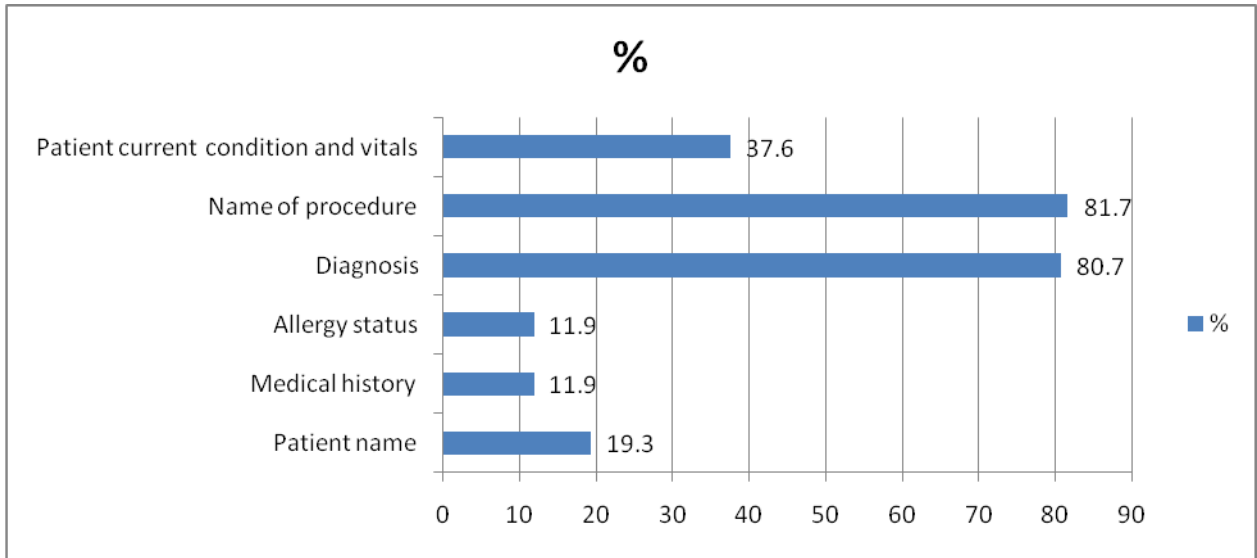


Figure 4.9: Patient information communicated to the PACU nurse during handover

4.3.2. ANESTHESIA INFORMATION

Regarding anesthesia related information, intraoperative anesthetic course and any complications was the most frequently expressed 63.3%, plan for lines, either central venous, or arterial was the least communicated 12.8%. Figure 4.10 provide details on the frequency of each item.

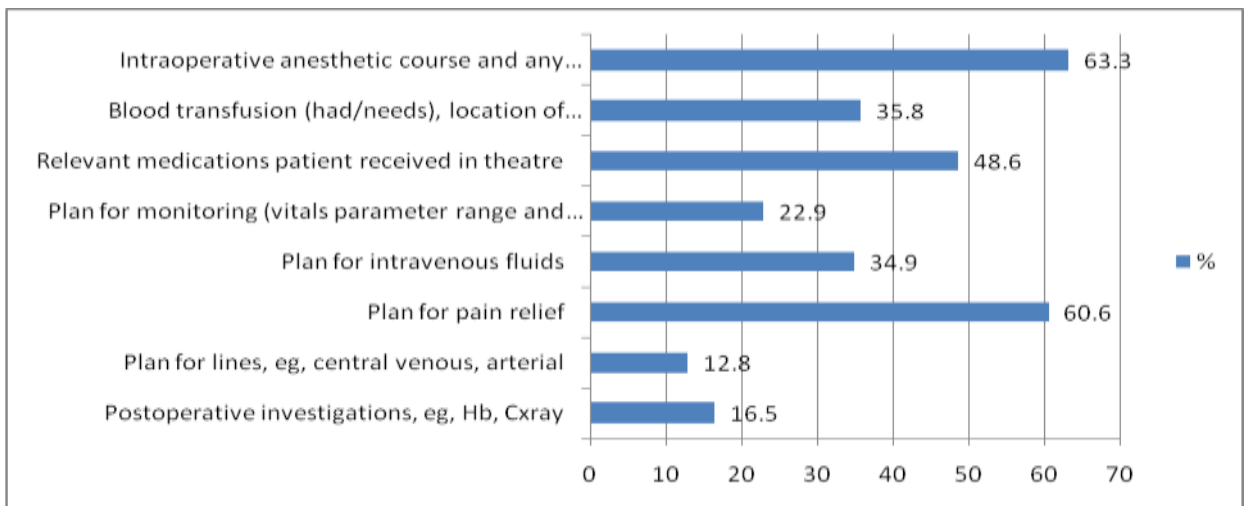


Figure 4.10: Anesthesia information communicated to the PACU nurse during handover

4.3.3. INFORMATION RELATED TO SURGICAL INTERVENTION

The surgical related information was conveyed in less than 10% of all handovers observed. The most reported was blood loss and antibiotic plan each accounting 8.3% and least reported was DVT prophylaxis which in 0.9% of all handovers. Figure 4.11

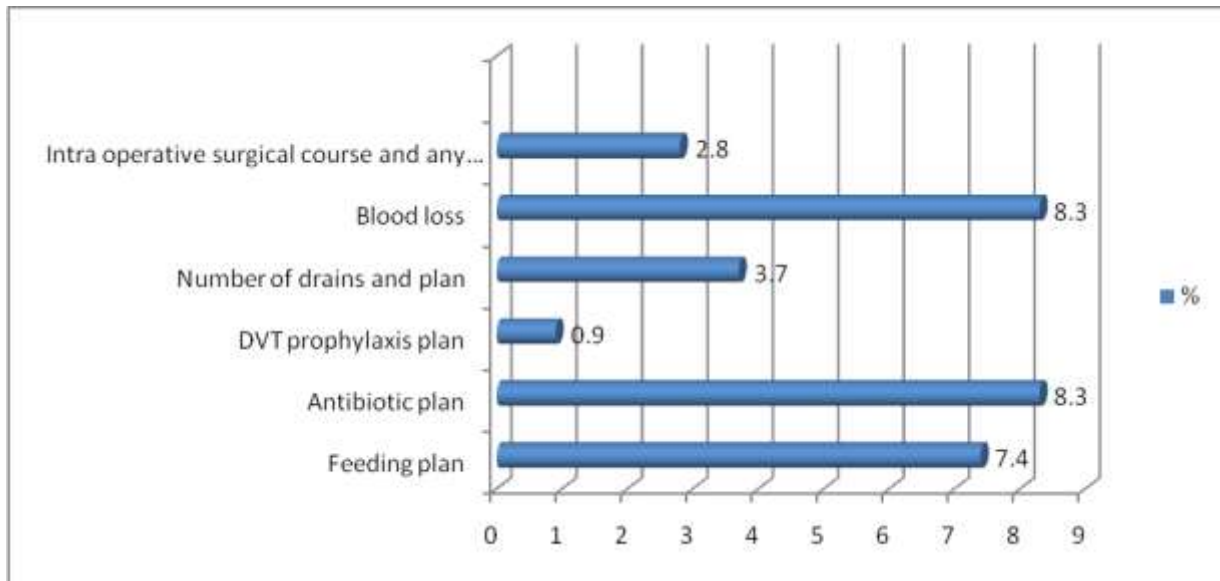


Figure 4.11 surgical information transferred to the PACU nurse during handover

CHAPTER 5: DISCUSSION

This study aimed to explore exploring patients' handover process from operating room to postanesthesia care unit at University Teaching Hospital of Butare

It was also found in this study that the postoperative patients handoffs between OR and PACU is not made mandatory and some patients are admitted in PACU without handover happening. The results show that 11% of patient's admissions in PACU during the period of the study were not handed over. Among them 7 patients presented to PACU without a professional staff accompanying them and 5 others arrived to the unit and when there was no professional staff to receive the handover. Ultimately, these patients received nursing care without the handing over having taken place. The care received was based on the information PACU nurse received from reading the patients' file as was observed. Though the researcher didn't find in the literature where the omission of the whole process of postoperative handover and the impact on patients care and outcomes but many adverse effects of failures in postoperative patients handing over have been cited from literature. These include but are not limited to low patient satisfaction, medical errors and increased health expenditure and increases in patient morbidity and mortality (Leblanc et al., 2014, p.9).

The study showed also that the composition of the team handing over was incomplete almost all the times. Only 1 (0.9%) handover, was attended by a team of all indispensable individuals (surgeon, anesthesia provider, OR nurse, and PACU nurse) throughout the 109 observation made. The remaining (99.1%) handovers were attended by incomplete team. Most frequently the anesthetist/ anesthesiologist who gave anesthesia with or without his/her team members accompanied the patient and interact with the PACU nurse. Handovers happening between anesthetist and PACU nurse alone were more than 85% of all handovers these results are far different from those found in study done by Yang and Zhang (2016; p.1071) whereby surgeon attended 77% of all handovers. Yang and Zhang argued that such practice was unfair and not realistic and also considered as one of barriers to effective handover and source of information loss and adverse patient outcomes. Bonifacio et al. (2013 p47) cited that if the

surgeon is not present, the anesthesia provider may be left to communicate all of the intraoperative information, thereby increasing the likelihood of information omissions or inaccuracies related to surgical details and plan of care. In this regard, Chen et al.,(2013 P 4) dictated that a surgeon and anesthesiologist accompany the patient from the OR for all complex operative cases while Yang and Zhang, (2016; p.1071) emphasized on the presence of the surgeon at the bedside to convey surgical related information as well as specific goals to work toward. Yang and Zhang, (2016; p.1071) proved improvement in transfers of such information as result of the presence of the surgeons on the bedside of the patients. Likewise, The Association of periOperative Registered Nurses (*AORN*) has also recommended the presence of all indispensable team members to reduce information loss and omissions and make postoperative patients handover more successful (Seifert, 2012, p.479).

This study also found noncompliance with tasks including equipment preparation, patient specific tasks execution and attendance and attentiveness during patients' handover according to best practice. Only 15.6% of all handovers complied with tasks, 69.7%, were none compliant and 14.7% were partially compliant. That has a big impact on surgical patients as they arrive in PACU in critical status. Thus it is crucial for the nurse in PACU to be ready in advance to receive the patient, and together with the help of the OR team accompanying the patient complete patient's related tasks like connecting the patient to monitor, hanging up the IV line on the drip stand etc. All the members at this point are responsible for the safety of the patient as well as allowing safe and quite environment for handover communication. The researcher observed that at CHUB the OR team member accompanying the patient is almost always the one responsible to position the patient, set monitor alarm, looking for facial mask for oxygen delivery, and other associated tasks. It is not unusual to find some patients left with urine bags drains for example on the bed and the patient has not been connected to the monitor and pump as should have been. .

This study found that patients' intravenous lines were the most cared for whereby in 71.6% of patients handed over the lines were well arranged and set. Monitor pumps and drains were the least prepared whereby their preparation occurred in 45.9% and 46.8% of all handover respectively. This was contrary to the practice reported by Yang and Zhang (2016; p.1071) where the receiving staffs were ready with ventilator, monitor and microinjection pumps alarms set up and on standby in 81% of handovers of post operative neonates. Moreover, according to them, the practice seemed not to be impressive and they recommended improvement in practice to further enhance safety and care proficiency. In another study, Nagpal et al., (2011 p835) reported 3 tasks errors per handover in 26% of all patients studied. The authors warned that there is no doubt that failure to set monitor alarms may lead to defective monitoring of patient 's condition and failure to locate IV lines urinary bag and drains is sure indication of collapse in monitoring bleeding, intake and output.

In this study it was found that factors identified in the literature to interfere with the quality of handover are moderately honored by the CHUB post anesthesia care unit staff. Those factors include taking time for handover which was observed in 73.4% of all case and represent the most respected among other factors, factors like attentiveness of members participating in handover, tasks carried out concomitantly to the handover communication, standing at the patient bed side and absence/presence of interruptions and whether one person speaks at a time were moderately observed 56.9%, 55%, 58.7%, 49.5%, and 50.5% of all handoffs respectively. However the least observed were the presence of all indispensable individuals observed 0.9% and whether the OR team were allowing time for questions and clarification was observed in 37.6% of all handovers. The OR team were giving the impression to be in hurry and not focused on what they were saying and or more than one person talking at a time.

Though noise and distractions are common in PACU settings, they must be kept at their minimal level during handover. As seen in other studies avoidance of noise, distractions and consistence to communication in handover process enhanced the capture of critical

information among clinical team members (Agarwal S. et al., 2012, p.2112). In this study distractions counted for 61.5% of all handovers which is greater than 35% found by Nagpal et al. (201, p.835) in their study done in Basel and London. Other observations made included more than one person speaking at a time, presence of interruptions that came in about 50% of all handovers. As a matter of fact, no one can be able to concentrate in listening while she or he is talking and vice versa, an act that predisposes to information loss or fragmentation. Such acts constitute to barriers to quality postoperative patient handover hence sources of many complications and adverse patient outcomes. Several studies have advocated that compliance to tasks including equipment preparation, execution of patient specific task and improvement of staff motivation and ownership as well as environmental condition for communication is crucial for quality postoperative patient handover (Segall, et al. 2012, p.110; Long, 2016, p.42; Chen et al.,2012, p.5).

The information transfer from the OR team to the PACU nurse was found to be incomplete in all the handovers in this study similar to findings in other related studies (Milby et al., 2014 p194, Siddiqui et al.,2012, p.440, Nagpal et al., 2011 etc). However, there were differences in the level of omissions for example, the name of patient was mentioned in 19.3% handovers only in this study while in Milby' study 81% of handovers communicated the name of the patient. The same applied to medical history, allergies, and patient condition yet it is a well understood fact that preoperative patient condition may interfere with his/her recovery from anesthesia and surgery.

Regarding anesthesia in this study and other studies already cited, information given during handover was also found to be incomplete. However in this study, the level of omissions or fragmentations of some specific information was low comparing to studies done in the other areas. For example for pain relief 60.6%, intravenous fluids 34.9%, plan for lines, eg, central venous, arterial 12.8%, blood transfusion 35.8%, relevant medications patient received in theatre 48.6%, plan for monitoring (vitals parameter range and action) 22.9% whereas pain management in Milby' s study was communicated in 12% and fluid therapy 15 % and venous catheter 11%.

The results of this study demonstrated that surgical related information was the least communicated to the PACU staff. This may be due to absence of the surgeon and OR nurse at the site of handover. All items concerning surgical information were conveyed to the PACU nurses in less than 10% of all handovers. For example estimated blood loss mentioned in 8.3%, VDT prophylaxis 0.9% plan for a feeding 7.4% and ongoing antibiotics 8.3%.

The results of this study shows that all items of information to be communicated to PACU nurse were conveyed in less than 80 % of all handovers and many of them come in less than a half . There is no doubt that a handoff communication of such frequency, magnitude and content is suboptimum. View the results of this study, it is hard to confirm that anesthesia provider or other OR staff members discharged their accountability and responsibilities on patients to PACU staff through handovers. Nevertheless, patients enter that unit in critical condition requiring increased care and closer monitoring. Post operative quality care results from quality handover as any step of care bases on the previous step. The literature shows contributing factors including noise, interruptions, overloading and high rate of patient arrival and discharge, defective preparation prior to patient reception, patients incoming in a critical state, lack , distractions, inattention of staff members, excess information, irrelevance or absence of core team members, lack of standardized process, lack checklists to harmonize information to be transferred (Segall, et al., 2012, p.110; Long, 2016, p.42; Chen et al., 2012 p.5). No matter how minimum the risks are deemed to be, some simple tasks like failing to convey the patient name during handover may lead to complications that are associated with lack of proper identification of patients (Abraraw Lehuluante 2013 p16). Most of these factors were also observed at CHUB postanesthesia care unit.

Although it was not within the scope of this study, researchers have shown that standardization of the process and harmonization of information to be transferred has led to valuable improvement in information transfer. Several factors have been identified that facilitate the success postoperative handover improvement include combination of a postoperative handover checklist use, a standardized handover pathway and process and core

team member involvement (Kelly M. Pond, 2014, p.28). Kelly and Pond rationalized in their view that patient handoff not as a one way transfer of care but rather a team activity, instead. This should not be seen as a distraction or interference or even erosion of autonomy and impedance to swift decision making.

CHAPTER 6. CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

Handover of patients from or to PACU at CHUB is practiced most of the time however gaps existed in the team composure, equipment preparation and patients related tasks as well as the information being handed over. Lack of policies on postoperative handover standard of practice and non implementation of checklist whereby the staff handing over rely on their memories during handover report, were also identified. Information transfer is heterogeneous, some important information is not accurately communicated and many specific care plans not share impeding continuing postoperative care. These are potential risk factors to for various adverse patient outcomes and complications.

6.2. RECOMMENDATIONS

- ✓ **The standardization of handover protocol** decreases the risk of missed, fragmented and/or omitted information and promotes patient safety as well as provider satisfaction. The institution is accountable enhance safety culture through, development of policies on postoperative handover process standards. Fortunately CHUB is in accreditation process; there should be a way to standardize every ad each practice including development and implementation of policies and procedures.
- ✓ **Use of tools like checklists** helps as aid memory and improves uniformity of information transfer. The hospital must develop and implement handover checklist to harmonize information transfer between OR and PACU staff. The literature illustrates many tools which can be adapted to the institutional context.
- ✓ **Training of the staff:** there is no doubt that implementation of recommended practices like use of checklist in CHUB can lead to better patient outcomes. Although, these cannot be successful unless associated with attitudinal change by the organization and providers because they can be seen as a distraction, and eroding

their autonomy and decision making. There should be staff trainings to improve their attitudes. Thus the staff must be trained to improve their knowledge and attitude toward postoperative patient handover. Nurses being the ones on the front line in improving safety of care delivery, the contribution of Advanced Practice Nurses (APNS) within the institution must be valued in that process. Such nurse possesses the leadership skills, knowledge and motivation to effectively apply knowledge into practice and they are positioned to advocate for patient security and ensure a culture of safety. These must be involved in educating, training and mentoring the staffs and unit managers in accordance with standards.

- ✓ **Continuous monitoring and audits** are recommended to evaluate adherences to postoperative handover standards of practices.

- ✓ **Further studies** are also recommended to understand the impact of ineffective postoperative patient handovers on patients' care and outcomes. As well as the input of standardization and use of checklist on quality of handover and information transfer between OR team and PACU nurses

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APPENDIX

APPENDIX 1: PREOPERATIVE HANDOVER CHECKLIST

	Yes	No
1.Handover done		
Composition of the team members handing over		
2.Anaesthesia provider,		
3.OR nurse,		
4.Surgeon or Assistant		
5.PACU nurse		
<i>Handover sequence</i>		
Preparation prior to handover communication		
Equipment tasks		
6 Monitors and alarms set up before handover		
7.Pump ready before the handover		
8.Lines arranged and set up		
9.Urine bag located appropriately		
10. Drains located safely		
Patient-specific tasks		

11. Patient having oxygen		
12. Patient well covered		
13. Patient having good pain relief		
<i>Attendance & attentiveness</i>		
14. All indispensable individuals present		
15. Both giver and receiving sides at the bedside of thtient		
16. Both side sides attentive		
17. Absence of noise		
18. Noise is kept at its minimal level		
19. Absence of distractions		
20. Absence of other tasks parallel to handover		
21. One person speaks at a time		
22. Absence of interruptions		
23. Theatre team takes time to provide information to PACU nurse		
24. Time for question is provided		
25. The handover allows interactive communication		
<i>Institutional concern</i>		
26. Presence of post operative handover policy		

27. Use of handover post operative checklist		
28. Structured handover process		
Type of information transferred to PACU team during handover		
<i>Patient information</i>		
29. Patient name		
30. Medical history		
31. Allergy status		
32. Diagnosis		
33. Name of procedure		
34. Patient current condition and vitals		
<i>Anesthetic information</i>		
35. Intraoperative anesthetic course and any complications		
36. Blood transfusion (had/needs), location of blood bags		
37. Relevant medications patient received in theatre		
38. Plan for monitoring (vitals parameter range and action)		
39. Plan for intravenous fluids		
40. Plan for pain relief		

41. Plan for lines, eg, central venous, arterial		
42. Postoperative investigations, eg, Hb, Cxray		
<i>Surgical information</i>		
43 Intra operative surgical course and any complications		
44. Blood loss		
45. Number of drains and plan		
46. DVT prophylaxis plan		
47. Antibiotic plan		
48. Feeding plan		

Adapted from (Nagpal et al.,2011)

APPENDIX 2: INFORMED CONSENT FORM FOR ADULTS

This consent form must be signed by theatre and recovery room professional staffs (nurses, surgeons anesthetist and anesthesiologists) and surgical patients admitted in recovery room subsequent to detailed information about research being conducted intutled “**exploring patients’ handover process from operating room to postanesthesia care unit at university teaching hospital of Butare**”, as a proof of agreement to participate in this specific study.

It is comprised of two parts: **Information sheet**

Informed consent

1. INFORMATION SHEET

Introduction

I am Nzamurambaho humure philippe, a student in Masters of Science in Nursing specialty of Perioperative. I am managing to conduct a research about” **exploring patients’ handover process from operating room to postanesthesia care unit at university teaching hospital of Butare**” as a requirement for Degree of Masters. This research is supervised by Dr. Lilian Omondi and Prof. Oluyinka Adejumo.

The objectives of this study include

- ✓ To identify persons involved in post operative patient care handover in PACU/CHUB
- ✓ To assess whether the surgical team discharge their responsibilities through postoperative handover report to the PACU personnel.
- ✓ To assess postoperative handover sequences at CHUB post anesthesia care unit.
- ✓ To assess professional and environmental factors which can affect the process of prostoperative handover at CHUB/PACU.

- ✓ To identify the types of information transferred to PACU nurse during post operative handover process.

Data collection procedures: A researcher or trained research assistants detached from other clinical activities will observe the handover processes during post operative handoff of patient care between OR team and PACU nurses. Both OR team members who deliver patients to the PACU postoperatively and nurses who receive patients in PACU as well as the patients being handed over will be observed using a designated checklist. The researcher or trained assistants will complete the observation charts through the whole course of information transfer process. The data will be collected by observing and filling whether the elements of information provided on the chart are honored or not, and circling the corresponding answers (yes or no).

Recruitment of participants: The study will involve all handovers taking place in PACU within a period of 1 month excluding handovers done in nights and weekends and those which are done in other wards rather than PACU, like intensive care unit (ICU) and also patients having surgery under local anesthesia who are immediately sent to surgical ward because they don't need admission in PACU. All persons (patient, surgeon, operating room nurse, and anesthesiologist, anesthetist, and PACU nurse) involved in handover will be part of the study. However every single handover will be considered as a unit of the observation hence an element of the study population.

Autonomy in participation: Participation in this study is voluntary and participants are allowed to withdraw from the observation whenever they want without any negative effect. Participants will need to sign informed consent before participation in this study.

Consequences related to the participation in the study: There are no expected consequences related to the participation in this study. The participants have the right to participate in this study or withdraw from the study without consequences. Participants will be given contact numbers of persons to call if any queries whenever they encounter consequences related to the study, the researcher is committed to intervene.

Benefits of participant from the study: There are no individual and direct benefits to be expected by participant from this study but the results will help authorities and healthcare providers in general to plan for quality improvement hence quality surgical care.

Bonus and wedges or financial allowances to participants in relation to the study: There are no bonuses and wedge or financial allowances to participants in this study.

Confidentiality: Names of patients and staff who will participate in this study will be anonymous, and completed observation checklist will be kept in a locked cupboard, which will be accessed by authorized people only. Data will be kept in a computer secured with password.

Data dissemination: After obtaining the research findings, they will be communicated and presented to UR-CMHS-SONM and to CHUB administration so that recommendations can be implemented . After review and approval from experts this study will be published at the national level as well as the global level.

Persons to contact:

Chairperson of Institution Review board: 0788490522

Vice-Chairperson of Institution Review Board: 0783340040

Nzamura baho Humure Philippe (the researcher)

- email: philhumure@yahoo.fr
- phone: 0788816035 /0728216035.

INFORMED CONSENT

I,, willingly agree to participate in this research project on “**Exploring patients’ handover process from operating room to postanesthesia care unit at university teaching hospital of Butare**” conducted by NZAMURAMBAHO HUMURE Philippe, a student in Masters of science in nursing

specialty of Perioperative at University of Rwanda, College of medicine and health sciences, School of nursing and midwifery.

I understand that my participation in this study is entirely voluntary and that withdrawal from the study is deliberate and no need to give reasons. I understand that to withdrawal from this study will not affect my person my job and my relationships with the researchers.

I understand that I may not expect any direct benefit from participating in this study, but my participation may contribute in improvement of the surgical safety behavior and therefore quality of post operative patient's care. I also understand that the information I give will be kept confidentially to the extent permitted by law.

I have read and understood this information and agree to take part in this study.

Signature of the participant

Signature of the researcher.....

APPENDIX 3: CONCENT FORM IN KINYARWANDA

ICYEMEZO CY'UWEMEZA KUGIRA URUHARE MU BUSHAKASHATSI

Iki cyemezo gisinywa n' abakora umwuga wo kuvura mu ibagiro n'icyumba cyo gukangukiramo (abaganga babaga, abaforomo n'abatera ikinya) ndetse n'ababrwayi bakirwa mu cyumba cyo gukanguriramo bavuye kubagwa. Bagisinye nyuma yo gusobanurirwa ku bushakashatsi buri gukorwa bugamje gusuzuma uko igikorwa cyo guhererekanya abarwayi bava kubagwa bajya gukangurwa bakurwa mu kinya cyabahirizwa mu bitaro bikur bya kaminuza i Butare. Icyi cyemezo ni ikimenyetso cyo kwemera gukorerwaho ubu bushakashatsi.

1. Amakuru ku bushakashatsi

Interuro

Nitwa NZAMURAMBAHO HUMURE Filipino, Umunyeshuri mu cyiciro cya Gatatu cya Kaminuza mu ishamba ryo kwita kubarwayi mu gihe cyo kubagwa muri Kaminuza y'u Rwanda, Ishuri ry'Ubuwuzi n'ubumenyi bw'ubuzima. Ndi gukora ubushakashatsi bugamije: "Kureba uko igikorwa cyo guhererekanya abarwayi bava kubagwa bajya gukanguka bava mu kinya cyubahirizwa mu bitaro bikuru bya kaminuza bya Butare" nkuko bisabwa kugira ngo mbashe kubona impamyabumenyi y'icyiciro cya gatatu cya Kaminuza. Ubu bushakashatsi buhagarariwe n'abarimu: Dogiteri Lilian Omondi na Profeseri Adejumo Oluyinka.

Intego z'umwihariko z'ubu bushakashatsi ni:

- ✓ Kureba abitabira guhererekanya umurwayi ni bande bakora mu kihe kiciro cy'ubuvuzi (abaforomo, abadogiteri babaga cyangwa abatera ikinya)
- ✓ Kureba niba abaherekeza umurwayi aha mu ibagiro bibuka guha raporo abo abakorera mu cyumba bakanguriramo

- ✓ Kureba uruherekane rw'ibikorwa byo guhererekanya umurwayi ava mu ibagiro ajya mu cyumba akangukiramwo
- ✓ Kureba ibyagira uruhare mu guhererekanya umurwayi mu cyumba cyo gukangukiramwo cya chub byaba ibituruka ku banyamwuga cyangwa aho bakorera
- ✓ Kureba ubwoko bw'amakuru atangwa muri raporo mu gihe cyo guhererekanya umurwayi uvuye kubagwa.

Uburyo bwo gukusanya amakuru

Umushakashatsi 'abandi babuhuguriwe batari abakozi bari mu kazi ka serivisi bazajya bitegereza uko igikorwa cyo guhererekanya abarwayi hagati y'abakozi bo mu ibagiro n'abaforomo bo mu cyumba bakanguriramo kigenda bazajya bareba abazana umurwayi abamwakira ndetse n'umurwayi ubwe maze buzuzwe urupapuruo rwateguwe ruriho ibyingenzi mu guhererekanya umurwayi wabazwe bashyira akaziga kuri yego cyangwa oya bagendeye ku kuba niba icyo kintu cyakozwe cyangwa cyavuzwe.

Guhitamo abitabira ubushakashatsi

Ubushakashatsi buzareba ihererekanya ry'abarwayi ryose rizabera muri reveye (aho bakangukira) mu masaha asazwe y'akazi mu gihe kingana n'ukwezi. bushakashatsi ntibuzareba ihererekanya rizaba nijoro cyangwa wikendi cyangwa iribereye hanze ya reveye nko mu cyumba cy'indembe. Ntirizita kandi kubazabagwa hakoreshejwe ikinya kidasaba ko umurwayi akangukira muri reveye. Ababantu bose bazakora igikorwa cyo guhererekanya abarwayi (abaforomo ,abadogiteri babaga cyangwa abatera ikinya) n'umurwayi ubwe bazaba bashobora kugira uruhari muri ubu bushakashatsi. Ariko abantu benshi bahuriye ku gikorwa kimwe, hazajya habarwa igikorwa.

Ubwisanzure mu guhitamo gukorerwaho ubushakashatsi

Kwemera gukorerwaho ubu bushakashatsi ni ubushake kandi kubuvamo nabyo ni uburenganzira nta n'inkurikizi iba ku wabihakanye cyangwa uwabuvuyemo. Mbere yo

gukorerwaho ubushakashatsi ukorerwaho ubushakashatsi abanza gusinya uruhushya rwemerera abashakashatsi kumukoreraho ubu bushakashatsi.

Ingaruka zo gukorerwaho ubushakashatsi: Nta ngaruka cyangwa impanuka ziturutse kuri ubu bushakashatsi ziteganyijwe. Guhakana kubujyamo no guhagarika gukorerwaho ubushakashatsi watangiye nabyo nta ngaruka bizagira. Hazatangwa numero z’umuntu abagira uruhare muri ubu bushakashatsi bahamagara igihe bibaye ngombwa.

Inyungu zo kwemera gukorerwa ho ubushakashatsi :Nta nyungu z’umwihariko z’ako kanya ziteganyijwe kubakorerwaho ubu bushakashatsi. Nyamara amakuru azavamo azifashishwa muri gahunda zo guteza imbere no konoza imitangire ya service ku barwayi bavurwa babazwe.

Uduhimbazamusyi n’insimburamubyizi: mu kugira uruhare muri ubu bushakashatsi ntibiteganijwe muri ubu bushakashatsi

Ibijyanye n’ibanga muri ubu bushakashatsi: Amakuru ku bakorerwaho ubushakashatsi azaba ari ibanga nta mazina azajya ku rupapuro rw’ubushakashatsi. Amakuru azavamo nayo azabikwa mu ibanga kuko impapuro zuzuje zizashyirwa mu kabati gafunze mu cyumba gifunze, naho ibyashyizwe muri mudasobwa bizafungishwa umubare w’ibanga (pasiwadi). Abazagera kuri aya makuru ni ababifitiye uburenganzira gusa.

Uburyo bwo gusakaza ibyavuye muri ubu bushakashatsi: Nyuma yo gusesengura ibyavuye mu bushakashatsi, ibyavuye mo bizashyikiriza Kaminuza y’u Rwanda, Ishami ry’ubuvuzi ndetse n’ubumenyi bw’ubuzima n’ubuyobozi bw’ibitaro bya kaminuza bya Butare kugira ngo ibitekerezo byatanzwe bishyirwe mu bikorwa. Nibumara gukorerwa ubugororangingo n’inzobere kabuhariwe mu gukora ubushakashatsi ubu bushakashatsi buzashyirwa ahagaragara ku mbuga nkoranya mbaga kuburyo uwari wese wakenera kubukoresha yabubona.

Abo wakwitabaza igihe bibaye ngombwa:

Uhagarariye ikigo cy'ubugenzuzi : 0788490522

Umwungirije : 0783340040

Nzamura baho Humure Philippe (the researcher)

- email: philhumure@yahoo.fr
- phone: 0788816035 /0728216035

2. Kwemera kugira uruhare mu bushakashatsi

Njyewe,, nemeye ntahaswe kugira uruhare no gukorerwaho bushakashatsi bugamije: “gusuzuma uko igikorwa cyo guhererekanya abarwayi bava kubagwa bajya gukangurwa bakurwa mu kinya cyubahirizwa mu bitaro bikuru bya kaminuza i Butare” burimo gukorwa na NZAMURAMBAHO HUMURE Filipo, Umunyeshuri mu cyiciro cya Gatatu cya Kaminuza muri Kaminuza y'u Rwanda mu ishami ry'ubuvuzi ndetse n'ubumenyi ku ubuzima.

Nasobanuriwe neza ko kugira uruhare muri ubu bushakashatsi ari ubushake, kandi ko kuvamo nabyo ari uburenganzira igihe icyaricyo cyose navamo nta busobanuro nsabwe gutanga cyangwa ngo bingireho ingaruka haba kuri jye mu kazi cyangwa mu mibanire yanjye n'umushakashatsi.

Nasobanuriwe neza ko nta nyungu yihariye ngomba gutegereza muri ubu bushakashatsi ariko ko amakuru azava muri bwo azafasha inzego zifata ibyemezo mu by'ubuvuzi ndetse n'abakozi bo kwa muganga muri rusane bazayifashisha mu kunoza service z'ubuvuzi zitangwa ku barwayi bavurwa babazwe

Nijejwe kandi ko amakuru atanzwe muri ubu bushakashatsi azabikwa neza kandi akagirirwa ibanga.

Maze gusoma no gusobanurirwa neza ibisabwa byose muri ubu bushakashatsi nemeye kugira uruhare muri ubu bushakashatsi.

Umukono w'ukorerwaho ubushakashatsi

Umukono w' ukora ubushakashatsi

APPENDIX 4: CHILD ASSENT FORM

We are doing a study to learn about exploring post operative handover process. If you agree to be in our study, we are going observe healthcare providers shifting you from OR to PACU . We want to know whether they follow the same steps and content of information . For example, we will see you if they prepare all complete urgent tasks before handover meeting.

You can ask questions about this study at any time. If you decide at any time not to finish, you can ask us to stop.

The research is only about to observe you . If you sign this paper, it means that you have read this and that you want to be in the study. If you don't want to be in the study, don't sign this paper. Being in the study is up to you, and no one will be upset if you don't sign this paper or if you change your mind later.

Your signature: _____ *Date*

Your printed name: _____ *Date*

Signature of the researcher _____ *Date* _____

APPENDIX 5: CHILD ASSENT FORM IN KINYARWANDA

ICYEMEZO CY' ABANA CYO KWEMERA KUGIRA URUHARE MU BUSHAKASHATSI

Turi gukora ubushakashatsi bwo kureba uburyo abavuzi bahererekanya abarwayi bava kubagwa bajya mu cyumba bakangukiramo. Ubye wemera kugira uruhare muribwo tuzakurikirana ibikorwa mu gihe bazaba bakuvana aho wavuriwe ubagwa bakujyana aho ukangukira. Tugamije kumenya niba abaganga bahererekanya umurwayi babikora kimwe banahana amakuru kimwe. urugero tuzareba niba bitegura bakanabanza gukora ibyibanze mbere yo guhana raporo.

Ushobora kubaza ibibazo kuri ubu bushakashatsi no kuba wabuvamo igihe cyose ushatse .nta kindi ubu bushakashatsi buzagukoraho ni ukureba uko bigenda gusa. Nusinya uraba wemeye kubugiramo uruhare. Nubihakana ni uburenganzira bwawe kandi nta kibazo nta n'umuntu uzakurakarira nudasinya.

Sinya yawe

Sinya y'umushakashatsi

APPENDIX 6: AUTHORIZATION FOR DATA COLLECTION

APPENDIX 7: ETHICAL CLEARANCE