

Improving Nursing Handoff Process in the Cardiovascular Intensive Care Unit

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Improving Nursing
Handoff process in the Cardiovascular Intensive Care unit

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ABSTRACT

In the writer's organization, the analysis of the incident reports and sentinel events occurrence in the cardiovascular intensive care unit CSICU revealed that; handoff communication was the contributing factor for around 30% of the total incidents. Effective communication among nurses is imperative to ensure patient safety and deliver high quality of care; furthermore, the aim of the handoff process is to achieve effective, safe, and high quality communication when the responsibility for patient care is transferred from one nurse to another. This improvement project was implemented in CSICU; it was concerned with improving the handoff communication among nurses as a step to improve the quality of care provided, and impacts the patient safety through mitigating the omission of vital information that may result from ineffective handoff. Literature review showed that data obtained by joint commission international accreditation JCIA in their review of reported sentinel events indicated that the communication was the root cause of 65% to 70% of sentinel events occurrence. However, this project used the HSE change model (initiation, planning, implementation, mainstreaming). The improvement team formulated an SBAR based handoff form to standardize the handoff process during the end of shift report ,the project evaluation results showed a declining in the percentages of the handoff related incidents *and* improves the nurses satisfaction.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Every day, in any healthcare facility, the responsibility of a patient's care is transferred between healthcare providers, this process of transferring both patients' health related information and patients' care responsibility occurs in an active and interruptive environment that are typical of those in healthcare today.

Communication is central to human interactions, without it, people cannot relate to those around them, make their needs and concerns known, or make sense of what is happening to them(Casey et al. 2011). Effective communication among nurses is imperative to ensure patient safety and deliver high quality of care (Nadzam 2009). Nursing communication may occur anytime during the shift working hours. However, the communication that occurs at shift change between the off-going nurse (Sender) and incoming nurse (Receiver) is the most common form of communication among nurses, this way of communication is usually called the "End of Shift Report".

Ideally, the aim of the handoff process is to achieve effective, safe, and high quality communication when the responsibility for the patient's care is transferred from one nurse to another. Unfortunately, It is becoming increasingly apparent that a breakdown in communication system, in hospitals, compromise the patient

safety(Jefferies et al. 2012). Furthermore, Ineffective handoff communication may lead to detrimental consequences; evidence indicates that ineffective handoff can lead to incorrect patient treatment, delays in diagnosis and treatment, unnecessary tests and treatments, increase the length of stay, patient complaints and malpractice claims(Manser & Foster 2011).

The joint commission on accreditation of health care organization (JCAHO) defines handoff as “contemporaneous, interactive process of passing patient –specific information from one caregiver to another for the purpose of ensuring the continuity and safety of patient care” (JCAHO 2006). Data obtained by joint commission international accreditation (JCIA) in their review of reported sentinel events indicated that the communication was the root cause of 65% to 70% of sentinel events. A “sentinel event” is defined by the joint commission as any unanticipated event in a healthcare setting resulting in death or serious physical or psychological injury to a patient that is not related to the natural course of the patient’s illness; Thus, the joint commission identified the importance of developing a standardized approach to handover communication through designated it in national patient safety goals 2006 (JCIA 2006).

In this chapter, the background and the rationale for carrying out the organizational development (OD) project is discussed, the aim and related objectives are outlined, analyzing the nature of the change will be presented, the writer’s role in the change project will be explained. In chapter two, the main themes related to the literature review will be extracted from the relevant articles, the discussion and the implications of these themes for the project will be conducted to provide evidence and support the rationale for the change.

Chapter three explores the methodology and relevant steps for change within the HSE change model stages. Chapter four discusses project evaluation through quantitative and qualitative data collection and analysis. Chapter five addresses the change project impact, strengths, limitations and recommendations for possible future improvement; finally, the conclusion is provided.

1.2 Background and Rationale for Carrying out the Change:

The writer's organization is one of the biggest governmental healthcare organizations in Riyadh, the kingdom of Saudi Arabia; it is a tertiary referral hospital with a total capacity reaches up to one thousand beds, the organization is a JCIA accredited hospital, it provides healthcare services to the customers from different areas in the kingdom through operating with nearly ten thousand employees.

The change was implemented in the Cardiac Surgical Intensive Care Unit (CSICU), this unit consists of twenty five beds capacity; the nature of the admitted patients is critically ill, post cardiac surgery Patients, they receive their care by highly trained physicians and consultants. The nursing service managed by one head nurse and two assistant head nurses, they are managing total number of ninety five registered nurses to provide around the clock care and deliver immediate post cardiac surgery care for both age groups adults and pediatric patients.

This project has focused on inter-shift handoff transfer; the process of transferring a patient between two healthcare providers (nurses) at the end of the nursing shift, this endorsement process can pose a major challenge in a busy and high care demand intensive care unit. The intensive care refers to the special treatment given to patients who suffer from serious medical problems. The dynamic and fast –paced environment of

the intensive care unit demands efficiency during handoff that may compromise information exchange, the care for each patient demands a robust and immediate knowledge of critical and highly complex data(Collins et al. 2012a).

The diversity of practical backgrounds and absenteeism of handoff standardization has created inconsistencies in the way that nurses carrying out end of shift report handoffs. In the cardiac intensive care unit, the nurses are from different nationalities and different backgrounds; they are the chief health care providers who providing continuous and direct patient care. The usual nurse – patient ratio is one to one, the nurse spending a great deal of time and energy in monitoring, collecting, integrating and utilizing patient’s data for continuous caring process. Additionally, the ICU patients are not usually able to participate in their self –care activities; they cannot because of the nature of their clinical conditions which resulting in increased vulnerability to medical errors.

Implementing a new handoff tool in the cardiac intensive care unit is to ensure that nursing handoff practice is performed in a systematic and structured manner. However, the tool will guide and complement the verbal handoff. The premises from using the tool is to prevent the omissions of care and mitigates errors in patient’s care, therefore, impacting the patient’s safety and improving the quality of care delivery.

Moreover, standardizing and streamlining the structure of the handoff process will minimize the demand on recalling the memory during the patient endorsement process. Because of human factors and the interruptive surrounding environment, recalling the

memory may result in omission of significant patient information and communication breakdown.

In the writer's organization, patient safety section analysis of the incident reports and sentinel events occurred in CSICU revealed that: handoff communication was the contributing factor for around 30 % of these incidents, unfortunately, the outcomes of these incidents varied from mild to severe incidents that may affect the patient care adversely. Therefore, to mitigate these handoff communications based incidents, its detrimental effects, the negative impacts on the quality and safety of patient care process and from the organization's endeavor to be abreast with the JCIA improvement initiatives, the quality department with the cooperation of cardiac intensive care unit management team decided to carry out an improvement project to improve the staff handoff communication process.

1.3 Project Description

To describe the project, it is important to describe the current handoff practice. In cardiac intensive care unit, there is no tool or form to guide the nurses during the patient's endorsement process, however, each nurse selects his or her own way to endorse the patient, making handoff inconsistent. In addition, the value and appraisal placed on handoff varied from one nurse to another, meaning that some nurses may spend time and efforts during handoff time and other nurses will make it fast and superficial.

The writer is a quality analyst in the quality management department (QMD); the department is responsible for coordinating and implementing the performance improvement initiatives in the organization in order to be in line with the mission, vision, and values of the organization. The writer role was leading the improvement project.

In this improvement project, the decision was to follow the philosophy of Health Service Executive (HSE) change model (initiation, planning, implementation, and mainstreaming), the HSE change model has been developed to improve the experience of healthcare customers and service users, it helps the staff and teams to play a meaningful role in working together to improve service and promote a consistent approach to change across the system (HSE 2008).

1.4 Aim and Objectives:

The aim of this project is to improve the handoff communication among nurses through the introduction of the standardized handoff tool (form) during the end of shift report. The objectives are :

- To improve the patients' safety by reducing the number of safety reported incidents resulted from poor handoff communication.
- To increase nurses' satisfaction post handoff process.
- To decrease shift report time by streamlining the handoff contents.

1.5 Conclusion:

Handoff communication is basic for health care providers; the aim of handoff should achieve safe, effective, comprehensive and high quality communication during the transitions of patients' care. Effective handoff is critical as it has been shown that the breakdown in communication between health care providers is a major contributing factor in sentinel events. This change project is concerned with improving the handoff communication among nurses as a step to improve the quality of care provided, and

impact the patient safety through mitigating the omission of vital information that may result from ineffective handoff. HSE change model will be used in this OD project. The next chapter will show the reviewed literature pertaining the handoff process among nurses and its relevancy to this change project.

CHAPTER 2

THE LITERATURE REVIEW

2.1 Introduction

Conducting a literature review is the mean of demonstrating the author's knowledge about a particular field of study; it informs the influential researchers and research group in a specific field, allows discovering important variables related to a specific topic and rationalizes the research significance(Randolph 2009).

Our patients deserve the efforts and time on our part to prevent any harm that may occur due to poor communication, or could result because of incomplete endorsement between health care providers. Ineffective handoff communication is recognized as a critical patient safety problem in health care (JCIA 2013).

The intention of this project, as stated in chapter one is to implement a new handoff communication tool for nurses during the change of shift report, mainly to improve the current handoff process in the interest of patient safety. The literature review was approached from the concepts identified and related to handoff process standardization when transferring the patient care from one nurse to another during shift report, such standardization may improve the quality of care provided and impact the patient safety.

The search strategy was to search terms or keywords such as (handoff, handoff tools, nursing shift endorsement, patient safety, nursing handoff, and handoff

communication), the databases that were utilized to include (CINHAL, PubMed, MEDLINE, PRO-QUIST, and Google Scholar). The search was limited to English language materials and to relevant publications that were published between the years (2008 – 2014). In this chapter, the findings from the literature review are organized in two folds; one is the literature that describes the context of standardizing nursing handoff communication during end of shift report (current handoff practice), and the other is pertaining the impact of implementing a standardized handoff tool on the patient safety and quality of care.

2.2 Context of standardizing handoff communication:

The definition of handoff varies and there are multiple synonymous terms that are used to describe the event that occurs when the care of the patient is in transition between healthcare providers (Friesen et al. 2008). Cohen & Hilligoss (2009) identified patient's care handoffs as the exchange of patient's information between healthcare professionals, accompanying either a transfer of control or responsibility. Regardless if its known as handovers, sign-off and inter-shift report, handoffs occur when nurses provide pertinent information about their patients to facilitate care continuity (Matney et al. 2014). Usually, this information is a synthesis of facts and notes collected during the care process from potential sources such as health records, team members, changes and remarks on the patient condition over a period of time.

Patient handoff between nurses at shift change has been an important process in clinical nursing practice, allowing nurses to exchange necessary patient information to ensure continuity of care and promote patient safety (Maxson et al. 2012). This highlights the connection between many important aspects such as patient information exchange as

an input leads to better continuity of care and impact the patient safety as a desired handoff process outcomes.

Chung et al.(2011) used evidence –based shift report tool to improve nurses' communication, the initiative outcomes showed decreased frequency of missed information. Likewise, another initiative implemented to translate an evidence –based protocol for nurse to nurse shift handoffs recommended that standardization related to transfer of information in the clinical practice is an essential aspect of patient safety and improves clinical outcomes (Dufault et al. 2010).

Using continuous performance improvement (CPI) methodology as per Klee et al.(2012) to standardize the content and process of nursing shift report through utilizing of plan-do-check-act (PDCA) process was conducted, two rapid process improvement workshops (RPIWs) were implemented with the purpose of defining current state process and identifying ways to improve this process, however, the realized improvements following CPI workshops completion resulted in identification of safety concerns or errors before they reach the patient and improve the quality of exchanged information.

The study was conducted in the ICU, in 2011, on one group pre-test –post-test quasi-experimental study, the study population consisted of all ICU nurses affiliated with a large scale teaching hospital located in Mashhad –Iran, data was collected using a shift handover evaluation checklist. As the main purpose of the study was to change the nurses shift handover behavior, the using of Lewin's change theory (Unfreezing, Change, Refreezing) was followed to implement behavioral or cultural changes. Study findings showed that post implementation of the designed shift handover protocol, the nurse's performance improved in terms of patient safety through updating their caring program,

maintaining the continuity of care, and improving the quality. Similar study took place in a 25-bed medical intensive care unit (MICU) within a large academic health centre in the United States, by School of Nursing, the University of Alabama at Birmingham hospital, this study revealed that using a standardized handoff tool is an effective way to improve MICU nurses communication during shift report (Jukkala et al. 2012). This quality improvement study implemented through the application of the clinical microsystem framework with the following steps (1) develop a leading team (2) make a diagnosis (3) implement treatment, and (4) follow-up. The study used a questionnaire as a qualitative method to evaluate the new standardized communication tool, data collected on the nurses' perception of handoff communication during shift report showed improvement in three domains: communication openness, quality of information, comprehensiveness of the shift report.

Petrovic et al. (2008) argued that although improving handoff is an important national patient safety goal, many questions remain unanswered regarding how such improvements can be accomplished and measured. Implied in this is understanding that despite standardization of handoff appears to be a laudable goal, flexibility also required in an emergency situation to allow the handoff sender to report the most important information first (Riesenberg 2012).

To emphasize the value of face-to-face patient's handoff that offering the chance and the ability to ask questions between the sender and the receiver. Safety et al. (2010) indicated that the three most important features of effective handoff are two-way face-to-face communication, written support tools and content in handover that captures the attention.

With the increasing availability of electronic medical records (EMR), work has been underway to increase the potential for using an electronic solution for standardizing the content of the information exchanged during the handoffs (Vawdrey et al. 2011). Unfortunately, 20%-30% of the information exchanged in the current verbal methods is information that is never documented in the EMR (Staggers et al. 2012). This denotes that the EMR is not a comprehensive source of patient's information, and the use of endorsement tool or form to contains the non-EMR documented information is vital.

The use of a structured methodology of communication like using a standardized tool can improve the quality of information exchange (Study et al. 2010). Within this scope, (SBAR) communication tool which stands for (Situation, Background, Assessment, Recommendations) was implemented in healthcare, the tool was developed in the US Navy to standardize important and urgent communications in the nuclear submarines.

SBAR is a standardized method that enhancing a culture of safety, it gives a real structured report from an aide to aide (Donahue et al. 2011). Similar results from Beckett & Kipnis (2009) to evaluate the effectiveness of the SBAR collaborative communication intervention concluded that the SBAR proved so successful in a sustainable improvement in communication, collaboration, and safety.

Researchers have attempted to develop minimum data sets and standard operating protocols for handover, the widely used SBAR technique formalizes the inputs and outcomes of handover and has the advantage of creating trust within the healthcare team (McMurray et al. 2010). Even with using handoff tools or protocols, bedside handoff should be considered in the clinical settings (Johnson & Cowin 2013), in fact, it is a good

time for nurses to check equipments, medications and invasive adjuncts like intravenous lines and tubes, allowing discussion and information exchange between the nurses.

2.3 Impact on patient safety:

Interest in handoff communication has increased due to the attention raised by the institute of medicine (IOM), in 2001, IOM reported that inadequate handoffs are “where safety often fails first” (IOM 2001). Joining this call to improve handoff communication, the joint commission states that an estimated of 80% of serious medical errors involve miscommunication between caregivers when patients are transferred or handed off(JCI 2006).Thus, in 2006 the joint commission identified the importance of developing a standardized approach to handoff communication by designating it as a National Patient Safety Goal : improve the effectiveness of communication , including the opportunity to ask and respond to questions(JCI 2006).

Patient safety is a critical component to the quality of healthcare(Matic et al. 2011) . Whereas healthcare organizations endeavour are to improve their quality of care, there is a growing recognition of the importance of establishing a culture of patient safety(Nadzam 2009).Communication of information between healthcare providers is fundamental to the patient care. The joint commission in their Center for Transforming Healthcare emphasized that healthcare using a standardized form, tool, and method every time the handoff occurs, is an effective solution to improve communication and handoff quality.

In 2009, the Joint Commission Center for Transforming Healthcare developed a customized tool that measures the effectiveness of handoffs within an organization or to another facility and provides a proven solution. Ten of the Center’s collaborating

hospitals began a project focused on handoff communication, resulted in developing the Targeted Solution Tool (TST) for handoff communication.

The solutions from the Center were using the acronym SHARE, which stands for (Standardize critical content, Hardwire within your system, e.g.: developing standardized forms, tools, and methods such as checklists, Allow opportunities to ask questions, Reinforce quality and measurement, Educate and coach). It had been proven that after using the tool and the solutions, healthcare organizations reported an increase in patient and family satisfaction, moreover, staff satisfaction and successful transfers of patients information. Meanwhile, it is interesting to mention that, from the participating hospitals which had been fully implemented the solutions, and based on overall satisfaction of the handoff, the percentage of the defect rate for the receiver declined from 41% at baseline to 18% post launching of the Targeted Solution Tool (JCCTH 2013).

Handoff tool is identified as any memory aid or standardization method used during the handoff process(Blaz & Staggers 2012).Mainly, the nurses will utilize the information which exchanged during shift report to make appropriate clinical decisions, and to prioritize patient's care during the upcoming shift. Additionally, handoff provides a venue for education, professional development and emotional support(Blaz & Staggers 2012).

It is becoming increasingly apparent that the breakdown in communication systems, in hospitals, compromises patient safety. Consequently adverse events can be reduced if a complete and accurate information of the patient's condition, care, and response to care are really available to all health care members through informative and meaningful communication (Jefferies et al. 2012).

To investigate how the patient's problems, interventions, and outcomes of care are described in both oral and written communication in nursing, and whether the omission of critical information occurred;The study was done in Australia and published in 2012 shows that the scope of patient information conveyed during clinical handover has been identified and confirms the importance of clinical handover as the primary source of information for nurses(Jefferies et al. 2012).

Ensuring effective communication during shift report is particularly important in high –stress environments such as Intensive Care Units(Jukkala et al. 2012), more importantly , nurses use the shift report information to make decisions and to build up the patient's care plan(Chung et al. 2011).Collins et al. implement a study in the cardiothoracic intensive care unit, the aim was to search for common ground in handoff documentation, the findings indicated that the development of semi-structured, patient-centered interdisciplinary handoff tools with discipline specific views customized for speciality settings may effectively support handoff communication and patient safety(Collins et al. 2012b).In other words , ambiguities and incomplete information can increase the risk of adverse events and results in patient harm(Matic et al. 2011).

Staggers et al.(2012) argued that the presence of technology during handoff process will not result in improvement in safety and productivity or even result in its use, in practice.Effective electronic solutions for handoffs will require contextually based information that is integrated across electronic health records to be sufficient to support nurses' work(Staggers et al. 2012).

A prospective interventional study published in February 2014 showed that implementation of communication tool Situation–Background-Assessment-

Recommendation (SBAR) had been success to decrease the proportion of incident reports due to communication errors (Randmaa et al. 2014).

With the intent to develop handoff practices to support the patient safety, Alvarado et al.(2006) provide evidence based framework to support nurses' handover of patient care and to implement a standardized approach to transfer of accountability (TOA), a standardized approach developed nursing standards during handoff and introducing written tool with face to face reporting, this approach improves the effectiveness and coordination of communication among nurses at shift change.

2.4 Conclusion

Handoff process includes three major elements: exchange of information, transferring responsibility and accountability of care, providing continuity of care by preparing the team taking over the patient care, so they are able to anticipate and make a timely and data informed decisions while providing the patient's care.

Despite evidences of the importance and the critical nature of handoff communication, there is no recommended standardized handoff format as the best to use. However, ISBAR method is a structured methodology of communication that can improve the quality of information exchange in most healthcare organizations.

The next chapter will show the methodology and the change process followed to implement the change, the health service executive (HSE) model will be explained.

CHAPTER 3

Methodology and the Change Process

3.1 Introduction

“The only thing that is constant is change” (Heraclitus...).

In such a rapidly developing environment as health care, change is a constant feature just like it is in our everyday lives. Similarly, our population is changing, and our patients and their expectations are changing too. The rapid change mandating the healthcare managers and the improvement teams to work hard, and continually improve healthcare services in order to meet their customers’ needs and expectations.

Without a solid knowledge of change management, healthcare leaders will not be able to improve the quality in their organizations at the rate needed to bring about substantial improvement, this knowledge and change implementation skills is essential for current and future healthcare leaders(Grimm 2010).

Organizational development (OD) is a process that applies a broad range of behavioral science; knowledge and practices to help organizations build their capability to change and achieve greater effectiveness, these achievements include increased financial performance, employee satisfaction, and environmental sustainability (Cummings & Worley 2014).

To implement organizational development project, it's highly important to assess and understand the organizational culture and the environment where the change will take place. Organizational culture refers to the values and beliefs that have existed in the

organization for a long period, and to the beliefs of the staff and the foreseen value of their work that will influence their attitudes and behaviors (Tsai 2011a).

People resist change for reasonable and predictable reasons; examples are fear of loss of power, job security, additional workload, and for many other known or unknown reasons. However, resistance to change is often viewed from the perspective of those promoting it, more importantly; the perspective of those impacted by the change should be well understood (HSE 2008).

Linking organizational development (OD) to organizational culture is very important for change implementation and success, draws attention to the fact that leadership is a key to effecting change and promoting development through interventions which focus on building functional groups of leaders and creating change space that promotes shared growth and development(Andrews et al. 2010).Although the change must be well managed, it also requires effective leadership to be successfully introduced and sustained.

3.2 The Change Model

Nowadays, the continuity and the rapidity of change in healthcare services are well noticed and steering the health care leaders and workers at a fast pace, either by a new health related discoveries or the vastness of technological development in our daily life, therefore, it cannot predicted easily and can merge over time.

Over the past three decades, medical knowledge and technology have expanded at an exponential rate. Indeed, the advances made over the past thirty years have moved health care farther forward than the hundreds of years before them. This steep rise in the

complexity of healthcare has necessitated a high degree of specialization. For this reason, effective management is more important than ever.

In this OD project, the writer decided to utilize the Health Service Executive (HSE) change model. The HSE change model has been developed to improve the experience of healthcare customers and service users, it helps the staff and teams to play a meaningful role in working together to improve service and promote a consistent approach to change across the system (HSE 2008).

The HSE change model describes the journey of transformation that enables people to move from the current situation to the desired future, in line with the shared vision of change; it is based primarily on the four stages:

- Initiation
- Planning
- Implementation
- Mainstreaming

The HSE model stages are depicted in figure (1). The model, through its different stages emphasize that, in practice, change must be approached as a continuous process in which all of the stages and steps are interrelated and influence each other.



Figure 1: HSE change model, adopted from (HSE 2008)

The initiation stage is the preparation to lead the change and conducting a thorough organizational analysis. It starts with defining the project leader, the leader conduct analysis to the external environment such as accrediting body and its requirement, economic status, political or governmental issues, likewise, conducting internal analysis of the organizational culture and values that may support or resist the intended change.

Change drivers and resistance factors identification are important to predict the desired outcomes; change drivers will set the degree of urgency that is needed to be communicated to the stakeholders and the change impacted people. The urgency of the communication requires the leader to form a strong team to direct the change and keep the process on the right track while looking forward to the vision of the change and

aiming toward the desired improvements. Finally, the business case of the change outlined with the allocation of the resources, costs and time limit of the change, business case (project initial document) is the preliminary, broad approval for proceeding with the change efforts and move forward to the next stage.

The planning stage of the model is focused to build organization-wide commitment, momentum and capacity for a change. Staff commitment must be gained by communicating the business case for change and the change approach to the employees, this commitment can be established by the provision of support, such as training and knowledge development in order to fit with the required change. In addition, assessing the current situation against the future vision for change and communicate the assessment to the key stakeholders to describe what is needed to change and modify. Finally, a detailed project implementation plan has been developed, provides a valuable roadmap for moving forward in a planned manner.

The third stage is implementing the change, at this stage, monitoring the project plan is important to ensure that it is meeting its purpose by signalling that the new ways of working are implemented, and the old ways are stopped or discontinued. To monitor this plan, the leader should be actively involved getting continuous feedback and re-evaluate the implementation process in order to sustain the momentum of change and keep the change efforts on track.

The HSE model final stage is the mainstreaming, this stage where the mechanisms for evaluation are implemented to focus attention on the success of the change. Employees efforts must be appreciated and recognized, additionally, the leader

must support the employees to embed the changes into their everyday activities, behaviors, and daily practices.

Finally, as change nature is continuous, the leader should look back and identify the learning opportunities from the change experience, as well as a team should reflect on the change project through identifying the positive and negative aspects as a lesson to be considered in the future change projects, keeping in mind to spread the innovation and improvement on a larger scale throughout the entire organization.

3.3 The Change Process

3.3.1 The Initiation Stage

Preparing to lead the change:

The purpose of this stage is to create a readiness, to build the foundations for effective change implementation, to mobilize support across the organization and to develop a solid business case for the change efforts (HSE 2008).

Quality management department and cardiac intensive care unit management team decided to carry out an improvement project. The project was organizational vision and mission- driven aim. Intended to improve the nursing handoff process through implementing a standardized nursing- end of shift report- handoff tool, the ultimate vision of the change is to have an optimum and comprehensive nursing handoff that impacts the patients' safety and improves the quality of care.

Linking handoff- communication to (high volume, problem prone, high risk, and high cost) criteria will highlights the importance of the intended change; this linkage will add further identification of the necessity and objectivity for the change. The daily

transitions of patient’s care categorizes handoff communication as a high volume issue in the healthcare sector, handoff may occur any time; it is one of the most frequent activities occurring in any health care system. Additionally, the type and nature of transferring information during the handoff process poses many risks and may compromise the patient’s safety if conducted ineffectively. Hence, the consequences of ineffective handoff may include inappropriate treatment, increased hospital length of stay, inefficiency from rework leading to increasing the cost.

Handoff process is affected by so many factors, unfortunately any of these factors may compromise the effectiveness of handoff process and may lead to handoff failure as depicted in figure (2).

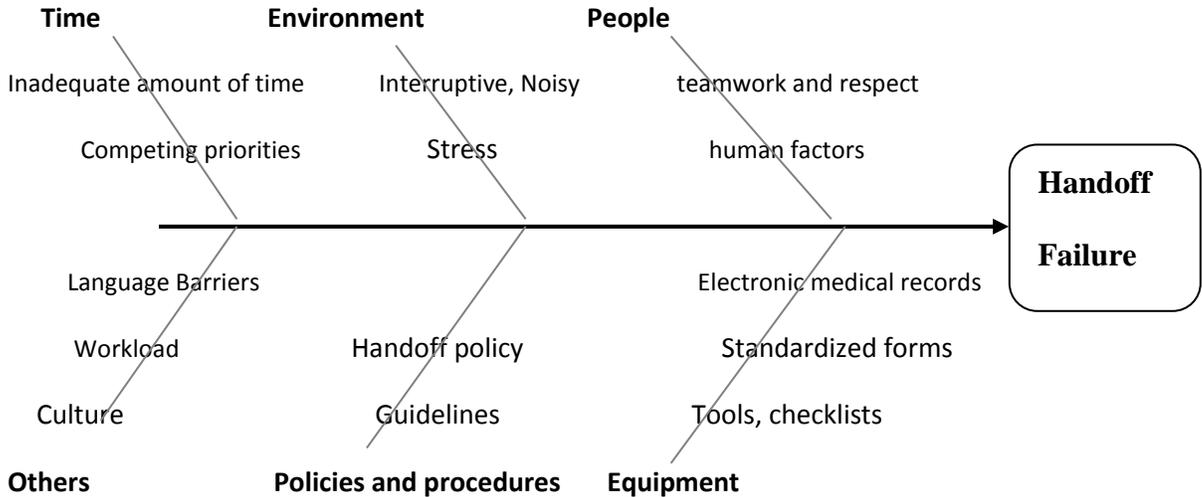


Figure 2: Cause and effect diagram for Handoff Failure

The above cause and effect diagram shows the possible causes may affect the handoff process. Some of the causes may affect the handoff process positively, like using a standardized form during endorsement, but others may negatively affect the handoff

process as noise and interruptive environment. On the other hand, some causes we may have total control of it and others have partial or no control to modify or mitigate its effect on the outcomes of the handoff process.

To systematically analyze the factors founded in the organization, and to frame these factors in terms of pressures that support change in the desired direction (driving forces), to those pressures that support the status quo (restraining forces), the writer decided to utilize the force field analysis tool.

The drivers and barriers for change illustrated in figure (3), the figure shows the driving forces toward the change that facilitate or increase the likelihood of success and the restraining forces that decrease or restrain the change to maintain the status quo. However, for a change to succeed, the driving forces must be strengthened, and the restraining forces weakened.

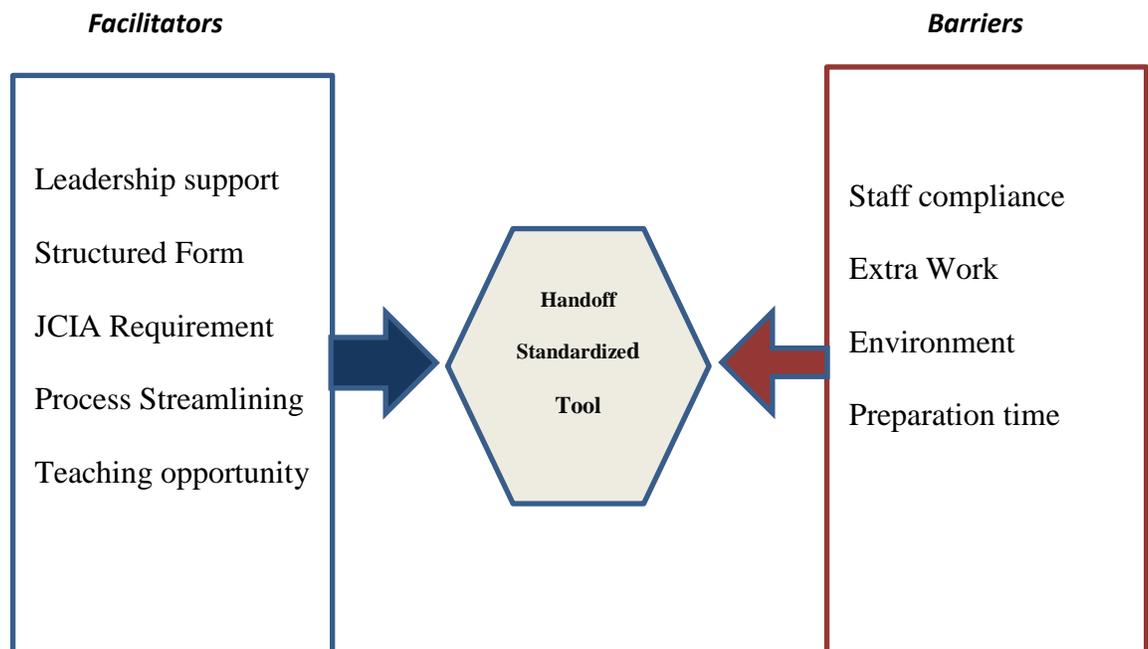


Figure 3: Force field analysis

The force field analysis tool used to show that the driving forces scored higher than are the restraining forces, yet, leading to the expectation and prediction of the OD project success.

Determining the degree of urgency:

Leadership and change expert John Kotter finds that creating a sense of urgency is the first step in a series of actions needed to succeed in bringing about change (Kotter international 2012). During the first week of December 2013, a lecture was conducted by the writer (the project leader) to the CSICU staff in order to introduce the change initiative, the urgent drivers of the change were explained, the expected outcomes and the timeline of the project highlighted. In addition, the writer demonstrating a connection between the handoff and its impact on the patient safety, such connection can be an effective approach to make the case for change.

The degree of urgency stemmed from internal and external factors. Internally, the increment of the adverse incidents where the handoff communication tends to be a contributing factor for the incident occurrence. These incidents were varied in their severity. Unfortunately, some of these incidents were sentinel events that led to patient harm, like feeding the patient when he should be (NPO) which caused aspiration and intubation, and others had affected the hospital cost as double sampling of laboratory tests, increase the length of stay due to not getting the patient informed consent for surgery or procedure, etc. .

Table (4) shows the percentages of communication- based incidents from the total number of incidents reported in the intensive care unit for the four consecutive quarters in 2013. In the first quarter, the percentage of handoff communication incidents were 28% of the total number of reported incidents followed by 38% in the second quarter, then 29%, 33% in the third and fourth quarters.

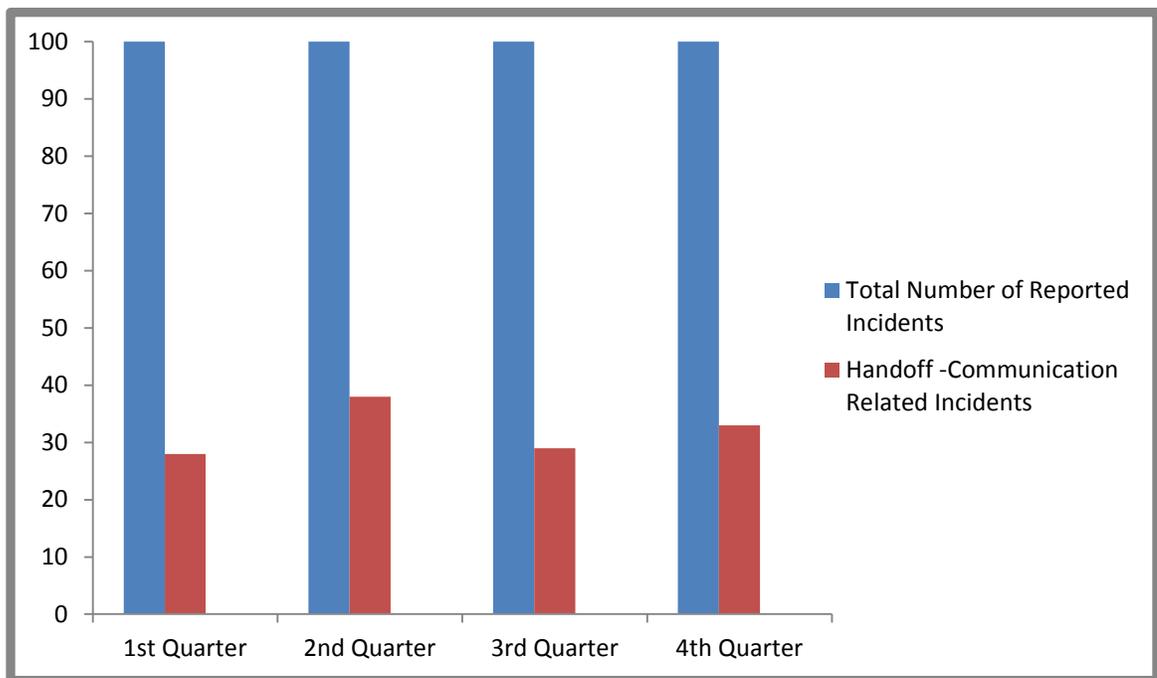


Figure 4: Quarterly percentage of handoff related Incidents 2013

Secondly, the patient safety culture survey was conducted in the entire organization, the survey was adopted from the Agency for Healthcare Research and Quality (AHRQ). The survey results recommended that the initiative should be considered to improve the patient handoff process, and to ensure safe patient care information transfer among all healthcare providers.

The survey includes items to measure 12 areas or composites of patient safety culture, handoff and transition of care was one of these components, it is assessing the extent to which important patient care information is transferred across hospital units and during shift changes. However, regarding the distribution of respondents by staff position, nurses were representing the highest percentage among hospital employee respondents with 40% response rate percentage. (Distribution of respondents by staff position: appendix (B). Figure (5) shows the AHRQ results regarding handoff communication.

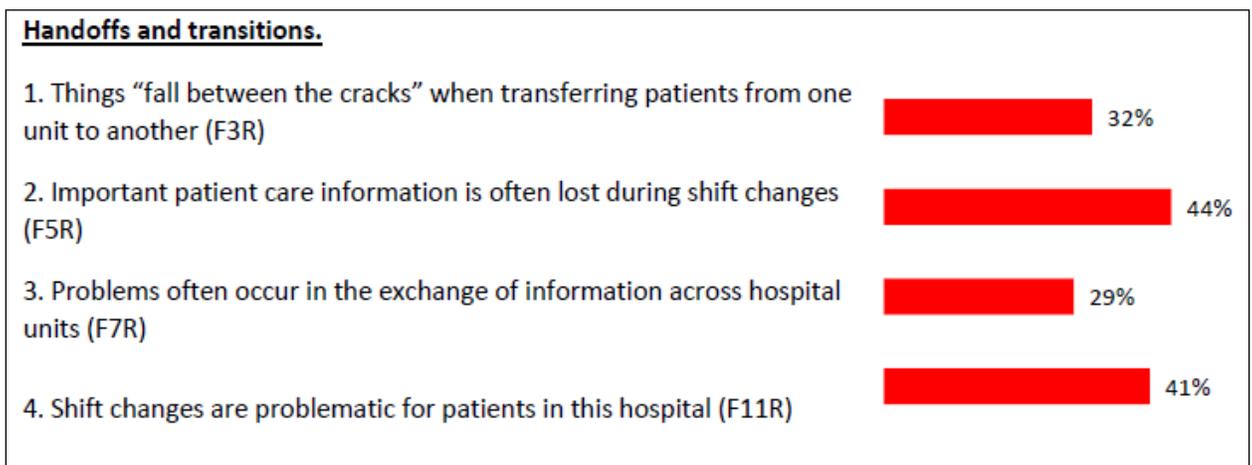


Figure 5: Handoff survey results

An (R) indicates a negatively worded item, where the percentage positive response is based on those who respond “strongly disagree” or “disagree” or “never” or “rarely”. Meaning in element one, for example, 78% of the staff “strongly agree” or “agree” or “always” or “most of the time” things fall between the cracks when transferring patients from one unit to another.

Externally, the writer's organization is following the JCI requirements and guidelines, the JCI emphasizing the importance of effective communication during the patient's handoff process, and designating it as a second international patient safety goal (JCI 2006). The new version of the JCI standards-fifth edition-2014 states "the hospital develops and implements a process for handover communication, Standardized critical content for communication between the patient, family, caregiver, and health care providers, can significantly improve the outcomes related to handovers of patient's care (JCI 2014).

Furthermore, the writer's organization is preparing to achieve the magnet recognition award for excellence in nursing by the American Nurses Credentialing Centre (ACCN). This award demonstrates sustained excellence in nursing care and practice, thus, in anticipation of meeting the expectation of the Magnet program, nursing leaders in the writer's hospital are facilitating and supporting nursing care improvement initiatives and career progress.

Leadership role and key stakeholder:

The leadership roles and skills are needed to enable the change to be successful (HSE 2008). To ensure leadership support and commitment for the quality improvement initiative, the writer submitted a proposal in the form of an idea for improvement to the quality management department and the nursing affairs; this proposal was discussed by the nursing practice committee and get approved by the quality department and the Chief of Nursing Officer (CNO) to be started and implemented in the intensive care unit.

After the leadership acceptance, commitment and support to implement the desired change, the identification of key stakeholders to assess a culture of readiness started through utilizing Power / Interest Grid for stakeholders' prioritization. Stakeholder analysis is a technique that used to identify the key people who have to be involved, and their ability to influence the outcomes of the change. There can be no doubt that many healthcare professionals are resistant to change, and this has an effect of stifling quality improvement (Kumar 2013). Thus, having mapped each of the stakeholders based on their interest and impact on the change will shape the level of communication and engagement required for each of them.

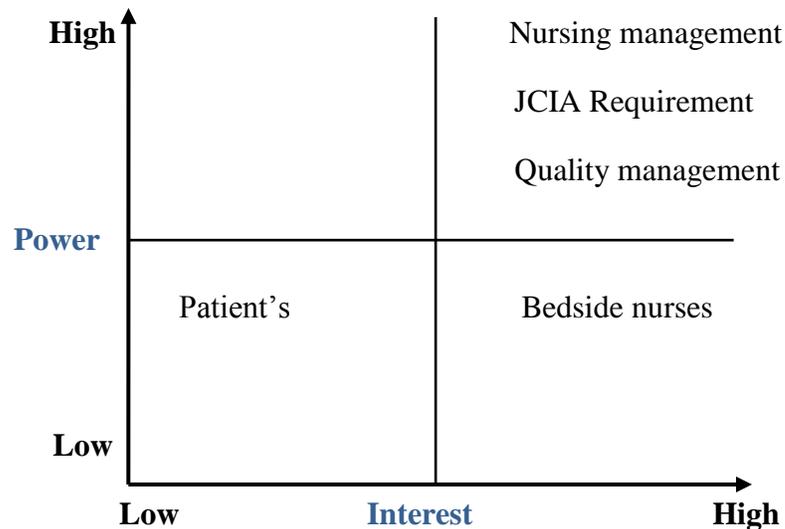


Figure 6: Stakeholders Power/Interest Grid

If the initiator listen to the people the change involves , using their advices,and more importantly involve the potential resisters in some aspect of the design and

implementation of the change, they can often forestall resistance (Kotter & Schlesinger 2008). However, The staff nurses are the group who will be impacted by the change; they are the one who perform the service through implementing and practicing the change (new handoff tool) in their daily work, they practicing the change while endorsing the patient in a shift basis, consequently, they are expected as a key people who might resist the change. Dealing with staff resistance was started by involving them in the project as team members, furthermore education and communication methods were performed to clarify the change possible consequences and to avoid inadequate or inaccurate information and analysis.

The culture within an organization is very important to consider; it is playing a large role in whether the change will success or fail, an organization with a strong culture has common values and codes of conduct for its employees, which should help them to accomplish their missions and goals(Tsai 2011b).

Besides the nursing upper management support and their interest to standardize the handoff process among nurses. The organizational culture within nursing group is affected by the continuous quality improvement approach arises from the JCIA standards and commitment to their guidelines for the last fourteen year accreditation and re-accreditation cycles. More importantly, since three years the organization has started preparing for the Magnet Recognition Award to be achieved in 2014, these preparations helped in spreading the culture that fosters positive working relationships in the workplace and promote nurses behaviors that help nurses to do their very best.

Creating the guiding coalition is a vital step to introduce and implement the change; it is putting together a group with enough power, work like a team to lead the change. This coalition created by finding the right people, creates trust among them and develops a common goal for all.

Team forming:

Effective team working has become a basic concern for most organizations, besides many other factors influence the team's performance; considerable attention has been given to the team composition in terms of team members' diversity and the roles they play in the team, thus, the team composition has been identified as a key factor that influences the team performance (Senior 2005).

The appropriate team structure is very important in performance improvement project because creating the team does not itself assure the team work. Therefore, the team must comprise of individuals whose skills complement each other, and have a shared purpose as outcomes depend on the collaborative efforts of the group rather than individuals within the group.

Although large team size can generate more outputs because additional members add resources and skills to the team, additional members will complicate the amount of interactions, thereby decreasing the satisfaction and trust among members leading to lower performance(Zarzu 2011).Consequently, the team was formed of five members. The writer was a team leader, The ICU clinical instructor to conduct in-services and teaching lectures. Assistant head nurse who represent the management level and provide support for the project and the employees, one senior nurse and one junior nurse as a

Frontlines staff to form an effective link between the team and the staff nurse as the one who will use the handoff tool, therefore, their buy-in to the project is very important for change success. Furthermore, the nursing quality coordinator to facilitate the team works.

To achieve better communication, harmony and synergy during the project journey, it is necessary to understand the Belbin's team role theory and its contribution to the improvement project. Furthermore, clarifying the phases that the team tends to go through from the inception to successful completion of the project, Tuckmann's team development model which is still the most recognized model for the stages of the team development was considered, the writer found it highly important to explain and highlights the areas that may cause the team and the project progression to be affected or possibly fail. Through its five team development stages (Forming, Storming, Norming, Performing, Adjourning)(Wilson 2010), Tuckman's model explained to the team members by conducting a lecture, this explanation was an immediate post team selection, re-emphasized during the first meeting to make sure that all team members have expectations and imaginations that the team will normally go in different stages during the life cycle of the project.

Permission:

As Part of the project initiation and preparations and after completing the change initiative analysis, the permission to start the project was approved by the relevant party. The head of the quality improvement department, the cardiovascular intensive care unit head nurse and the heart institute program director that represents the nursing affairs management were provided with adequate information in the form of (idea for

improvement) and project proposal to enhance gaining the top management support which was an important step.

Initial resources:

Change efforts need to be adequately resourced to be successful (HSE 2008). For the handoff improvement process to be successful, sufficient resources need to be allocated at all stages of the project. Thus, the needed resources were considered from different views: the people needed were an implementing team as explained before and the staff who will implement the new tool beside the management key persons to support the change. The ICU conference room was utilized for the periodic team meetings. Financially, the change was simple and would have a significant effect (small change big impact), therefore, the cost was to print out the developed form with a fixed component to be filled in pencil and the nurse keeps updating the information during the time of patient stay in the unit.

Technological part is very important as well, each bed in the intensive care unit had its separate computer which contains all of the patient's database and relevant clinical information, so the unit is well equipped from this side, this is important as the nurse need to pull the patient relevant and most updated data and document it on the new handoff tool. However, the resources availability made the leader's expectations high for the alignment of the change to the actual resources provided in the unit; considering that the side of resources to support the change will be revisited at regular intervals during the change process for possible adjustment.

The ultimate vision was to improve the handoff process and to mitigate the incidents resulted from poor handoff communication practice, therefore, The team leader used the champions to communicate enthusiasm for the vision of using the handoff tool; however, the communication of the new change was through multiple channels such as educational sessions, wall posters, and verbal feedback from the nurses. Additionally the team agreed on the main steps toward the change project, such as preparing and framing the handoff tool, education and in- services, resource allocation and expected cost.

Despite the length of the initiation stage, the business case (project initiation document) has been explored and analyzed, the project gets approved by the appropriate management, and the end- stage conducted with the stakeholders to move forward to the planning stage.

3.3.2 Planning stage

The purpose of planning is to determine the specific details of the change and to create support for the change process, the focus is to build an organization-wide commitment, momentum and capacity for a change, increase participation and engagement in the change process, increased understanding of what the change is intended to accomplish and what it means personally for all involved (HSE 2008).

The key that change can be controlled is by developing a comprehensive change plan that takes best practice into account, lots of communication, clear assignment of responsibilities, management of stakeholders to overcome the resistance, training in new ways of working and so on (Balogun 2006).

Building commitment, communication of vision and business case for change:

The purpose of this part for the leader and the team is to engage with the staff in creating a shared vision and developing a more detailed picture of the future, it provides an opportunity to explore the relevance for staff of the business case developed at the end of the initiation stage.

Through conducting a lecture by the writer in the last week of December, the project aim was communicated to the staff nurses, the values of the change were detailed, and the expected outcomes of the change had been explained . However, to add more value from the change, and besides the explanation of the degree of urgency, the staff nurses reminded of their accountability during the current patient handoff process, the legal consequences that may result in case of a defective handoff process that may affect the employee job security simultaneously with the possible detrimental effects that will jeopardize the patients.

Furthermore, the description of future quality improvement changes was explained, the future change will be the conversion of the handoff tool to computer-based version, this conversion will be in -line with the patient Electronic Medical Record (EMR), this digital version will be the future state of the tool, further explanation was introduced that during the project timeline state, the possibility to modify and refine the tool is more applicable before moving to the system- build computerized version.

The explanation of the future plan added more value and positively affect the stakeholders toward mandating the necessity of supporting the current change.

Formulation of the handoff tool:

The writer reviewed the literature pertaining nursing handoff tools and had read the suggestive materials related to nursing handoff at the end of shift report; these materials

were published by different international organizations, such as the joint commission accreditation (JCIA), and institute of medicine (IOM). The conclusion was, despite the critical nature of handoff communication, there is no recommended standardized – handoff- form to use as the best evidence, but they all recommended having a standardized form to communicate through during patient handoff process. The form could be customized according to the unit specific and the system used within the organization.

Customizing the handoff form was based on two contributions, firstly, on the evidence based literature in the field of nursing handoff, as reviewed by the writer and shared with the rest of the team members. Secondly, by utilizing the experience and inputs of the team members whom working in the field, especially, the bedside nurses as a frontline people and the one who will utilize the form.

Therefore, the team formulated a handoff form based on the hospital policy ,the policy states that the ISBAR (introduction, Background, Assessment, Recommendations) communication model is to be used as a basis for all communication between healthcare providers. The use of this model is to provide all staff with a patient focused structure for ensuring effective communication during the handoff (e.g. shift change, transfer), as well as in urgent or critical situations.

The formulated form as shown in the appendix (C), comprised a single- sided page that is segregated to different segments of the most important parts needs to be filled by the nurse , and on the back of the form the date and time of the handoff occurrence accompanied by the nurses signature of both the sender and the receiver.

Increasing readiness and gaining commitment:

Organizational readiness for change is a multi level and a multi faceted construct, it can be more or less present at the individual, group, unit, department, or organizational level , it is the organizational members' change commitment and change efficacy to implement organizational change (Weiner 2009).

The leader should provide strong, visible and credible leadership style for the change. Transformational leadership is a style that is focused on change , those who use this style are regarded as change agents who use qualities such as charisma to motivate and engage their followers (Grimm 2010) .

The importance of this step is the dealing with resistance to change and the leader's ability to transform this resistance to commitment. Therefore, the change leader presented to the employees the new handoff tool and asked the staff nurse team members to present the form to the rest of the nurses by conducting a lecture and explaining the form in open questions and answers environment.

The unit nurses were encouraged to present the form, and the nurses who are cooperating in this matter will be the champions for the project, like this cooperation will facilitate the acceptance and tolerance of the new change. The head nurse promised the presenters and the champions to consider their participation during their annual appraisals and evaluations. Eventually, this ends up with another four volunteer nurses beside the two originally from the team members to present and respond to the staff questions regarding the new form.

Developing the implementation plan:

The purpose of this step is to undertake the design of the organizational, service and cultural changes that will enable the organization to achieve its vision and helps to prepare the organization for implementation (HSE 2008).

In this step, the project implementation strategy should be agreed upon and outlined; the people responsible for each action and the project time frame are specified as implementation details containing the sequence of actions needed for the next stage.

The team decided to develop an action plan to assign all the dimensions of the implementation stage as shown in table (1). To achieve the desired intention, the writer formulated a communication template to clarify the communication aspects during this stage.

Table 1: Project action plan

What /task	How	Who	When	Expected Outcomes
Raise staff awareness	Lectures /in-services	Team leader /unit clinical instructor	One month prior kickoff date / December 13	The staff awareness level increased about the value and importance of handoff
Develop standardized form	Evidence based searches /hospital policy /team consensus	Team members	November and December 2013	Develop standardized handoff form
Start using handoff form	Paper based ,one page form within patient chart	Unit nurses	Started 1 st of January	Improve handoff process
Couching and monitoring	Receive staff feedback/monitor compliance	Clinical instructor/assistant head nurse	Continuous	Full compliance /
Project evaluation	Incident reports /staff interview	Team leader / unit management	April 2014	Decrease number of handoff related incidents /increase staff satisfaction

3.3.3 Implementation Stage

The focus at this stage was to implement and monitor the project plan to ensure that it is meeting its purpose (HSE 2008). It is important to keep the change process on track within resources and in -line with the agreed vision for change. However, the planning stage details the aspects of change implementation, some aspects of change might be deviated due to unexpected events, this will be achieved by actively attend to what is happening in the organization as it is changing.

The writer and the team decided as mentioned in the planning stage to adopt and utilize the joint commission’s Center for transforming healthcare targeting solution tool (TST) to implement the change in this stage. The Center aims to solve healthcare’s most critical safety and quality problems, uses a proven and systematic approach to improve and solve these complex problems. The handoff form developed by the team will be used through SHARE tool kit to improve the quality of the handed off report.

The joint commission decided to share these proven effective solutions with more than 20000 healthcare organizations it accredits, as the writer’s organization is one of those hospitals, the decision was to utilize the tool.

Table 2: TST implementation steps

SHARE – Steps and Guidelines	Project -Team Interventions
<p>1-Standardize Critical Content</p> <ul style="list-style-type: none"> • Provide details of patient history and status when speaking with the receiver • Identify and stress key information and critical elements about a patient when talking to the receiver. • Synthesize patient information from disparate sources prior to passing it on to the receiver. 	<ul style="list-style-type: none"> •The nurse started the handoff process by synthesizing patient information (pre-handoff) • Providing details, stress key information and key elements by utilizing the handoff form • Key phrases were developed in the form, these key phrases customized to the CSICU patients’ handoff process.

<ul style="list-style-type: none"> • Develop and use key phrases to help standardize communications. 	
<p>2-Hardwire Within Your System</p> <ul style="list-style-type: none"> • Develop and use standardized forms, tools and methods, e.g. checklists, SBAR tool. • Establish a workspace or setting that is conducive for sharing information about a patient e.g. zone of silence. • Have a patient present during hand-off discussion between sender and receiver. • Identify new and existing technologies to assist in making the handoff successful and complete. 	<ul style="list-style-type: none"> • The team developed SBAR based handoff form • The workspace for handoff is the patient bedside as evidenced the best place for ICU endorsement. • Applicability depends on the patient’s cultural, educational, socioeconomically background. • All the nurses have access and using an EMR during handoff process
<p>3- Allow Opportunity to Ask Questions</p> <ul style="list-style-type: none"> • Use critical thinking skills when discussing a patient’s case • Expect to receive all key information about the patient from the sender • Collect sender’s information contact in case there are follow-up questions • Scrutinize and question the data 	<ul style="list-style-type: none"> • All the nurses are empowered by the management team to ask questions and clarifications regarding the patient’s condition. • All nurse contact information kept in the nursing station
<p>4-Reinforce Quality and Measurement</p> <ul style="list-style-type: none"> • Demonstrate leadership’s commitment to implement successful handoff • Utilize a sound measurement system to determine the real score in the real time • Hold staff managing patient’s care responsible • Monitor compliance by using a standardized form • Use data as the basis for systematic approach to improvement 	<ul style="list-style-type: none"> • Leadership committed to implementing the handoff form. • Staff signs that they receive full handoff according to the new form • Assistant head nurse monitoring the staff compliance through regular check during the management daily round. • Nursing handoff incident reports monitored quarterly
<p>5-Educate and coach</p> <ul style="list-style-type: none"> • Teach staff on what constitutes a successful handoff. • Standardize training on how to conduct a handoff • Engage staff, real time performance feedback, just in time training. • Make successful handoff an organizational priority and performance expectation. 	<ul style="list-style-type: none"> • Teaching conducted regularly by the clinical instructor • Staff engaged, two nurses as team members, all nurses hold accountable for their own handoff

The implementation started on the first day of 2014; the standardized form went live to use for all patients; the form saved on the main desktop in the nursing station, and it is saved in the unit shared folder to be permanently stored and for security purposes. So immediately post admission, the ward clerk will print out the form, stamp it with the patient information plate (patient biographical data and the bed number, the form will be handed to the primary nurse to start filling the form fields, the nurse will use a pencil for possible modification of fields information if the healthcare team decides to transfer the patient, the form will be kept in the patient's file.

Using Plan-Do-Check-Act (PDCA) tool to refine and improve the form was important, it is a method of continuous quality improvement, simple and understandable to solve the specific problem. The team agreed that, during the implementation, the staff encouraged to send feedback regarding the form; this was done via E-mail to the team leader for discussion with team members for revision and modification.

3.3.4 Mainstreaming Stage

In the final stage of the HSE change model, the purpose is to focus attention on the success of the change efforts, on integrating and sustaining the new way of working ,behaving and on mechanisms for evaluation and continuous improvement (HSE 2008). It was evidenced that certain factors such as management commitment, sustained attention from the right management and the right culture appear to be necessary to motivate and sustain implementation (Ovretveit 2002).

Acknowledge success and achievement:

At all stages, the HSE change model recommends the importance to celebrate success and the achievement of the desired changes, achievements celebration and awards will provide an opportunity for teams and services to present the work and spread innovation to other services. Employees need to receive feedback about their new level of involvement; measures of performance and reward structures must be developed to recognize the employees' participation activities (Raiborn & Payne 1996).

The project team celebrated the project success; the celebration took the form of recognition during the unit periodic meeting with the presence of the cardiovascular program director and the unit head nurse; the appreciation of the change team and unit champions staff that help in implementing the change was through distributing appreciation letters signed by the program director.

Support the integration of the change:

The need to support the participants once the programme is completed is vital (Andrews et al. 2010), people need support to embed the changes into their everyday activities and behaviours, however, the leadership support to the project was granted as previously mentioned.

Refine, learn and review :

Implementing a change process is a valuable opportunity to learn, the learning is a continuous process through all the change stages, reviewing lessons learned from the implementation stage and the whole change implementation is through reflecting the experience in reflection cycles submitted separately.

3.4 Conclusion

This project concerned with improving the handoff communication process on the cardiovascular intensive care unit. The focus was through standardizing the end of shift report handoff process by using the standardized handoff form during the patient's endorsement. To carry out the change, HSE model was utilised, and many quality improvement tools were considered in particular model stages. In the next chapter, the evaluation methods will be explained.

CHAPTER 4

Evaluation of the Change Project

4.1 Introduction

Evaluation is attributing value to an intervention by gathering reliable and valid information about it in a systematic way, and by making comparisons for the purposes of making more informed decisions or understanding causal mechanism's or general principles (Ovretveit 2005).

Ovretveit stated that both evaluators and users of evaluation need to know which type of evaluation could be used beside the advantages and limitations of each. The main purpose of gaining detailed insight into the experience of those exposed to the intervention is to revise the quality improvement intervention in question, this information on influencing factors can be used to improve the intervention during its application or afterward (Ovretveit 2002).

Managerial evaluations are made for managers to monitor or improve the performance of services, or to check that agreed changes or projects were implemented as intended, with a purpose to ensure accountability, value for money and performance improvement.

HSE change model emphasized the importance of supporting continuous evaluation at all stages of the change journey, this emphasis is to ensure that the change effort will be regularly reviewed, refined and refocused if required (HSE2008).

4.2 Evaluation Tools and Outcomes of the Change Project

Donabedian's three element model, Structure (the characteristics associated with a healthcare setting), Process (what is done in the healthcare setting), Outcomes (the ultimate status after interventions) is an advance modern for thinking about the measurement of quality in healthcare (Loeb 2004). SPO framework was utilized in this implementation project to evaluate the achievements and outcomes as depicted in figure (7). SPO framework is the basis of much work on quality improvement and is widely adopted in health quality improvements literature (Moss 1995). Furthermore, the components of a Donabedian's framework are interdependent in a linear manner and causal relationship showing that each dimension affects the next one either positively or negatively.

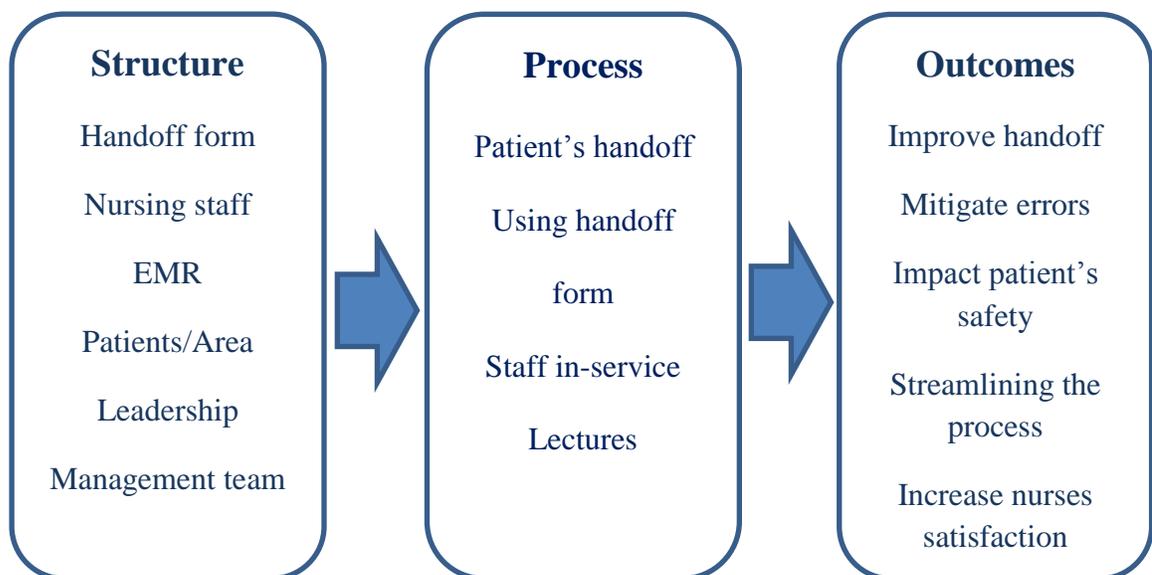


Figure 7: Project evaluation framework

Evaluation of the structure:

The structure dimension is denoting to the setting where the care is given and what is needed to deliver the care (Donabedian 1988). In health care, the setting is multi-faceted, that includes and not limited to human resources, care areas, materials, as well as organizational policies and guidelines. However, the framework emphasizing that well designed setting will promote high quality care if utilized appropriately.

The handoff improvement project was initiated by the team; the team searched the best evidences for standardizing the nursing handoff process at the end of shift report; the standardization was achieved after the team consensus was made to develop a form. The leadership support and the availability of computers to navigate the EMR to retrieve patient information and details during the handoff made the structural aspect of the framework well designed and permit the opportunity for achieving the outcomes.

Evaluation of the process:

Process is the second dimension of SPO framework; it describes the activities conducted to implement the change, process refers to what takes place during the change project allowing to reach the outcomes. Process evaluation is an important tool that can meticulously describe the quality improvement intervention, the experience to this intervention, and the experience of the participants (Hulscher et al. 2003).

In this improvement project, the process was started with the analysis of the current situation regarding the handoff practice in the intensive care unit, the team formation and the formulation of handoff form. Furthermore, the handoff form was introduced to the staff via lectures and in-services by the team members and the unit project champions. Lectures regarding the form and its benefits were conducted twice per

week, one for day shift nurses and the other for the night shift nurses. The lectures were conducted in the unit meeting room and at the bedside, especially during night time considering the nature of patients' demands in the intensive care unit.

Evaluation of the Outcomes:

Outcomes are considered as the differences between the before and after data collected about the target (Ovretveit 2002). Based on the SPO framework, good structure and appropriate process will increase the likelihood of desirable outcomes. The outcomes of standardizing the handoff can take many facets: firstly, mitigating the errors that may result from the omission of important patient information during the handoff process and affect the patient safety, this outcome measured by monitoring the handoff communication reported incidents, Secondly, increasing the staff satisfaction post handoff through receiving a full and comprehensive report about the patient, receiving full information about the patient will result in improving the staff morale, empower the new staff and strengthen the team relationship. Thirdly, decreasing the handoff report time resulted from streamlining the handoff process.

In order to conduct the handoff improvement project outcomes evaluation, quantitative and qualitative evaluation methods used.

Quantitative Outcomes:

To quantitatively evaluate the outcomes of the project; the incidents reported through the safety reporting system (SRS) during the period of the first quarter 2014 were analyzed. Generally, Patient safety incidents were defined by the UK National Patient Safety Agency (NPSA) as "incidents that could have or did affect the safety of one or more patients receiving care" (Thomas & Taylor 2012). This implied that facilitating

incident reporting is an important step toward improving the patient safety (Lopez et al. 2012). However, the writer's organization utilizing an electronic safety reporting system, the system is an easy access program allowing to report anonymously for any type of incidents. When an incident occurs, the quality management department will conduct a report analysis to learn the most from what happened and to understand error trends across sites and over the time.

The reported incidents were filtered to match the following criteria: incidents occurred in CSICU area, incidents pertaining handoff communication subject, meaning that handoff communication was a contributing factor which had been selected during incidents data entry. After setting the incident's search criteria, the number of incidents was compared to the total number of incidents during the same period of time to find out the percentage of handoff communication incidents in relative to the total number of reported incidents in CSICU.

The writer's organization is adopting the 'Just Culture' philosophy; this philosophy aims to empower the staff and encourage incidents reporting, the idea is to encourage reporting in a non-punitive media of work, encouraging reporting will result in guiding the organization's leaders and improvement teams to invest their efforts in the problem prone areas and to learn from mistakes for particular preventive measures.

The bar chart showed that the percentage of handoff related incidents decreased from 33% the last quarter 2013 to 22 % in the first quarter 2014. however, the reported handoff communication incidents were not including the end of shift reports only, it involved other occasions of possible handoff during nursing shift such as: morning breaks, lunch break coverage handoff.

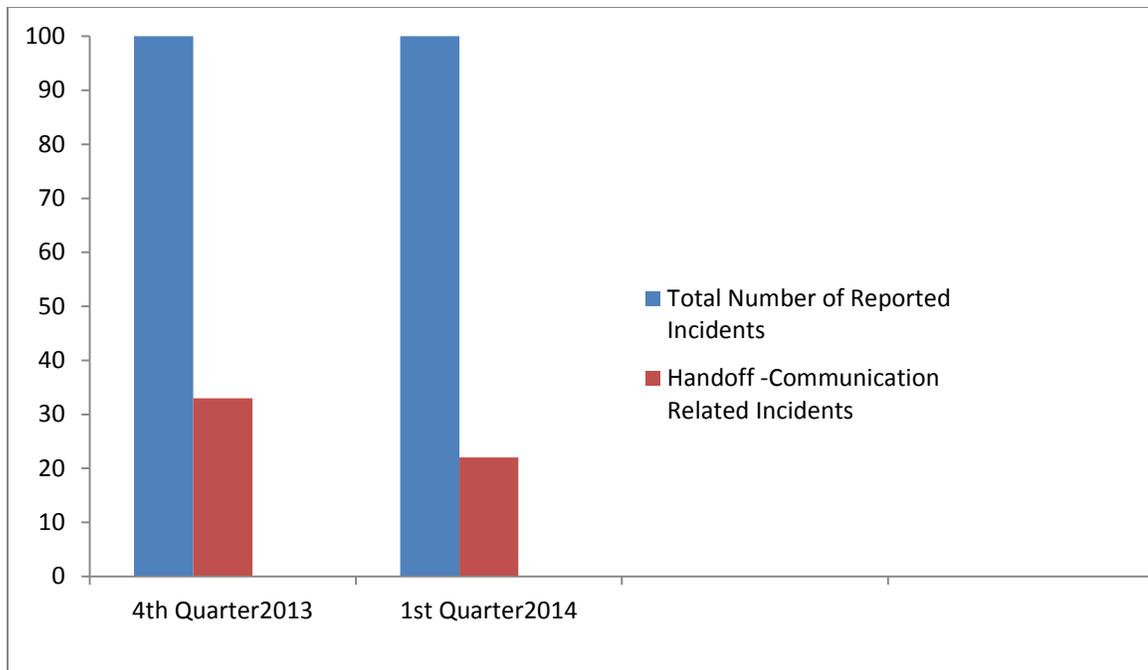


Figure 8. Handoff communication- incidents reports- percentages comparison

Qualitative outcomes:

To evaluate the nurses' satisfaction post project implementation, the focus group interview method was used. The advantage of an interview with a group rather than with individuals is the ability to gain a range of views more quickly and with fewer resources than a series of interviews (overtveit2005). The focus group technique is one form of the group interview where the facilitator /leader leads the group of people in a discussion of a particular topic, furthermore, the focus group method has been increasingly used in healthcare research in a variety of settings (Rabiee 2007). However, the writer and the assistant head nurse had set a schedule for frequent focus group interviews, to meet with the staff nurses in the CSICU meeting room, the time limit was allocated to be 45 minutes to one hour, in a weekly basis, for three consecutive sessions in the first three

weeks of April, this selection was to ensure that enough time was permitted for new handoff form practice, the aim was to obtain in depth knowledge concerning the nurses perceptions, beliefs and opinions of the new handoff form in order to measure their satisfaction.

The nurses were guided to discuss in three elements during the interview: the positive feedback from the change, negative aspect and suggestions for future improvements. In each interview session, the focus was to involve a mixture of senior and junior nurses, as well as both male and female nurses.

From these interviews, positive comments were marked as follows:

‘The change of shift report I receive prepares me to plan my patient’s care’

‘The new form highlights the most important fields pertains my patient’s care’

‘My signature on the form makes me more accountable for my words’

‘For us, as new nurses, the form makes it easy to handoff the patient and gives us chance to learn more’

‘During giving the report , the form will guide me and organize my way of handoff the patient ‘

Conversely, some nurses concerned that the form was consuming more time for its preparation, and they considered it as double charting because the whole patient information stored in an electronic database. For future improvements suggestions, some nurses' comments to change the form from paper base to electronic phase, considering that the whole handoff process will be a paperless process, and to link the form to an automated software that can pull the patients most recent and updated information.

In general, the quantitative feedback was positive; such a feedback encourages utilizing the form core idea which based on the SBAR communication model to be used in any possible handoff process, such as during the nurses break time or patients transfer to other units.

Streamlining the hanoff process for nursing shift report is important , on the other hand , the time required for the shif report is varied from patient to patient , it depends on the patient's condition and the amount of healthcare interventions that the patient received in specific shift , however , streamlining the handoff process will add value to the process and organize the way of endorsement as mentioned by the nurses comments post focus group interview .

4.3 Conclusion

The project evaluation was explored by using Donabedian's framework; the framework was analyzed through its three elements: structure, process, and outcomes .The structural aspect showed the unit's ability to tolerate the change; likewise, the process aspect represents the efforts during the planning and the implementation stages.

Most importantly, the outcome aspect showed positive change results represents by decreasing the number of handoff related incident reports, and impacted by the positive comments from the nursing staff as seen in the quantitative and qualitative represented data. However , the next chapter will discuss the evaluation results and the conclusion will be provided.

CHAPTER 5

DISCUSSION

5.1 Introduction

The aim of this organizational development project was to improve the handoff communication among the nurses in the cardiovascular intensive care unit, achieving the improvement was through the introduction of a standardized handoff tool (form) during the end of shift report. The original motive for this project was the occurrence of adverse incidents that results from incomplete handoff, and the possibility to jeopardize the patient safety as poor handoff communication compromises the quality of care and affect the desired outcomes.

The literature review revealed that Ineffective handoff communication may lead to detrimental consequences. Evidence indicates that ineffective handoff can lead to incorrect patient treatment, delays in diagnosis and treatment, unnecessary tests and treatments, increase the length of stay, patient complaints and malpractice claims(Manser & Foster 2011).Additionally, the data obtained by the Joint Commission in their review of reported sentinel events indicated that communication was the root cause of 65% to 70% of sentinel events.

To enhance the change, this OD project was carried out by using the HSE change model through its four stages: initiation, planning, implementation, and mainstreaming. The HSE model allowed a thorough assessment of the organizational culture and the readiness for the change; it introduced for a baseline understanding of the current state

regarding the unit handoff process and guided the improvement team through its different stages. This chapter will discuss the findings from the project and the writer's experience of introducing the change, however, the discussion will be in relates to the literature reviewed in chapter two, furthermore, this chapter will discuss the change impact on the organization, contribution to practice, strengths and limitations, recommendations for future improvements. Finally, the conclusion will be offered.

5.2 The impact of the OD project

As noted in the comparison results of the handoff related incidents in chapter four, the incidents percentage decreased from 33% to 22% post project implementation , even though there was a declining of the reported incidents compared to the baseline, the focus of this project was on the handoff that occurs at the end of shift report time .For nurses, end of shift report is the most critical time for patient's information exchange ,however, there are still another occasions where the patient information can be exchanged.Hence, the reduction of incidents could be considered a positive outcome, this outcome matching the intended objective to reduce the number of handoff related incidents, similar to Chung et al.(2011) ,using evidence –based shift report tool to improve nurses' communication, the initiative outcomes showed decreased frequency of missed information .Therefore, adverse events can be reduced if a complete and accurate information of the patient's condition, care, and response to care are available to all health care members through informative and meaningful communication (Jefferies et al. 2012).

The qualitative results from the focus group interviews showed a positive effect post using the handoff form, these results were reflected by the staff comments denoted

to a positive impact on the staff satisfaction .Standardizing the handoff process provide a better way to plan the patient care , this was evident as nurses use the shift report information to make decisions and to build up the patient's care plan(Chung et al. 2011).Additionally, the new nurses commented that, the new form gave them a chance to handoff the patient smoothly ; the organized form guided them how to start and how to complete the handoff process , increasing the chance for education during the handoff process. Considering that handoff provides a venue for education, professional development and emotional support(Blaz & Staggers 2012).

Organizational wide, the project improved the communication environment in the unit, this improvement represented through raising the awareness about the handoff process among the nurses, and having a written communication tool during the handoff process. Furthermore, the upper management considered the project as a starting point to be implemented in the other units and different services in order be compliant with the JCIA requirements as an accredited hospital. Likewise, the project had an impact on the organizational culture, this impact had been started since the initiation stage, when the implemented team started to conduct the lectures about the handoff communication, enhancing the change and involving the employees.In this, the leader and team have learned how to assess, prepare, implement and evaluate the project while gaining the knowledge and the skills for future improvement projects implementation.

5.3 Strengths, Limitations and Recommendations

The strengths of this OD project is derived from its focus on the handoff communication as a central topic in the healthcare, the project was aiming to improve the handoff process among nurses at the end of shift report. Through conducting lectures and regular in-services, the project raises the staff awareness regarding this important issue. Furthermore, the staff involvement and engagement improved the staff satisfaction and had been offered a chance for learning and empowering the new employees. The upper management commitment to the project created a culture of continuous efforts to improve the communication during the patient's care transfer and impact the employee's accountability. The standardization during the handoff process and the utilizing of a communication tool like the SBAR model encourage the model utilization in another areas and services in the organization. The project required minimal resources, minimal cost and no additional staff recruitment required. The project impacted the hospital cost saving, for example, minimizing tests repetition and better communication of the patient healthcare plan resulted in optimizing the continuity of care offered.

In contrast, the project limitations represented that the formulated form needs more time for filling and updating each shift. Additionally, the unit is mixed age group patients, this mixing might require more age group specifications to be addressed in the form for a comprehensive data exchange, this aspect needs to be considered for possible form modifications. Furthermore, the project evaluation time was another limitation, the evaluation was conducted directly after three months implementation period, however, the writer think that more time was needed.

However the communication in healthcare is diverse and complicated, this project aimed to improve the communication in one service at one time, opening a window to standardize the handoff in the other services and to raise the awareness of the other healthcare teams .The standardized nursing form needs to be computerized in order to promote a green environment and automate the entire nursing charting, this premise was discussed with the information technology system (ITA)section and it seems applicable in the future .furthermore , the form is under periodic revision and continuous adjustment to optimize the content and customize the form elements, this predicted to be a continuous cycle of improvement.

5.4 Conclusion

Effective communication among healthcare providers is imperative to ensure patient safety and deliver high quality of care .The aim of the project was to improve the nursing handoff communication during the shift change report .The literature review indicated the importance of standerdizing the handoff process ,furthermore the joint commission recommending using a standerdized handoff method during patient's endorsement process .Therefore , a handoff form –SBAR based – was formulated for this purpose , introduced to the staff through conducting lectures and inservices to raise the employees awareness and create the urgency for change.

The change process was initiated utilizing the HSE change model , the model ,through its stages and different steps guided the improvement team to overcome the resistance and to buy-in the stakeholders commitment for the change success .The project resulted in decreasing the number of handoff related incidents , this achieved by decreasing the percentage of incidents occurance from 33% to 22% .

The project was improving the nurses satisfaction post handoff process ,it streamlined the process and guided the nurses to optimize the handoff process ,the nurses satisfaction was accompanied by a level of accountability to deliver a full messege when it comes to patients and their safety.

Similar improvment projects are expected to be conducted , the writer wishes if he will be able to spread the idea of standerdization ,and to perform a bigger project to cover all the units and include all the services.

“ Only a life lived in the service to others is worth living ”

Albert Einstein.

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APPENDIX A

Improving Handoff Project: Gantt chart

Project Steps	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May
Assess current situation								
Brainstorming								
Action plan & Recommendations								
Implementation								
Monitoring process								
Data Analysis								
Final report								

APPENDIX B

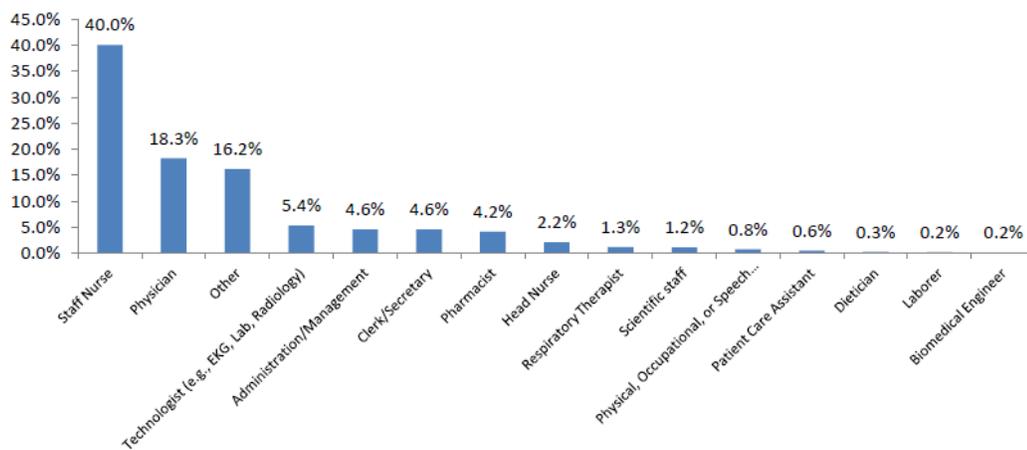


Chart 3.2. Distribution of Respondents by Staff Position

APPENDIX C

CSICU - SBAR Shift Report

SITUATION	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">Blue Plate/ MRN</div>	Date: _____ Time: _____ Room# _____ MD _____ Diagnosis/Surgery _____ Isolation Required: <input type="checkbox"/> Yes <input type="checkbox"/> No Type: _____
BACKGROUND	Chief complaints /History:	
ASSESSMENT	<p style="text-align: center;">Vital Signs</p> Temp. _____ Pulse Rate/Rhythm _____ / _____ Resp: _____ O2 Sat. _____ RA/O2 _____ B/P _____ Other _____	<p style="text-align: center;">Interventions</p> <p>Labs: <input type="checkbox"/> CBC, <input type="checkbox"/> Chemistry, <input type="checkbox"/> Coagulation, <input type="checkbox"/> UA, <input type="checkbox"/> Other:</p> Abnormal/Pertinent Results: _____ <p>Radiology: X-Ray, CT, U/s, Echo Abnormal/Pertinent Results: _____</p> <p>Tubes: Foley Size _____ NGT Size _____ Chest Tube: <input type="checkbox"/> R <input type="checkbox"/> L Air Leak Crepitus Drainage Color _____</p> <p style="text-align: center;">Input & Output</p> Admission IV Fluid: _____ IV Location/Size: 1. _____ / _____ 2. _____ / _____ Input: Oral _____ cc's IV _____ cc's Other: _____ cc's Output: Urine _____ cc's Emesis _____ cc's NGT _____ cc's CT Drainage _____ cc's Other: _____ cc's <p style="text-align: center;">Social Assessment</p> Activity: <input type="checkbox"/> Independent <input type="checkbox"/> With Assistance <input type="checkbox"/> Dependant Pt lives: <input type="checkbox"/> W/ Family <input type="checkbox"/> Alone <input type="checkbox"/> Caregiver Deficits: <input type="checkbox"/> Deaf/HOH <input type="checkbox"/> Blind/Vision Impaired <input type="checkbox"/> Other: Nursing Swallow Evaluation: <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> N/A <input type="checkbox"/> Not done Comment: Feeding status: <input type="checkbox"/> Oral <input type="checkbox"/> NGT <input type="checkbox"/> NPO <input type="checkbox"/> Other Comments: Patient /Family Education:
ASSESSMENT	<p style="text-align: center;">Physical Assessment</p> <p>Neuro: <input type="checkbox"/> A/O x4 <input type="checkbox"/> Alert <input type="checkbox"/> Awake <input type="checkbox"/> ↓ LOC <input type="checkbox"/> Lethargic <input type="checkbox"/> Comatose <input type="checkbox"/> Fluctuating <input type="checkbox"/> Agitated <input type="checkbox"/> Confused <input type="checkbox"/> Combative <input type="checkbox"/> Other: COMMENTS:</p> <p>Cardiovascular: <input type="checkbox"/> pulses <input type="checkbox"/> BP <input type="checkbox"/> Rhythm <input type="checkbox"/> Edema <input type="checkbox"/> Pacer COMMENTS:</p> <p>Respiratory: <input type="checkbox"/> Unlabored <input type="checkbox"/> Labored <input type="checkbox"/> Tachypneic <input type="checkbox"/> Clear <input type="checkbox"/> Wheezes <input type="checkbox"/> Rhonchi <input type="checkbox"/> Diminished <input type="checkbox"/> Other: COMMENTS:</p> <p>GI/GU: BS <input type="checkbox"/> Present <input type="checkbox"/> Hypoactive <input type="checkbox"/> Hyperactive <input type="checkbox"/> Abd. Distended <input type="checkbox"/> Urine output <input type="checkbox"/> Other Comments:</p> <p>Integumentary: <input type="checkbox"/> Skin <input type="radio"/> Intact <input type="radio"/> Breakdown <input type="checkbox"/> Color WNL <input type="checkbox"/> Cap Refill < 3 sec <input type="checkbox"/> Other: Comments:</p> <p>MS: <input type="checkbox"/> No deficits <input type="checkbox"/> Contracted <input type="checkbox"/> Cachectic <input type="checkbox"/> Amputation _____ <input type="checkbox"/> Other: Comments:</p> <p style="text-align: center;">Pain Management</p> Pain level before meds: _____ /10 Pain level now: _____ /10 Location of Pain: _____ Pain Medication: _____ Last Dose Given At: _____ Pain Goal: _____	
RECOMMENDATION	<p>Medications (check E-MAR)</p> Comments: _____	
RECOMMENDATION	Restraints <input type="checkbox"/> Yes <input type="checkbox"/> No Precautions: Care Issues: Special Equipment Needed:	Goals/ Things to watch-out for: Labs or Medications to be done soon:

Name/ Signature/ID		
Outgoing RN Completing Report: _____	Date:	Time:
Incoming RN Receiving patient:		

Name/ Signature/ID		
Outgoing RN Completing Report: _____	Date:	Time:
Incoming RN Receiving patient:		

Name/ Signature/ID		
Outgoing RN Completing Report: _____	Date:	Time:
Incoming RN Receiving patient:		

Name/ Signature/ID		
Outgoing RN Completing Report: _____	Date:	Time:
Incoming RN Receiving patient:		

Name/ Signature/ID		
Outgoing RN Completing Report: _____	Date:	Time:
Incoming RN Receiving patient:		

Name/ Signature/ID		
Outgoing RN Completing Report: _____	Date:	Time:
Incoming RN Receiving patient:		

Name/ Signature/ID		
Outgoing RN Completing Report: _____	Date:	Time:
Incoming RN Receiving patient:		