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A Discourse Analysis of Nursing Handoffs: Exploring Nurse-to-nurse Interactions in Two Hospitals in Saudi Arabia

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A Discourse Analysis of Nursing Handoffs: Exploring Nurse-to-nurse Interactions in Two Hospitals in Saudi Arabia

By

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DEDICATION

To my Guardian,

Allah.

وَلَسَوْفَ يُعْطِيكَ رَبُّكَ فَتَرْضَىٰ

"And soon will thy Guardian-Lord give thee (that wherewith) thou shalt be well-pleased."

Ad Dhuha 5

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ABSTRACT

A new realm of discourse research has started examining medical interactions in the *crowded space* – hospitals (Iedema, 2007). Beyond clinical settings and dyadic doctor-patient interactions, scholars have begun investigating doctors' interactions in various hospital settings including Emergency Rooms and hospitals' wards (e.g., Eggins & Slade, 2012; Slade & Eggins, 2016; Slade et al., 2015). Other investigations have expanded this scope of discourse research to include other health professionals, such as nurses (e.g., Staples, 2015). Drawing on discourse analytic approaches (Critical Discourse Analysis, Halliday's Systemic Functional Grammar, and Interactional Sociolinguistics), this study examined nurse-to-nurse handoff interactions in two hospitals in Saudi Arabia. Nursing handoff – the transfer of patient information, professional responsibility, and accountability between departing and incoming nursing teams (Manser et al., 2010; Riesenberg et al., 2010; Slade & Eggins, 2016; Wood et al., 2014) – is a critical communicative practice which ensures the continuity and quality of care provided to hospitalized patients. The aim ofthis study was to provide detailed analyses of the language used in this type of nursing discourse and its impact on the quality of handoffs. The data included 80 nursing handoff interactions, which were observed and audio-recorded in 7 different wards at two sectors (National Guard Hospital and King Fahad General Hospital) in Saudi Arabia including: Intensive Care Units, General-Adult, General-Pediatric, Oncology-Pediatric, Oncology-Palliative, ENT, Urology and Surgical wards. The nurse participants come from various cultural backgrounds including Philippines, Indonesia, India, Malaysia, Morocco, South Africa, Egypt, Jordan, and Saudi Arabia. The analyses provided a detailed description of this type of nursing discourse including the discourse

pragmatic features (i.e., linguistic, interactional, and interpersonal features) which nurses use while delivering and receiving patient information. In addition, the findings provide insights into the various discourse features that contributed either positively (e.g., using discourse markers, presenting complete thoughts, presenting sufficient detailed patient information) or negatively (e.g., producing questions instead of statements, shifting verb tenses, focusing on one patient issue as opposed to providing detailed patient information report) to the nursing handoff practices in this setting. The findings also point to the vital role that head nurses play in this nursing discourse and its impact on enhancing the quality of nursing handoffs. Additionally, a six-stage nursing handoff model was developed from the data, which could be used for nursing training in the National Guard Hospital and its branches in Saudi Arabia. Finally, the findings provide further support for Eggins and Slade's (2012) claim that communicatively effective handovers are achieved interactionally and with the collaboration of both departing and incoming teams. Furthermore, the use of standardized protocols (like SBAR) alone proved to be insufficient in guaranteeing effective nursing handoff.

CHAPTER ONE:

INTRODUCTION

The *linguistic turn* (Alvesson & Karreman, 2000), also known as the *turn to discourse* (Iedema et al., 2004), in social science research has had its impact on various disciplines including organization and healthcare (Alvesson & Karreman, 2000; Grant & Iedema, 2005; Grant et al., 2001; Iedema & Wodak, 1999). Not surprisingly, contemporary organizational studies have increasingly foregrounded *discourse* as "a theoretical device signaling a break with not just analytical methods of the culture researchers, but also with traditional organization and management theory more generally" (Grant & Iedema, 2005, p.40). In another sense, this recent keen interest in communicative interaction and *discourse* has represented scholars' dissatisfaction with the 1960s and 1970's cultural perspective of organizations which underestimated the role of *discourse* in organizations (Grant & Iedema, 2005).

The *turn to discourse* has established the interest in *discourse* in organizational and healthcare settings leading to hundreds of publications in the field and to the appearance of a series of biennial international conferences on organizational discourse both in the United States and in Europe (Grant et al., 2001). Henceforth, more recent investigations in organizational and healthcare settings have started to focus on language and discourse as the essence of these organizations. In other words, these healthcare institutions are constituted in discourse. Consequently, day-to-day communicative interactions in healthcare settings continue to introduce tremendous opportunities for research.

In what follows I provide an overview of *nursing handoff*- the focus of this dissertation- and the major studies that have been conducted on nursing handoff in healthcare settings. The primary purpose of this section is to familiarize the reader with this type of healthcare interaction, its definition, functions, methods, settings, and the major findings of the studies that have been conducted on nursing handoff.

Nursing Handoff: An Overview

Definition and Functions

Hospitals hold myriad of complex communication and interaction in which teams (medical, nursing, surgeons, health care professions, and the like) interact in a range of settings. *Nursing handoffs* (also commonly known as 'nursing handovers,' 'nursing endorsements,' 'sign out' and 'shift reports') represent one of the dynamic, complex, and pivotal communicative practices that take place in hospital settings.

Patient handoffs, in general, are one of many front-stage, *mono-disciplinary* (that is, doctors only, nurses only, etc.) or *multi-disciplinary* (that is, doctors-nurses, nurses-doctors, etc.) meetings which take place in hospital settings. The term, *handoff*, which is prevalent in literature (henceforth, I use *handoff* and *handover* interchangeably), is commonly used as an umbrella to cover numerous handoff situations. According to Watson et al. (2015), 1.6 million patient handoffs occur per year in the United Sates, and around 7,068,000 handoffs occur per year in Australia (see Watson et al., 2015). In a general sense, the process of handoff refers to the transfer of "primary authority and responsibility for providing clinical care to a patient from one departing caregiver to one oncoming caregiver" (Patterson et al., 2010, p. 2). Caregivers, as explained by Patterson et al. (2010), include attending physicians, resident physicians, physician assistances, nurse practitioners, registered nurses, licensed practitioner nurses, health staff, and the like. Hence, handover events can be carried out either

between caregivers who are at equal or comparable levels of experience, proficiency, and hierarchy; at diverse levels of the same professions (that is, physician-to-physician, nurse-to-nurse, etc.); and across professions (that is, physician-to-nurse, etc.). Also, they can be carried out between unit-to-unit (e.g., ward to surgery or vice versa), facility-to-facility (e.g., hospital to hospital), and between various allied health professionals (see Streeter at al., 2015; Slade et al., 2008; Slade et al., 2015). The focus of this study is on the nursing handoff, specifically the nurse-to-nurse handoff.

Iedema et al. (2004) differentiated between *medical/clinical meetings*, which are frequently carried out by doctors, and *nursing meetings*, which are typically carried out by nurses. As the authors explain, *medical/clinical meetings* are often profession-centered (that is, the focus is on professional rather than organizational issues), non-positional (that is, not concerned with office rules), and "comparatively relaxed, informal, and at times quite tense or even conflictual" (Iedema et al., 2004, p.11). On the other hand, *nursing meetings* tend to be "formal, hierarchical and positional and are both profession and organization centered" (Iedema et al., 2004, p.11). Thus, nurses are under pressure to perform their practices within the hierarchy of their discipline (e.g., head nurse vs. staff nurse) (Iedema, 2007; Iedema et al., 2004; Slade et al., 2015). Therefore, nursing handovers represent an interesting topic of investigation not only because of their nature as a formal, hierarchical, professional, and organizational communication practice but also because of the implications related to healthcare practices.

Although the definition of nursing handoff has been subject to deliberation, its basic organizational function centers on transferring information (about patient care), professional responsibility, and accountability between the departing and the oncoming nurses (individually or in teams) at shifts change (Riesenberg et al., 2010; Manser et al., 2010; Segall et al., 2012; Wood et al., 2014). This kind of activity occurs whenever departing

nurses hand over their responsibility for patients' care to other oncoming nursing teams (Smeulers et al., 2014). Besides this organizational function, some scholars (e.g., Buus, 2006; Staggers & Blaz, 2013; Wiltshire & Parker, 1996) refer to other implicit functions of handovers. These functions include: *social and emotional* (that is, handoffs serve as channels for nurses to confirm the solidarity of their team and to manage "their emotions in order to act appropriately towards patient") (Buus, 2006, p.1080); *educational* (that is, handoffs serve as instructional opportunities for new trainees and to socialize new nurses) (Kerr, 2002; Lally, 1999); *group cohesion and values* (that is, during handovers nurses establish and share their group values) (Lally, 1999); and *power and prowess* functions (that is, nurses get the chance to demonstrate their clinical expertise) (Staggers & Blaz, 2013). These functions were identified mostly via observations of handover interactions in various settings, including US hospitals (e.g., Staggers & Jennings, 2009) and UK hospitals (e.g., Kerr, 2002; Lally, 1999; Payne et al., 2000).

Methods and Settings

Literature on nursing handoffs (e.g., Kerr, 2002; Riesenberg et al., 2010; Smeulers et al., 2014; Staggers & Blaz, 2013) has uncovered various handoff methods including: (1) verbal (also commonly known as face-to-face handoffs), which is most common and usually take place in ward-corridors, bedsides, or in nurses' meeting rooms; (2) written, which is less common than verbal handovers, but considered by some (e.g., Reiley , 1989) to be a valuable approach, in that it could be prepared by nurses prior to handover time; (3) phoned, in which handovers are carried out by phone (Staggers & Blaz, 2013); and (4) taped, which has recently appeared as a new method of handover in which departing nurses record handovers for the oncoming team to listen to (Kerr, 2002; Patterson et al. 2004; Smeulers et al., 2014). All handover methods share a central goal which is "to provide accurate and timely information about the patient, including treatment, services, current condition, and recent or

anticipated changes" (Streeter et al., 2015). As stated by Staggers and Blaz (2013), "no one handoff method [has yet] emerged as more effective and efficient" (p. 257) due to the differences in contexts, patients, and nurses.

It is commonly known that nursing handoffs occur multiple times a day (on average of three times a day per patient). They also occur in various settings as nurses provide and coordinate more than 80% of patient care (Keenan et al., 2008). These settings include, but are not limited to; 1) *hospital units*: the handover occurs when patients get transferred from one unit to another (e.g., McFetridge et al., 2007); 2) *patient's bedside*: the handover occurs in the form of face-to-face interaction and in which patients are encouraged to participate; and 3) *ward-corridors or nursing offices*: the handover occurs when nurses' shift changes while patients are admitted in hospital's wards (Streeter et al., 2015). Again, none of these handover styles have been found to be more or less effective because of numerous differences in contextual variables (Staggers & Blaz, 2013).

In all these cases, and as Apker et al. (2010) puts it, this *time-honoured event* (Staggers & Blaz, 2013) works as "the 'glue' that holds the healthcare continuum together because patients have numerous caregivers during hospital admission, treatment, and discharge" (Apker et al., 2010, p. 161). Hence, the nursing handoff is a communicative practice that goes beyond being a simple practice of information transfer as it offers nurses with opportunities to share and discuss patients' information, diagnoses, treatments, needs, and so forth, which eventually guarantee the continuity of care and safety. Therefore, any inaccuracy or delays of handoffs may lead to *adverse events* – critical incidents which lead to avoidable patient harm (Slade et al., 2008; Smeulers et al., 2014; Watson et al., 2015), including errors, inappropriate treatments, false diagnoses, inadvertence of care, redundancy of medical works (that is, unnecessary repetition of blood tests and other examinations), etc., which may cause patients and health care providers' dissatisfaction, increase of costs, and

increase of patients stay in hospitals (Patterson, 2010; Slade et al., 2008; Smeulers et al., 2014; Staggers & Blaz, 2013).

Standardized Handoffs

Research on the nursing handoff has identified various factors which may impact the effectiveness of handoff interactions. These factors include, but are not limited to, hierarchical or ward management structures (e.g., lack of supportive teamwork, respect, etc.) (Streeter et al., 2015); nurses' personal tensions and cultural differences; physical and environmental restraints (such as noise, continuous interruptions, etc.) (Riesenberg et al., 2010); ineffective methods of communication; lost or forgotten information; the use of confusing language or jargon (Streeter et al., 2015); and many other factors that contribute not only to the complexity of this communicative interaction, but also to its vulnerability to errors and miscommunication (Manians & Street, 2000; Riesenberg et al., 2010; Watson et al., 2015).

With all the available investigations on handovers, the call for new interventions to enhance handovers has increased (Riesenberg et al., 2010; Smeulers et al., 2014; Wood et al., 2014). The World Health Organization's report (WHO, 2007) suggested the standardization of handoffs as a possible solution to improve its quality. Although both World Health Organization (WHO) and The Joint Commission (TJC) did not clearly specify how handovers are to be done, they listed some basic requirements for *standardized handoff*. For example, TJC considered five basic expectations for effective handoffs: (1) the process of handoff needs to include interactive communications, which allow the exchange of questions between the departing and oncoming teams; (2) the communication needs to include up-to-date information about patients' cares; (3) the communication needs to include a process for verification of the received information (e.g., repeat-back or read-back, etc.); (4) the

communication needs to include opportunities for the oncoming team to review relevant patient historical data (e.g., previous care, treatment, services, etc.); (5) to guarantee effective communication, interruptions during handovers need to be controlled in order to minimize information loss (Source: Joint Commission on Accreditation of Healthcare Organizations, 2007; Arora et al., 2005). These suggested expectations have informed several standardized approaches to handoffs. Some of these approaches are outlined in Table 1 (Source: Joint Commission on Accreditation of Healthcare Organizations, 2007; WHO, 2007).

The World Health Organization (WHO) (2007) proposed ***SBAR*** (Situation, Background, Assessment, Recommendation) as an effective communication tool which helps to improve the quality of handovers. According to WHO, the SBAR model involves first clarifying the problem, then giving pertinent background information, followed by an assessment of the situation, and a recommendation (WHO, 2007). This model of handover has become prominent in clinical, nursing, medical, and patient safety literature, especially in the US (Leonard et al., 2011; Sandlin, 2007; Staggers & Blaz, 2013; WHO, 2007). As stated by Leonard et al. (2011), SBAR formulates "an effective tool that provides a common predictable structure to the communication" (Leonard et al., 2011, p. 86). This shared mental knowledge between the departing and oncoming teams paves the way to the process of decision making between team members and allows for a quick prediction and response to the information. Below is a clinical example that follows the SBAR model (source: Leonard et al., 2011):

Situation (S): "Dr. Preston, I'm calling about Mr. Lakewood, who's having trouble breathing."

Background (B): "He's a 54 year old man with chronic lung disease who has been sliding downhill, and now he's acutely worse."

Assessment (A): I don't hear any breath sounds in his right chest.

I think he has a pneumothorax."

Recommendation (R): "I need you to see him right now. I think he needs a chest tube" (p.86).

The above example demonstrates how the structure of SBAR helps the person who initiated the talk to construct a well-developed case, starting from identifying what is going on with the patient, his/her clinical background, his/her current problem, and finally, his assessment of this patient's problem. However, the SBAR structure was originally developed as a communicative tool across professions (that is, physician-to-nurse handoffs) to report patient care; consequently, it has been suggested that its format needs to be revised to fit nursing handoffs (that is, nurse-to-nurse handoffs) (Staggers & Blaz, 2013). However, no investigations have been done to examine the efficiency of SBAR's protocol for nursing handoffs (Riesenberg et al., 2010; Staggers & Blaz, 2013)

Table 1

Standardized Approaches to Handover Communications

Handover Approach	Components of Approach
SBAR	Situation (identify yourself, the patient, why is the patient here) Background (history, lab findings, test results, medical issues, questions) Assessment (assessment of the course of care and patient condition) Recommendation (recommendation for continuation of care)
ISBAR	Introduction (yourself and/or the patient) Situation (give the patient's age and status) Background (explain the presenting problem) Assessment (state the patient's current condition, risks, needs) Recommendations for patient's care (outline your treatment plan)
I PASS THE BATON	Introduction (introduce yourself to the patient, state your job function) Patient (identify the patient) Assessment (chief complaint, vital signs, symptoms, diagnosis) Situation (current status, medications, circumstances, code status) Safety Concerns (critical lab values, allergies, fall precautions, allergies) THE Background(history, previous problems, medications, family history)

Standardized Approaches to Handover Communications (continued.)

	Actions (actions taken and/or required and brief rationale)
	Timing (level of urgency, explicit timing, prioritization)
	Ownership (who is responsible: nurse/physician/team/patient, etc.)
	Next (plan for now, what happens next)
Ps	Patient (identity)
	Precautions (allergies, isolation, falls, specialty bed)
	Plan of Care (fluids, intake, output, intravenous access)
	Problems (assessment, review of systems, pain scale, etc)
	Purpose (goals to be achieved)
SHARQ	Situation (describe the situation)
	History (past medical history, allergies, home medications)
	Assessment (current medications, intake, output, status)
	Recommendations (recommendations, results, discharge planning)
	Questions (opportunity to ask questions)

As mentioned earlier, with handovers as a possible *source of error* (Manser et al., 2010), the standardization of handovers has been considered a promising approach to improve the effectiveness of handovers and to facilitate communication between departing and incoming nursing teams. For example, examining shift change handovers in high-reliability organizations (e.g., NASA, nuclear power plants, ambulance dispatch centers), Patterson (2008) found that handover standardization "reduces the cost of communication" (p.4). He further identified three realities about standardization handovers including: (1) the rules for interaction, which are fixed and not negotiated (e.g., the function, process, content, and who is included in the conversation); (2) no information on a topic implies that there is nothing worthy of mention on that topic; and (3) information can be conveyed more efficiently and with higher reliability (p.4).

However, Patterson (2008) also argued that patient handover standardization has ordered the content of the verbal interaction; that is, *most important first*. This structured checklist format, as described by Patterson, most likely, reduces the likelihood of interruptions, making handovers less interactive and therefore unable to convey the *macro-cognitive* functions supported by handovers, such as problem recognition, analysis, sense

making, and planning. Patterson further argued that if content ordering has become the primary focus during standardized handovers, "it is possible that exchanging paperwork will begin to substitute for verbal updates" (p. 4). In other words, the standardization of handovers may lead to the substitution of verbal handovers with written ones, as the written handovers will ensure that information is ordered in the desired way, that is, in a structured, checklist format.

Eggins and Slade (2011), from a linguistic perspective, also outlined two limitations of standardized handovers, including their *monologic* structure (that is, the focus is on the person giving the handover), and its exclusive focus on the *informational* content of the handover (P.216). Altogether, these limitations highlight Patterson's concerns about the "*ugly aspect"* (as Patterson calls it) of standardized handovers; that is, "the primary benefit of standardizing handovers will be a new way to blame "sharp end" providers for failing to communicate critical information during the course of care" (Patterson, 2008, p.5). Patterson further warned that in the future, investigations would blame any deviation from the standardized protocol as the main contributor to any undesired outcome (p.5).

Henriksen et al. (2005) noted that handover failures are due "to the absence of a deep understanding of the multidimensional nature of transitions, resulting in one-size-fits-all interventions that do not support technical work" (Henriksen et al., 2005, p. 320). In other words, examining the informational content and the structure of handovers and focusing primarily on its standardization as the only possible solution to improve handovers- might not be enough. Not to mention that, to date, little research has been carried out to explore the actual language that nurses use during handovers; most of the investigations have instead gathered numerical, statistical, and observational data.

Statement of Problem

Healthcare research has emphasized the importance of effective communication in these complex, stressful, dynamic, and unpredictable settings (Apker, 2012; Slade et al., 2008). Effective communication in health organizations, as stated by Apker (2012), helps to establish cohesive and positive relationships among professionals. Communication is considered by some to be "the cement which holds teams [in health organizations] together" (Poole & Real, 2003, p.396). Ineffective communication, on the other hand, may stand as a barrier which may negatively impact healthcare delivery among health professionals as well as the quality of services presented to patients.

The available research on clinical practices and discourse has so far focused on either doctor-patient interaction and doctor-to-doctor interaction (see Candlin & Candlin, 2003; Eggins & Slade, 2012; Jones, 2013; Staggers & Blaz, 2014; Streeter et al., 2015; Wodak, 2006). As argued by Slade et al. (2008), approaches to clinical communication, whether from a medical-sociological or socio-linguistic perspective, have tended to privilege the profession of medicine at the expense of the role of other clinical professions, including nursing, allied health, social workers, and other managerial and administration personnel. As also stated by Candlin and Candlin (2003), nursing and allied health do not always enjoy the same prestige and power or the autonomy that medical practitioners hold. Regardless of this focus on the profession of medicine, it is important to keep in mind that nursing and allied health interactions are neither of limited duration nor are they discrete events. Nursing, for example, is a continuous 24/7 activity "with interactions often requiring long periods of time and occurring in stretches which may occur over many days and weeks" (Candlin & Candlin, 2003, p. 144). Also, research has focused on general practice; that is, family doctors, at the expense of hospital clinicians due to difficult access (Slade et al., 2008). Slade et al. (2015) argued that similar to clinic-patient communication, handover communication between

clinicians is also essential for quality patient care. For example, failure to achieve effective handover is recognized as one of the five leading sources of clinical incidents (Slade et al., 2015; WHO, 2008). Therefore, this study intends to extend this argument to the yet untouched area of research; that is, nursing handovers. Up to date, very few studies, if any, have explored nursing interactions from an applied linguistic and discourse analytic perspective (Candlin & Candlin, 2003).

As noted previously, nursing handover - the process in which information about patient care is transferred from one nurse to another during shifts change (Riesenberg et al. 2010) - is one of the distinctive communicative events that take place in hospital settings. Researchers exploring nursing handoffs have pointed to their vulnerability to errors and misunderstandings, making this an important topic of research. The review of the literature indicates that there has been little investigation of the actual language that nurses use during nursing handoff.

Purpose of the Study

Previously, I provided a concise discussion on how nursing handoffs have been approached and investigated in the nursing and medical literature. I pointed out that this area of research is yet unexplored by applied linguists and discourse analysts, and that most of the investigations related to nursing have been carried out by nursing professionals rather than by discourse analysts (Candlin & Candlin, 2003). Therefore, in the light of the discourse analytic approaches I adopt in this proposed study, in this section, I aim to explicate the purpose of the study.

Nursing handoff interactions will be the primary focus of this study. Specifically, the focus is on the actual language that nurses use as they deliver handoffs and as they interact with each other during handoff sessions. While nursing handoffs have been explored by

nursing and medical professionals (see Anwari, 2002; Buus, 2006; Drach-Zahavy & Hadid, 2015; Payne et al., 2000), to date, no investigations have explored the actual language use in nursing handoffs and its impact on the (in)effectiveness of handoffs. This study aligns with previous research which highlights the importance of communication in handovers and its impact on the handover effectiveness (e.g., Apker, 2012; Jones, 2013). Drawing on discourse analytic approaches, this study will provide a detailed linguistic description of this type of Nursing discourse. Additionally, it will expand this investigation and offer new insights into how various discourse strategies may contribute to the recommended best practices of nursing handoffs. The following research questions guide the study:

Research Questions

1. What is the overall structure of nursing handoffs in those settings?
2. What are the main discourse pragmatic features that characterize nurses' talk during nursing handoff interactions?
3. Which of the discourse features observed align with the recommended best practices for nursing handoff interactions?
4. To what extent are nurses' positions (hierarchal structure) manifested and (re)produced in these nursing handoff interactions?

Significance of the Study

This study focuses on handoff interactions among nurses; that is, nurse-to-nurse handoffs, either in pairs or in teams. This specific scope of research is vital due to its role in ensuring the continuity of care presented to hospitalized patients. This study then is significant in a number of respects. First, worldwide, the nursing handoff has been a topic of interest since 1969 (Staggers & Blaz, 2013); however, nursing and medical professionals continue to strive to understand the complexity of this pivotal practice in order to prevent

inadequate communication which may lead to adverse events in healthcare system. While many studies have been conducted on the nursing handoff, more research on the actual language use during handoff interactions needs to be done. Hence, one of the contributions of this study is to expand this scope of research by providing detailed analyses of the authentic language use in nursing handoff.

Also, this study aims to bring to light and contribute to nurse-to-nurse interactions, which has been less studied by linguists and discourse analysts (Candlin & Candlin, 2003); accordingly, filling this gap. The study will provide a thorough linguistic description of this type of Nursing discourse. It will also offer empirical evidence into how language use, including the use of communication strategies and linguistic features, impact the quality of these interactions. This study will ultimately contribute to linguistic and discourse analytic research, in particular to better understanding on language use in medical settings.

CHAPTER TWO:

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Being interested in analyzing, understanding, and interpreting nursing handoff language-use, it is necessary must to supplement and empower the analyses with a discourse analysis theoretical framework. From the many approaches to discourse analysis (Tannen, Hamilton, Schiffrin, 2015), in this chapter, I will provide overviews of Critical Discourse Analysis (CDA), Halliday's Systemic Functional Grammar, and Interactional Sociolinguistics as the main theoretical approaches that guide this study. To better understand how these theoretical perspectives are relevant to medical interactions, the overviews will be supported with examples of studies that used these theoretical methods to investigate medical interactions. Next, I will introduce the literature review section in which I provide an overview of empirical research that has been conducted from additional theoretical perspectives on healthcare interactions in various healthcare settings. Moreover, as this proposed study aims to examine nursing interactions from a discourse analytic perspective, I will discuss studies which investigated medical and healthcare interactions from discourse analytic perspectives. Finally, the review of the literature will conclude with the few studies that examined handovers from a qualitative or discourse analytic approach, which aligns with the approach taken in this study.

Theoretical Framework

Critical Discourse Analysis

The conception of *power* is a major topic of interest in organizational research. Van Dijk (2003) stated that power and dominance are related to various social domains, such as politics, media, medicine, education, etc., "their professional elites and institutions, and the rules and routines that form the background of the everyday discursive reproduction of power" (p. 363) in these specific domains. In organizational research, as Iedema and Wodak (1999) tell us, the notion of *power* has been seen as both "a product of and a process by which members of the organization engage in organizing activity and setting priorities (Iedema & Wodak, 1999, p. 11). Within this view, as stated by Iedema and Wodak, organizational power is "constituted and reproduced through the structures of organizational communication, interaction and symbolism" (p.11). In healthcare organizations, specifically medical interactions, a number of scholars (e.g., Ainsworth-Vaughn, 2003; Heritage &Maynard, 2006; Jones, 2013) have documented the asymmetrical power relations in doctor-patient interactions. For example, it was found that doctors exercise power through the discourse positions that they take up, including asking questions, giving orders, offering advice, etc. *Questions* were among the most frequently studied interactional feature in doctor-patient interactions (e.g., Ainsworth-Vaughn, 2003; Boyd & Heritage, 2006; Robinson, 2006) which was associated with the notion of power as well as with how asymmetry is achieved in doctor-patient interaction. Scholars have found that in medical interactions, doctors overwhelmingly ask questions more than patients, a discourse position that allows them to assume control over the interaction. Doctors' *interruptions* (that is, taking the floor from other speakers) also played a role in studies of doctor-patient asymmetry (Beckman & Frankel, 1984; Jones, 2013). Beckman and Frankel (1984) for instance, examined 74 medical encounters which involved 74 different patients. The authors found that most interruptions

(54%) occurred after the first expressed concern by patients. The findings showed that doctors did not usually permit patients to express a full range of concerns at the outset of their visit. Additionally, doctors took control of interactions by asking specific, closed-ended questions that effectively terminated the spontaneous flow of information from patients.

Hierarchical power is also an aspect that characterizes nursing interactions (Iedema et al., 2004). Research on nurse-patient interaction, for example, showed that nurses exert power over patients due to the power position in the relationship (Shattell, 2004). As shown in the literature, power and prowess were identified as functions of nursing handoffs, meaning that some nurses are found to demonstrate their knowledge and expertise over other nurses as observed during nursing handoffs. Hence, with the presence of power which is demonstrated in nurses' hierarchical positions, it is likely that examining the authentic nursing handoff interactions in this study could reveal more about the influence of such factors on the nursing handover interactions. Hence, the framework of this study draws on critical discourse analysis (CDA), as CDA examines discursive practices focusing on how power is enacted in interaction.

Halliday's Systemic Functional Grammar

Many studies which adopt a critical approach also draw on Halliday's Systemic functional grammar (Wodak, 2006). In this approach, Halliday proposed three modes of meaning which are interconnected: 1) *ideational meaning* through which language constructs our experience of the world around us and inside us as meaning; 2) *interpersonal meaning* which constitutes relationships between participants; and 3) *textual meaning* which constitutes coherence and cohesion in texts (Slade et al., 2008; Wodak, 2006). For the purpose of this study, the *interpersonal meaning* is of central interest as it may reveal any potential communication difficulties (Slade et al., 2008). *Interpersonal meaning* involves

exploring "what kinds of role relations are established through talk, what attitudes interactants express to and about each other, and how they negotiate to take turns" (Eggins & Slade, 1997). In their study, *Clinical handover as an interactive event: Informational and interactional communication strategies in effective shift-change handovers*, Eggins and Slade (2012) were the first to explore handovers from a discourse analytic approach. The authors used SFL framework to analyze physician-to-physician handovers. They examined *interpersonal* and *ideational* meanings in these handover interactions (the authors used the terms *interactional* and *informational*, respectively referring to those meanings). For example, from the *interactional* dimension, an effective clinical handover, according to Eggins and Slade, is characterized by (to mention a few) clear framing with staging expressions to claim the floor and state the purpose. Moreover, it is delivered in a fluent and confident style with a pace and intonation patterns that discourage interruptions and allow the production of multiple-clause turns or chunks (Eggins & Slade, 2012). From the *informational* dimension, the presentation of information in an effective handover needs to be not only structured in a logical sequence, but also the presenter of handovers needs to effectively use the interactive context to collaboratively negotiate the presented information and be responsive to others' inquiries. By so doing, the presenter will give the incoming team the chance to collaborate and effectively contribute to these interactions. With this investigation, Eggins and Slade (2012) provided an example of how SFL can be used to illuminate our understanding of such communicative practices.

Interactional Sociolinguistics

In addition to CDA and SFL, interactional sociolinguistic perspectives will inform the analyses in the proposed study. The interactional sociolinguistic perspective in this study will focus, for example, on the phonological aspect of language utterances as a potential indicator of power mechanisms in work organizations (Gumperz, 1977; 2001). As Gumperz

(1977) tells us, interactional sociolinguistic analysis is appropriate to "communicative situations of all kinds, monolingual or multilingual, as a means of monitoring the communication processes that are so important in institutional life" (Gumperz, 2001, p. 226). He further suggested that to better understand interactions it is necessary to pay attention to details about the nature of *contextualization cues* and their functions in interactions. *Contextualizing cues* refers to "any aspect of the surface form of utterances which, when mapped onto message content, can be shown to be functional in the signaling of interpretative frames" (Gumperz, 1977, p.81). The interpretative process, as explained by Gumperz, is 'situated' in the participants' ongoing interactive situations. The concept of 'frame' describes how speakers receive, understand, and evaluate the ongoing interaction, and that the 'frame' is always interactive and interpretive (Gumperz, 1977; 2001). *Contextualization Cues* include prosodic features, paralinguistic features, lexical or phonological choice, formulaic expressions such as greetings, code-switching, openers, interjections, or frozen sequences (Gumperz, 1977). Paying attention to such contextualizing cues can help discourse analysts to gain insights into situated understandings and to explore how theses contextualization cues contribute to participants' interpretations of the enfolding talk (Gumperz, 2001). Thus, most of Gumperz's research focused on *intercultural interactions*. For instance, in his analysis, he demonstrates how a change in intonation (falling rather than rising intonation) could lead to misinterpretation and miscommunication between people of different cultural backgrounds (Gumperz, 2001). With the participants coming from diverse cultural backgrounds in this present study, the analyses will pay attention to emerging contextualizing cues.

Literature Review

To fully understand the scope of this study (that is, nursing handover interaction), it is essential to examine the empirical research that has been conducted from various theoretical perspectives on communicative interactions in various healthcare settings, in

general, and on nursing interactions, more specifically. Moreover, in this section of the literature review, I discuss those studies which investigated medical and healthcare interactions from discourse analytic perspectives. This area of research is pertinent as it reveals what discourse analytic perspective can contribute to our understanding of nursing handoffs. Finally, this section concludes with the major findings of other qualitative studies that examined nursing handovers from different research traditions.

Research Studies on Communicative Interactions in Healthcare Settings

Healthcare settings are among "the most complex kinds of social organizations produced by humankind" (Iedema, 2007, p.7). In these organizations, communication and interaction among professionals and/or patients (spoken, written, electronic, gestured, etc.) stand out as vital areas of investigation in organizational, healthcare (e.g., Iedema, 2007; Iedema & Carroll, 2010), and discourse analytic research (e.g., Eggins & Slade, 2011; Slade et al., 2008; Wodak, 2006). A considerable amount of research research has been conducted in this area with a primary aim to improve health organizations (Iedema, 2007; Jones, 2013). In these examinations, scholars found that effective communication in healthcare settings is critical as it impacts the quality of services provided to patients (Apker, 2012; Slade et al., 2015). Therefore, research on healthcare communication and interaction, which may help predict and determine the quality of outcomes presented to patients, has been of interest to scholars from various disciplines.

Doctor-patient interaction in clinical settings has been a major topic of interest for discourse analysts and applied linguists, among others (Candlin & Candlin, 2002; 2003; Ten Have, 2001; Wodak, 2006). As stated by Slade et al. (2015), the development of effective doctor-patient relationships that "balance the clinical focus of healthcare interactions with the development of empathy and rapport between clinicians and patients" (Slade et al., 2015, p.5)

is critical for patient-centered care. Thus, analyzing clinical discourse, including the language and communication strategies that are used by clinicians to engage patients in their healthcare helps to guarantee patients' satisfaction and safety.

Scholars have also investigated communication among teams and teamwork in health organizations. These investigations included how teams' open, collaborative and respectful communication contributes to healthcare outcomes (Apker, 2012). For example, via interviews, focus-groups, and observations, Apker and her colleagues explored nurse-team communication (e.g., as they deliver bedside patient care) in a series of studies (Apker et al., 2005; Apker et al., 2006; Propp et al., 2010). In these studies, the authors examined how nurses' communication behaviors contribute to team *synergy* (that is when each team member contributes effectively to the overall effort). The authors identified nine synergistic communication behaviors which lead to effective teamwork: 1) coordinating the patient-care team (e.g., assigning team member responsibilities); 2) mentoring team members (e.g., guiding and supporting team members); 3) empowering lower-level team members (e.g., encouraging them to speak up and share ideas); 4) advocating on behalf of others (e.g., giving voice to the needs of team members); 5) managing conflict constructively (e.g., dealing with conflict in professional manner); 6) listening actively to team members (e.g., displaying openness to members ideas); 7) fostering positive climate (e.g., modeling optimism); 8) managing workplace stress (e.g., calming and comforting nurses during stress times); and 9) pinch-hitting for team members (e.g., helping team members with tasks) (Apker et al., 2005; Apker et al., 2006; Propp et al., 2010). As noted earlier, these findings were based on interviews and observations, and no analyses of nurses' language use were employed.

Today, healthcare professionals, who work in the same health organizations, are increasingly diverse (Apker, 2012), representing not only various professions and specializations but also various demographic characteristics (ethnicity, race, gender, etc.),

cultural backgrounds and languages. Consequently, communication among healthcare members is increasingly becoming an intercultural phenomenon. Scollon and Scollon (2011) defined *intercultural communication* as the study of distinct cultures or groups *in interaction with each other*. In this sense, intercultural communication focuses on how people from different cultural backgrounds communicate with each other in specific situations. This focus differentiates intercultural communication from *cross-cultural communication*- which compares communication in one culture with that in another one (Corbett, 2011). Therefore, in cross-cultural communication, the interaction among the distinct groups is not required as the researcher studies each group as a separate entity with presupposed distinctive variations, such as studying "the Chinese culture" in contrast with "the Western culture". However, in intercultural communication or dialogue, the role of interaction is pivotal as people from different cultures bring to their interactions bundles of cultural beliefs and assumptions about the norms of communicative practices as they communicate with each other. Since these beliefs and assumptions are culture-specific, they likely impact the communication in which people from diverse cultures are involved, which leads, on occasion, to unintentional conflict or misunderstanding. Such conflict in communicative styles may vary from "vague unease and mild irritation to misunderstanding and active hostility" (Corbett, 2011, p. 308). The analysts' role, as Scollon and Scollon (2001) put it, "is to stand outside the interaction and to provide an analysis of how the participants negotiate their cultural or other differences" (p. 539).

With the diversity in healthcare settings, interactional misunderstandings are likely to happen. For example, in international doctor-patient communication, Jones (2013) suggested that different expectations about power and interactional roles are possible sources of interactional misunderstandings in these interactions. Smith (1999), for example, surveyed what Hong Kong patients expect and want in relationships with doctors. The author found

that most of the patients were resistant to the patient-centered communicative strategies that were used by their Western doctors. Patients preferred doctors who would tell them what exactly they needed to do. In contrast, Erickson and Rittenberg (1987) focused on the difficulties that foreign medical graduate doctors have in adapting their interactive style to the American expectations. In the US setting, foreign doctors were expected to take an active role in the medical interactions; however, tensions appeared as the doctors used conversation and discourse strategies that differ from those expected by the American patients. To extend this line of inquiry to nursing research, it would be interesting to examine, using discourse analytic perspectives, how nurses, who represent various cultural backgrounds, interact either with each other (nurse-to-nurse interaction) or with patients (nurse-to-patient interaction).

Discourse Analytic Studies on Medical and Healthcare Interactions

Medical discourse is a *massive topic* (Halkowski, 2011) which has fascinated scholars in various fields including philosophy, anthropology, sociology, medical, communication, linguistics, discourse analysis, and many others. Because of the discourse analysis approach taken in the present study, the review in this section is limited only to studies in which discourse analytic approaches were utilized to examine various medical interactions.

The medical discourse literature has focused predominantly on doctor-patient communication (Halkowski, 2011; Fleischman, 2001; Slade et al., 2015; Wodak, 2006). Fleischman (2001) noted some major differences between the research approaches and methodologies that discourse analysts use to investigate doctor-patient interaction, which is in comparison to biomedical scholars. For instance, as stated by Fleischman (2001), discourse analysts are concerned with exploring how lexicogrammatical features, discourse structures and organization, and features of conversation are used and function in the discourse of doctor-patient communication. Biomedical scholars, on the other hand, are more interested in

identifying salient features in this discourse form, for example, identifying the main phases of the medical encounter, but not the actual language use in this discourse. Consequently, biomedicine investigations are observational (e.g., field observations) and quantitative in nature and typically do not involve any analysis of language and texts (spoken or written). Another difference between these two approaches is that discourse analysts are more interested in the interpretation of data, whereas the primary goal of biomedical research is taxonomy/quantification (Fleischman, 2001). Fleischman further identified research objectives and audiences as a significant factor that sets these two bodies of literature apart. For example, with these investigations, the medically generated research always aims to improve the doctor-patient relationship as well as to improve healthcare delivery. Hence, such research is mostly directed to doctors. While such objectives and audiences may also be part of discourse analysts' agenda, the primary aim of discourse analysis is to extend its methodologies into medical discourse (Fleischman, 2001).

As Fleischman (2001) pointed out, though there is a massive cross-disciplinary literature on medical discourse, there are significant differences among interests, theories, and methodologies that scholars have used to investigate medical interactions. Among this substantial research, a sizable body of research has examined medical discourse via discourse analytic perspectives. The majority of this research has been in the doctor-patient relationship; that is, one-to-one interactions between doctors and patients in clinical settings (e.g., Atkinson, 1995; Slade et al., 2008; Wodak, 2006). In *Lay diagnosis in interaction*, Ten Have (2001) identified two main trends in doctor-patient interaction research. The first one focuses on the medical encounter itself; that is, the overall structural view of medical encounters as *a genre* in itself. The other trend, on the other hand, focuses on doctors' behaviors as they perform particular professional communication strategies, such as inviting, allowing, or discouraging patients from expressing their ideas and feelings (Ten Have, 2001).

Conversation analysis (CA) has been widely used in the analysis of medical interaction, in particular, doctor-patient interaction (Drew, 2001; Heritage & Maynard, 2006; Maynard & Heritage, 2005). CA scholars have analyzed: 1) the overall structure of the primary care visit, 2) the sequence structures, and 3) the designs of the individual turns at talk that constitutes those sequences (Heritage & Maynard, 2006). Heritage and Maynard's (2006) book *Communication in Medical Care: Interaction between Primary Care Physicians and Patients* contains the most current CA studies of doctor-patient interaction, and which were carried out in various locations, including the United States, UK, and Finland. Many of these studies focused on doctors' talk. For example, Robinson (2006) analyzed doctors' initial turn of talk. The analyses revealed that doctors' initial questions to patients are designed differently based on patients' types of visit; that is, if the patient is coming for a new problem (e.g., *How can I help you today?*), for a follow-up visit (e.g., *How are you feeling today?*), or for a chronic-routine visit (e.g., *What's new?*) (Robinson, 2006). Boyd and Heritage (2006), on the other hand, explored doctors' questioning during the history phase in the medical encounter. The analyses revealed that doctors' questions exhibit two principles: *optimization,* which refers to the design of questions in ways that encourage 'best case' responses, and *recipient design*, in which doctors' questions are tailored to patients' specific circumstances.

Other studies in Heritage and Maynard's (2006) book are dedicated to patients' talk. Heritage and Robinson (2006), for instance, presented the phenomenon of *doctorability*. In their analyses, the authors showed how patients go beyond describing their illness to being able to justify and legitimate their own decisions to seek medical attention. Similarly, Halkowoski (2011) demonstrated patients' abilities to describe how their symptoms have accumulated to the point that they decided to visit a doctor. The rest of the studies in this book focused on other various topics, such as diagnosis (e.g., the delivery of good and bad

news) (Maynard & Frankel, 2006), treatment and recommendations phases (Stivers, 2006; Greatbatch, 2006), and doctors' authority (Peräkylä, 2006).

Besides its strength as a micro-analytic approach, conversation analysis studies used both audio- and video-taped of actual medical encounters and consultations. The use of videotaped data facilitates the inclusion of both verbal and non-verbal interactions, which contribute effectively to the interpretation stage. However, most of CA studies have focused primarily on primary care clinical contexts, such as doctors' offices instead of other medical contexts, such as inside hospitals.

Candlin and Candlin (2003) pointed out that one of the reasons why research has focused mostly on doctor-patient interaction is related to doctors' prestigious and power position. Thus, critical discourse analysis (CDA), which deals with aspects of power, dominance, and social inequality, has also played a role in medical research. Wodak (1997) stated that CDA sees discourse as a form of *social practice*; this "implies a dialectical relationship between a particular discursive event and the situation(s), institution(s), and social structure(s) which frame it" (Wodak, 1997, p.173). With such CDA perspectives, various studies have critically examined medical discourse (e.g., Ainsworth-Vaughn, 2003; Fleischman, 2001; Slade et al., 2008; Wodak, 1997). Ainsworth-Vaughn (2003), for example, examined questions in medical discourse and their relation to power since "to ask a question is to claim power over emerging talk" (p.462). Ainsworth-Vaughn (2003) found that in medical encounters, questions found to demonstrate both: *power-claiming* (that is, the speaker who has the power asks most questions), and *power-sharing* (that is, the speaker may use questions to share or give up power). However, since medical encounters are often built on doctors' questions, researchers have focused more on *power-claiming* questions (Ainsworth-Vaughn, 2003; West, 1984). Slade et al. (2015), for instance, examined doctor-patient interaction in emergency departments in a teaching hospital in Sydney. Part of the

study focused on doctors' questions. The analysis revealed that doctors used many questions and few statements not only in the initial consultation phase, but also in the later consultation phase. This strategy of course had an impact on patients, in the sense that patients did not feel that it was appropriate for them to ask any questions, or they felt too overwhelmed by the context to do so (p. 285). West (1984) also examined doctors' questions in clinical encounters, and found that 91 percent of the questions were produced by doctors; while only 9 percent of the questions were asked by patients. These findings may provide critical evidence towards doctors' control over evolving discourse in medical encounters. It would be invaluable to carry out such investigations among nurses either in nurse-to-nurse interaction or nurse-to-patient interaction. For example, nursing handoff represents one of nurse-to-nurse interactions in which nurses may differ based on participants' status in nursing hierarchical structure as well as their level of expertise and years of experience. Examining nurses' actual language use during this communicative practice, as this study aims to do, may uncover how nurses exercise power and authority as they deliver this practice.

Recently, scholars have begun to step out of clinical settings to examine how doctor-patient relationships develop in high-stress and time-pressured healthcare settings, such as in hospitals' emergency departments (e.g., Andersson et al., 2014; Kington & Short, 2010; McCarthy et al., 2013; Slade et al., 2015), and other hospital settings (Iedema, 2007). To date, Slade et al. (2015) have been the only team of researchers who have employed discourse analytic approaches to studying interactions in emergency departments. Slade et al. (2015) combined two qualitative methods including discourse analysis of authentic communication between patients and clinicians (doctors, nurses, and allied health professionals) in five representative emergency departments in Australia, along with an ethnographic analysis of the social, organizational, and interdisciplinary clinicians practices of each of the five departments. The authors investigated how the emergency department

context affects clinician communication practices, and how such practices shape patient and clinician experiences and perspectives of emergency care. The combination of ethnographic, sociolinguistic, and discourse analytic methods allowed the researchers to describe how information about each patient is gathered, interpreted, transmitted, and then acted upon in emergency departments. Also, the authors showed how a successful combination of patient involvement in their care, effective medical diagnoses, nursing, and systemic support contribute to safe and comfortable journeys for patients in emergency departments.

Similarly, Iedema's (2007) book *The Discourse of Hospital Communication* includes recent research that has been conducted in the field of hospital communication and interaction. The studies in this book employed discourse analysis among other theoretical frameworks. Focusing on discourse analytic studies, Barton (2007), for example, examined 35 recorded encounters between patients and their medical oncologists at a Midwestern Cancer Institute. The author demonstrated how discourse analysis has the potential to show how doctors and patients or families actively construct interactions to raise and address their ethical concerns. The discourse analytic investigation also revealed how the ethics of contemporary medicine takes place in a complicated context which "encompasses not only the ethical principles of autonomy and informed consent but also the ethical principles of clinical care within the profession of medicine" (p.35). Jorm, Travaglia, and Iedema (2007) also employed discourse analysis to explore doctors' statements about *the system* that delivers health care in hospitals. Particularly, they examined how doctors position themselves in relation to *the system*. The data were gathered via 41 semi-structured interviews with doctors in a hospital in Sydney. The analyses of these interviews revealed that doctors speak about themselves in ways that construct various types of agency, and accordingly, reveal different attitudes towards *the system*. For example, on the one hand, when talking about *the system,* doctors use *we* which indicates that they see themselves as integral to *the system*. On the

other hand, doctors see themselves as being able to act, however, only in defiance of *the system* which gets in their way (Jorm, Travaglia, and Iedema, 2007).

To conclude, this section provided a review of the literature which has employed discourse analytic perspectives to examine medical and healthcare interactions. Viewed holistically, the overview suggested that doctors have received the primary focus when compared to other health professionals, such as nurses. Moreover, the investigations focused mostly on clinical settings; that is, dyadic doctor-patient discourse, and little is known about the discourse and interaction inside hospitals, the *crowded space*, as described by Iedema (2007). Additionally, little, if any, discourse analytic research has explored teamwork in hospital settings, in particular, nursing teamwork. Halkowski (2011) has called for more research to explore "how medical systems and teams coordinate and manage their work on behalf of patients" (p. 330).

Empirical Studies Focused on Clinical and Nursing Handovers

A considerable body of research has investigated handovers, clinical handovers (e.g., Bernadette et al., 2015; Eggins & Slade, 2012) and nursing handovers (e.g., Behara et al., 2005; Buss, 2006; Payne et al., 2000; Gordon & Findley, 2011; Jefferies et al., 2012; Riesenberg et al., 2010; Smeulers et al., 2014). In this section of the literature review, I present the empirical studies that focused on clinical and nursing handovers. I also present the few studies that have taken a qualitative approach, more generally, and discourse approach, more specifically, to examine handovers.

In a quantitative investigation, Bernadette et al. (2015) explored the responses of 707 health professionals (including doctors, nurses, pharmacists, and other allied health professionals) about their perceptions of clinical handovers. The authors were interested to know: a) the major barriers to engaging senior staff as effective role models; b) the aspects of

clinical handovers that junior health professionals find most difficult; and c) if participants can suggest ways in which clinical handover could be improved in their working contexts. As for the first investigation, the findings showed that senior professionals did not perceive clinical handover training as their responsibility, and that, during clinical handovers, they were more focused on clinical priorities and were too busy to provide feedback about handover to junior clinicians. The most challenging aspect of clinical handovers for junior healthcare professionals to master was checking whether or not the recipient has understood the information during handover interactions. Junior professionals indicated that the existence of a hierarchical hospital culture constrained them from openly engaging with their senior colleagues. Finally, many participants responded to the third investigation about how to improve the clinical handover, by suggesting standardizing the clinical handover. Also, participants agreed on the importance of modeling and skills training by proficient staff as critical components of handover improvement.

Taking a discursive approach, Eggins and Slade (2012) also examined clinical handover (that is, physician-to-physician handover) in an Australian public hospital. The authors adopted discourse analysis, conversation analysis, linguistic, and Systemic functional linguistic perspectives to examine physicians' language in ten, audio-taped and transcribed shift-change handover interactions among incoming and departing physicians. Through analyzing and contrasting doctors' language use, the authors found that communication strategies, both informational and interactional, were likely to contribute to effective handovers. The authors further argued that for clinical handovers to be effective, all members of incoming and departing teams need to collaborate to manage both information and interaction communicative accomplishments of the clinical handover (Eggins & Slade, 2012). They also identified lists of various informational and interactive communication strategies, for giving and receiving handovers, that would contribute to successful clinical

handovers. Such lists align with the needs of the participants' in Bernadette et al. (2015), who suggested the importance of skills training, as a way to improve handovers.

As for nursing handovers, I provide in Table 2 (below) an overview of the various investigations which have been done on nursing handoffs. Most of these investigations which are from health organization studies and nursing research have been carried out by health professionals in the United States, Australia, UK, Canada, and Europe. As shown in Table 2, the predominant approach to these investigations is qualitative in nature; that is, scholars have used ethnographic methods such as interviews, observations, and focus groups to examine nursing handoffs (e.g., Behara et al., 2005; Lally 1999; Manias & Street, 2000; McFetridge et al., 2007; Payne et al., 2000). For example, besides observations and interviews, both Lally (1999) and Kerr (2001) employed thematic analysis to analyze audio-taped nursing handovers. It should be noted that thematic analysis is general and does not look at details of the actual language used. Thus, in this study the handover interactions were classified by categories, providing the major functions of nursing handovers. The findings of both studies revealed that, besides transferring patients' information which is the informational function of handovers, nursing handovers served other functions, such as educational (e.g., teaching), social (e.g., team-building, group cohesion, stress relief), and organizational (shift plans).

Buus (2006) approached this investigation drawing on ethnographic and conversation analysis approaches. The author explored how nurses orient to institutional context in six nursing handover shifts at two mental health wards at a Danish University hospital. The author explored the overall structural organization of the nursing handoff interactions, including the turn-taking organization, the turn-constructions, the topic-organization, the repair-organization, and the wording of these interactions. The analysis revealed that most of the interactional sequences among nurses' interactions were initialized by *other-initiated repairs* (i.e., questions by the incoming nurses). The majority of these

other-initiated repairs were related to requesting further clinical knowledge about patients' anticipated needs. The analysis also revealed that the purpose of producing clinical knowledge among nurses during handovers was to report everyday actualities (i.e., patients' behaviors and needs during the shift). This clinical knowledge was provided in a hybrid language (between lay and technical), which was full of jargon and abbreviations. Moreover, interactive turn-taking moves were mainly triggered by nurses who had authority (based on the rank of the nurse) to question the reporting nurse. Furthermore, *uncertainty*, frequently appeared in these handovers, and was handled with face-saving strategies, such as nurses expressing that they already 'knew' about specific clinical situations. This uncertainty about nurses' knowledge regarding the patients emerged from the incomplete patient information which were provided in patients' written record. Thus, as argued by Buus, nurses tended to avoid any challenging interrogations by other nurses, and that they favored to display a less challenged sense of mutual understanding during the handoff interactions. Additionally, the analysis revealed that references to 'knowing the patient' during the handoff interactions imposed closures in the discussion of patients' conditions. Examining nursing handovers via applied conversation analysis made it possible to capture the dynamics of turn-taking, the characteristics of speech delivery, and the linguistic and social conventions of this practice as well as its impact on the handover delivery. Furthermore, this approach allowed the author to display the main difference between nursing and clinical handovers, as the former is concrete and predicts patients' immediate needs and current conditions, while the other is conceptual and creates longer trajectories of patients' treatments and health.

Other studies used quantitative methods, mainly surveys, to gather patients' and nurses' perceptions of and satisfaction about nursing handoffs (e.g., Anwari, 2002; O'Connell et al., 2008; Streeter et al., 2015). O'Connell et al. (2008), for example, surveyed nurses' perceptions of nursing handovers to determine the strengths and limitations of this process.

With a total of 176 nurses' responses, the authors found that the majority of the nurses indicated their dissatisfaction with the poor quality of handover information. In other words, nurses indicated that patient information was often missing, incomplete, or even irrelevant; a finding that highlights the ineffectiveness in communication among some nurses. In addition, the findings revealed that nurses considered the handover process as time consuming practice and their belief that patients' information can be accessed via patients' charts. The authors argued that this redundancy of information could be overcome by focusing on handing over patients' information which is not presented in any other form of documentation. Finally, nurses reported that frequent interruptions during the handover process not only distracted nurses but also increased the time required to handover.

In a more recent quantitative investigation, using the Medical Communication Competence Scale online survey (MCCS), Streeter et al. (2015) collected responses from 286 nurses to assess information exchange (information giving, seeking, and verifying) and socioemotional communication behaviors (that is, behaviors which foster trust, warmth, and concern) associated with high quality patient handovers at the nursing change of shift. By analyzing nurses' perceptions of self- and other- competence during *best* or *worst* handovers, the authors aimed to find out if nurses could associate specific communication skills (related to information exchange and socioemotional communication behaviors) with competent handovers. The findings revealed that the best quality handovers were the ones in which caregivers were given opportunities to ask (that is, *information seeking*) and respond to questions during handover sessions (that is, *information giving*). Handovers which limited these two dimensions of information exchange were found to be sources of communication-based errors. These findings supported the guidelines for standardized handovers suggested by The Joint Commission (TJC). The findings also revealed the importance of the socioemotional communication behaviors, which were not addressed in the TJC guidelines.

For example, the authors found that the best handovers made use of socioemotional behaviors, such as being warm and friendly during the handover process, using easily understood and free of jargon language, being open and honest, making other nurses feel comfortable and relaxed, and the like. The authors argued that such socioemotional behaviors not only enhance patient care outcomes but also improve the quality of nurses' lives at work. Surprisingly, the findings showed that nurses agreed that it is the role of the incoming team to establish such positive socioemotional climate. This suggest that language that is both informational and relational is important in this type of interaction.

Anwari (2002) examined the quality of handover at the post-anaesthesia care unit (PACU) in a Saudi hospital (Riyadh Armed Forces Hospital). In this study, PACU nurses completed a questionnaire related to the quality of handovers given by anesthetists. The survey focused on the quality of patients' information given verbally by anesthetists to PACU nurses, the condition of patients as they were handed over to PACU nurses, the behavior anesthetists during the handover process, and the PACU nurses' satisfaction with the overall handover process. The findings revealed that most anesthetists provided adequate verbal information, delivered patients well covered, and left their patients at PACU in a stable and satisfactory condition. Also, 49% of PACU nurses judged handovers as good, 28% as satisfactory, and 24% as bad.

Viewed holistically, although the predominant approach to investigate nursing handovers is qualitative in nature, little is known about the actual language use in this communicative event. Examining clinical handovers via discourse analytic approaches, Eggins and Slade (2012) provided a model of the strengths of such perspectives in uncovering the communicative strategies that may lead to communicatively effective handovers. The use of discourse analytic perspectives will contribute to our understandings of this critically important hospital event and will eventually enhance patient safety. Similar

to clinical handovers, nursing handovers are high-risk practices that need to be examined as interactive practices. Studies such as Streeter et al. (2015) indicate that both information-focused and relationally-focused discourse is essential in this type of Nursing discourse. The discourse analytic approach in the proposed study will offer an opportunity to examine authentic nursing handover interactions to examine the actual language use in these practices and to identify language strategies that nurses use as well as those which may expedite the effectiveness of handover practices.

Table 2

Research Studies on Nursing Handover

Author (Year)	Setting	Research Method	Sample	Major Findings
Lally (1999)	One ward in a general hospital (IK)	Ethnography (unstructured observational approach) -Audio-taped inter-shift handovers	Six handover sessions (samples are available)	-besides transferring patients' information, handovers had other functions, including teaching, team-building and group cohesion. -Nursing rituals (inter-shift handovers) enabled junior nurses to become competent members of the ward culture.
Manias & Street (2000)	16-bed, critical care unit in a public teaching hospital (Melbourne, Australia)	-Critical Ethnography (Observations & Interviews) -Bedside, end-of-shift handovers	6 registered-nurses (No handover samples)	- Authors identified five practices: 1. the global handover serving the needs of nurse coordinators (overview of all patients); 2. the examination (nurses regarded requests for patient information as critique or an examination of their clinical practices- they expressed fear and anxiety during the process); 3. the tyranny of tidiness (nurses demonstrate their ability to maintain patient tidiness during bedside handovers); 4. the tyranny of busyness (oncoming nurses focused on the deficiencies of performed tasks and tasks yet-to-be-completed rather than acknowledging the previous nurses' busy shift or well performance); 5. and the need to create a sense of finality (nurses were driven by the need to complete their nursing tasks before providing handovers).
Payne et al. (2000)	-5 acute elderly care units in a	-An ethnographic approach (non-participant	23 handovers	- Qualified nurses have a clear consensus on what constitutes a `good' handover (their handovers were rapid, goal-directed and brief).

	district general hospital (South of England)	observation, semi-structured interviews, documentary data, audio-taped recording of handovers) -End-of-shift handovers	involving 34 nurses	-Unqualified and student nurses preferred slower, more detailed and less jargonized language. -Authors indicated that handovers: · are formulaic, partial and cryptic; · are given at high speed; · use abbreviations and jargon; · require socialized knowledge to decode; · prioritize biomedical accounts of patients; · present patients as bodies to be processed; · are presented in the `passive voice' as a collective and impersonal account of care.
Anwari (2002)	Postanaesthesia Care Unit Center (PACU) (Riyadh, Saudi Arabia)	Surveys (a questionnaire related to the quality of handover of the patient on admission and PACU nurse)	276 patients (No handover samples)	-Looking at specific aspects of handovers, including; the information about the patient given verbally to the PACU nurse by the anesthetist; the condition in which the patient was handed-over to the PACU nurse; the behavior of the anesthetist during the handover; and the satisfaction of the PACU nurse with the handover, patients PACU nurse and patients rated overall handovers as good.
Kerr (2002)	-National Health Services (NHS) pediatric hospital -Oncology/ Hematology	An inductive approach (observation and interviews) -End-of-shift handovers(audio-recorded)	20 handovers	-Handover effectiveness is characterized by flexibility in managing competing demands and tensions. -Informational functions of handovers are most common for both wards. -Social functions are more frequent in case 1, while organizational are exhibited more often in case 2. -Educational functions of handovers are similar in both wards.

	(case 1) and ENT/Plastic/ Dental ward (case 2) (UK)			
Behara et al. (2005)	Five emergency departments (EDs) (United States and Canada)	- ethnographic observations of caregiver transitions (in-depth investigations of selected accidents or incidents involving handovers) - audiotaped transitions in four of the five institutions -End-of-shift handovers	handovers involving physicians and nurses	- Handovers differed substantially in their external characteristics (some were one-to-one exchanges, others involved exchanges among two groups). -Authors proposed a conceptual framework addressing four important attributes of a handover: (1) the type of the process in which it occurs; (2) the primary content; (3) structural issues (e.g., the nature of the participants); and (4) dynamic issues (e.g., the position of a given case in a structuredness/continuity space).
Buss (2006)	In-patient mental health ward (Denmark)	- Ethnography -Applied Conversation Analysis of Audio-recorded end-of-shift handovers	6 handovers (samples are available)	- Most of the information in handovers were accounts to patients' behavior and the nursing actions about patients' behavior. - Access to clinical knowledge was not evenly distributed; handovers were controlled by departing nurses. - Handovers were not governed by formal conventions: informally structured, elaborated on or closed down according to was present in handovers.

				- Clinical knowledge was conventionalized knowledge: conventionalized practices caused a silence of the lease powerful nurses' voices generated uncertainty, and promoted knowledge of the patients' clinical situation that was not necessarily precise or up-to-date.
McFetridge et al. (2007)	Handovers between emergency department (ED) and intensive care unit (ICU) (Northern Ireland)	-A multi-method design combined (documentation review, semi-structured individual and focus group interviews) -Patient transfer	12 nurses (No handover samples)	-Despite the integral role of handovers, the process of the patient handover lacked consistency in approach between nurses (nurses approached the process of patient handover in different ways). - There is a need for a structured approach to patient handover. -there is a lack of consistency in the type of patient documentation used in supporting the patient handover
O'Connell et al. (2008)	Metropolitan tertiary hospital (Australia)	Clinical Handover Staff Survey	176 nurses	-Nurses felt that the handover process was too time-consuming. -Nurses reported that the handover information could be found in the patients' charts. -Nurses reported being frequently interrupted during the handover process. -Nurses valued receiving handover directly from the nurse caring for the patient rather than from the nurse in charge of the shift. -Nurses indicated that they valued being given an overview of all patients on the ward. -Unlike nurses who worked in the organization for a short period of time, nurses who worked in the organization for a long period of

				time reported that handover took too much time. -Overall, the results suggest that there are inefficiencies in current handover practices.
Streeter et al. (2015)	Allnurses.com	Anonymous, cross-sectional survey Factorial design: (2 handoff quality; best vs. worse X 2 nurse role; incoming vs. ongoing) -End-of-shift handovers	286 nurses recruited from the website allnurses.com	-Best nursing handovers were those in which both incoming and ongoing nurses are made frequent use of • information exchange (information giving, seeking, and verifying) • socioemotional communication behaviors (e.g.being warm and friendly, using easily understood language, contributing to a trusting relationship)
Drach-Zahavy & Hadid (2015)	Five internal wards (unknown location)	Mixed-method approach (observations, surveys and pooling data from patients' charts for data collection)	200 randomly selected handovers	-examining the relationship between the strategies the nurses employ during handover and the number and types of treatment errors in patient care; the authors found: • nearly one-fifth of the patient's files, medication dosage given was inaccurate; • nearly one-third a care order was fulfilled late • nearly half, documentation was partially missing • face-to-face verbal update with interactive questioning, update from practitioners other than the outgoing, topics initiated by the incoming and outgoing team were significantly and negatively linked to some treatment errors

CHAPTER THREE:

METHODOLOGY

Drawing on the three discourse analysis approaches described in the previous chapter, this exploratory study aims to analyze authentic nurse-to-nurse handoff interactions during nursing handover shifts at the National Guard Hospital (NGH) and King Fahad General Hospital (KFGH) in the western region of Saudi Arabia. It should be noted that the two sectors differ in one major aspect; that is, while the NGH is a private sector, which provides healthcare services only to the Saudi Arabian National Guard personnel, their dependents, and other eligible patients, KFGH, on the other hand, is public and administered by the Ministry of Health. This difference between the two sectors gives us the advantage of having data which could be representative to nursing handoffs in private and public hospitals in Saudi Arabia.

Turning to the data analysis, because it was found that nurses at the NGH do not follow any of the available standardized handoff protocols, I use an inductive approach to examine the data from this site, in order to generate a generalizable handoff model of the nursing handoff structure. This handoff model can later be used as a training tool, and to support nursing and language pedagogical implications in this context. As for King Fahad General Hospital (KFGH), I found that nurses follow the well-established SBAR protocol to guide the nursing handoffs in this site; thus, the data analysis is approached deductively. In

other words, the data from KFGH is explored to determine to what extent do nurses comply with the SBAR handoff protocol.

Furthermore, the study aims to provide a linguistic description of this register, including the various interactional and linguistic features that nurses use in this type of Nursing discourse. Moreover, the study explores if certain discourse features may lead to communicatively effective nursing handoff interactions in both settings. Additionally, the study aims to examine how nurses' hierarchical structure may impact the overall nursing interactions. As mentioned in chapter 1, the main research questions that guide this study are:

1. What is the overall structure of nursing handoffs in those settings?
2. What are the main discourse pragmatic features that characterize nurses' talk during nursing handoff interactions?
3. Which of the discourse features observed align with the recommended best practices for nursing handoff interactions?
4. To what extent are nurses' positions (hierarchal structure) manifested and (re)produced in these nursing handoff interactions?

As mentioned earlier, this study draws on three discourse analysis approaches to examine the nursing handoffs. Discourse analysis provides researchers with opportunities to study "how people present themselves, manage their relationships, assign responsibility and blame, create organizations, enact culture, persuade others, make sense of social members' ongoing interactional practices," and the like (Tracy, 2001, p.734). Medical discourse interactions, such as doctor-patient interactions, are of interest to some discourse analysts. Numerous studies have used discourse analytic perspectives to investigate medical interactions mostly in clinical settings (e.g., Iedema et al., 2004; Iedema et al., 2004; Slade et al., 2008; Wodak, 2006), and more recently, in hospital settings (e.g., Barton, 2007; Iedema,

2007; Slade et al., 2015). This study is in-line with these investigations, using discourse analysis as the primary analytic method to examine nursing handoff in hospital settings. Additionally, by examining nursing handoff in hospital settings, the study builds on growing work which focuses on hospitals rather than doctor's offices in clinical settings.

The overall approach to analysis, as discussed earlier, relies on a combination of several discourse analytic perspectives, including critical discourse analysis (CDA) (Wodak, 2011), interactional sociolinguistics (Gumperz, 1982), and some aspects of Systemic functional linguistics (Halliday & Matthiessen, 2004; Slade et al., 2008). As stated by Iedema and Wodak (1999), these approaches are among the most prominent linguistic and discourse analytical approaches to organizational research. CDA will allow us to link lexicogrammatical and interactional features of nursing interactions to the broader systems of knowledge, power, and social practice (Iedema & Wodak, 1999; Jones, 2013; van Dijk, 2003; Wodak, 2011); SFL will provide insights about the exchange of meanings (e.g., interpersonal and ideational meanings) between nurses as they deliver handovers; and Interactional Sociolinguistics will help us examine how nurses negotiate this social action by *contextualizing* their utterances and *positioning* themselves in relation to other interlocutors (Gumperz, 1982; Iedema & Wodak, 1999). In this proposed study, I do not argue for the superiority of any applied linguistic or discourse analytic approach, but rather I aim to use this combination of discourse analytic approaches to inform the analyses of the interactional data in this study and to reach a comprehensive analysis that can capture the nature and dynamic of nurse-to-nurse interactions during nursing handoff practice.

As mentioned in chapter 1, the numerous studies that have investigated nursing handoff relied primarily on ethnographic methods such as interviews, observations, and focus groups (e.g., Behara et al., 2005; Manias & Street, 2000; McFetridge et al., 2007; Payne et

al., 2000), or on quantitative methods such as surveys (e.g., surveying patients and nurses' perceptions and satisfactions of handoffs) (e.g., Anwari, 2002; Drach-Zahavy & Hadid, 2015). Although language is a vital component of handovers, these investigations have employed no discourse analytic perspectives, and therefore little is known about the actual language that is being used during nursing handover interactions. This study situates nurses' interactions within the professional and institutional practices (Iedema, 2005; Slade et al., 2015). It aims to understand what specific types of language features are being used by nurses. The exploration of the actual language used by nurses in the hospital setting will expand recent discourse investigations in medical interactions and its impact on patient safety in the context of healthcare settings. The remainder of this chapter presents the study's research design, setting, participants, data collection procedures, instruments, and data analysis procedures.

Research Design

This study is guided by discourse analytic approaches to examine naturally occurring spoken interactions among nurses in handoff interactions in two hospitals in Saudi Arabia. To date, investigations on nursing handoffs have primarily focused on examining the environments in which handovers occurred (Behara et al., 2005; Buss, 2006), surveying patients, nurses, physicians, and health alliances' perceptions and satisfactions of handovers (e.g., Anwari, 2002); and little has been done to examine the actual language use in these handovers (Eggins & Slade, 2012; Slade t al., 2015). Since this study aims to fill in this gap in research, collecting authentic interactions among nurses is invaluable.

The use of authentic interactions has become a vital data collection method in discourse analytic research (Jaworski & Coupland, 2006; Jones, 2011). In comparison to other ethnographic methods, such as field observations, field notes, and interviews which

have been widely used to examine nursing handoff practice (e.g., Buss, 2006; Payne et al., 2000; Manias & Street, 2000), collecting naturally occurring spoken interactions will allow us to explore and examine various ***spoken discourse features,*** such as grammatical, semantic, interactional, disfluency features, and the like (Cutting, 2011). Such spoken features, if not mechanically recorded, can be easily overlooked, modified, lost, or even forgotten as other methods, such as ethnographic methods, are solely employed. As Cutting (2011) points out, while ethnographic approaches to workplace research provide supplementary data sources, "the prevailing data collection methodology in workplace discourse research involves recording naturally occurring talk in 'authentic' situations" (Cutting, 2011, p.186).

For this study, authentic spoken interactions were collected from two hospital settings focusing explicitly on end-of-shift, verbal handovers, which commonly take place in hospitals' in-patient wards, where patients are hospitalized over a period of time for medical investigations and procedures. As such, the primary source of data in this study will be audio-recorded nurse-to-nurse interactions in two hospitals in Saudi Arabia. These primary data sources are supplemented by secondary data sources including observations, field notes, and short surveys.

Setting

Most countries around the world, if not all, have grown increasingly multicultural in their populations. Saudi Arabia is one of the countries which hosts people from all around the world, including workers in the industrial and healthcare systems. The healthcare system in this country, represents one of the places in which international healthcare professionals work side by side with Saudi healthcare professionals to serve the Saudi population. Data for this study were collected at two hospitals in Jeddah, Western Region, Saudi Arabia. The choice of these particular region was based on my familiarity with the context, and my work

connections with one of the hospitals' administration. The first site is the National Guard Hospital (NGH). There are three main branches of National Guard hospitals in Saudi Arabia: one in Al-Riyadh (central region), one in Al-Ahsa (eastern region), and one in Jeddah (western region). This study was carried out at the National Guard hospital in Jeddah (also known as King Abdulaziz Medical City). The hospital was established in July 1982, with the goals to provide medical care services for the Saudi population in the Western Region, and to preserve excellence in the quality of services presented to those patients. The NGH is part of the continuous rapid development of the healthcare system in Saudi Arabia. Like the other branches, it has recently launched a series of medical projects including: the cardiology center, the nursing and medical colleges, the out-patient clinic center, the grand expansion of all ER facilities, the grand expansion to Princess Norah oncology center, the bone marrow plantation center, and the burns unit. As a result, National Guard hospitals are often referred to as *medical cities*, because besides the hospitals, each location contains many other medical projects, such as medical and nursing colleges (I personally work in the nursing college in Jeddah), research centers, compounds, and the like.

The second site is King Fahad General Hospital (KFGH) which is also located in Jeddah, Western Region. However, unlike NGH which is a private sector, this hospital is open for the public, meaning that the health services are provided for all Saudi and non-Saudi patients. KFGH was established in 1980 to meet the growing needs to serve patients in the Western Region. It is one of the largest and most advanced hospitals in the Western Region and which is sponsored by the Ministry of Health. In this study, the NGH was the first feasible choice for this research as I work in the Nursing College and have my connections in this setting; however, due to an unpredicted delay in accessing this site, I requested an access to the second site, KFGH. As will be explained later in this chapter, I eventually had access to

both sites. Consequently, I decided to explore nursing handoff interactions in both sites to get a general overview of how nursing handoffs are conducted in private and public hospitals.

Both sites (NGH and KFGH) are staffed by both Saudi and international healthcare professionals who come from all around the world to work in the Saudi health organizations. The international health professionals bring with them diverse languages, religions, cultural values, beliefs, behaviors, etc. to work in a society that is highly religious and oriented towards Islamic values and beliefs. This cultural and linguistic diversity in these health settings provides a unique opportunity for examining how people from various cultural environments and language backgrounds work and communicate together to deliver healthcare services.

Nursing Services at NGH and KFGH Hospitals

Nursing services at Saudi hospitals are considered a crucial element of the healthcare delivery practices. The quality of nursing services impacts the quality of patient care and safety. With this vital and significant role, nurses in this workforce are constantly under pressure to excel. Hospitals are assessed by quality organizations such as the Joint Commission International (JCI) – which is a non-profit organization that works to improve patient safety and the quality of health care in international health organizations and address all dimensions of accreditation, quality care, and patient safety- that is to ensure the quality of all healthcare services in the Saudi hospitals, including the nursing services. All nursing workers, represented by leaders, managers, and all levels of staff within nursing, are expected to be competent in the delivery of quality healthcare and the utilization of safety principles, processes, and tools in this hospital.

Participants

Nurses

Research supported by the International Council of Nurses (ICN), Royal College of Nursing (RCN), and the World Health Organization (WHO) has referred to global shortages of nurses, which is considered as an increasing challenge in many industrialized as well as developing countries (Buchan, 2002; Buchan et al., 2003; Flin et al., 2009). According to the ICN reports, the increasing demands for healthcare as well as the diminishing supply of nurses in most countries means that many countries face continuous nursing shortages (Flin et al., 2009). This explains the growing trend for the international recruitment of nurses, who usually come from countries like the Caribbean, Philippines, the Republic of South Africa, Ghana, India, and many other Middle East countries (Aldossary et al., 2008; Flin et al., 2009). The United Kingdom, Saudi Arabia, New Zealand, and Australia are reported as the most common destinations for emigrating nurses, especially nurses from the Republic of South Africa (Buchan et al., 2003).

The Saudi Arabian healthcare system, which is largely served by the foreign labor force, currently hosts over 110, 858 nurses who have been recruited from all around the world and who are not necessarily native speakers of English, or Arabic (Almutairi et al., 2014; Luna, 1998). Hence, the healthcare system in Saudi Arabia represents an interesting multicultural environment where most of the patients and their families speak only Arabic, while the majority of healthcare professionals, including nurses, do not speak Arabic, and use English as the primary medium of communication (this explains the presence of translators in all clinics, wards, departments, etc. inside the Saudi hospitals). Additionally, nurses in this setting are not only delivering healthcare services to patients from a different culture and language background from their own, but they also communicate with other nurses and health

professionals who come from a variety of cultural and linguistic backgrounds. In other words, in this setting, while all healthcare professionals and nurses use English, may do not speak English as their first, second, or even heritage language.

Turning to the dataset, both National Guard and King Fahad General Hospitals host international nurses who come from various countries seeking job opportunities. International nurses in both sites in this study represent the majorities of the nursing workforce, and there is a great reliance on their services. Based on field observations and short surveys (which were administered at the end of each nursing handoff shift), the staff nurse participants in this study come from various countries including Philippines, Indonesia, India, Malaysia, Morocco, South Africa, Egypt, Jordan, as well as a few nurses are from Saudi Arabia (this is due to the current shortage of national, qualified nurses in Saudi Arabia). Staff nurses are defined as those registered nurses who are employed by a medical facility, and work as members of the ward team. Table 3 (below) represents some of the main demographic information about the staff nurses in this study. It should be noted that due to time and logistical constraints only 63 nurses were able to complete the background questionnaires. As summarized in Table 3, and based on observation notes, in both sites, the majority of the participants were from the Philippines. These participants reported Tagalog, Cebuano, and English as their first language. The second largest group of the participants were from Malaysia, India, and Indonesia, who reported Malay, Tamil, and Indonesian as their first language, respectively. The rest of the nurses were from Jordan, Morocco, and Saudi Arabia, and these reported Arabic as their first language. Thus, the dominant group of nurses in both sites speak a first language other than English, yet English is their medium of communication in these workplaces. Additionally, the participants in both sites are predominantly female; consequently, only seven male nurses appear in this dataset.

Other information gathered via the survey was specific to participants' competency in Arabic. Based on the nurses for whom information was fully available via the background questionnaires, most of the participants reported their competency in the Arabic language as either "none" or "poor." Only two Filipino nurses reported "medium" competency in Arabic, and none of the nurses reported "advanced." These findings are taken into consideration in the data analysis and the interpretation because code-switching into Arabic which occurred as an interactional feature in this dataset with greater frequency than anticipated.

A total of five head nurses also participated in this study, four were from the NGH and one was from KFGH. Head nurses are defined as those nurses who are administratively responsible for a designated hospital unit or ward on a 24-hour basis. The head nurses were from South Africa (1), Philippines (1), Saudi Arabia (2), and Morocco (1). Both the South African and Filipino head nurses reported English as their first language, the Saudis reported Arabic as their first language, and the Moroccan reported Moroccan Arabic as her first language. All the head nurses were females. No further information about the head nurses was gathered.

Head nurses and staff nurses are both participants in the nurse-to-nurse handoff interactions in this study. While staff nurses produce the bulk of the discourse in the handoff interactions (as the departing staff nurses are the ones who transmit patients' information to the incoming nursing team), head nurses, due to their administrative position, are the ones who are in the position of power than staff nurses. Consequently, this creates the asymmetrical relationship between the participants in this study. The overall asymmetry between the participants, head nurses vs. staff nurses, and its impact on the nursing handoff interactions will be explored in research question four in this study.

Table 3.

General Demographics of Participants

Research Site	Nurse Rank	Country of Origin	Native Language	Gender	Age	Length of work in Saudi Arabia
NGH	Staff Nurses*	Philippines (N= 15) Malaysia (N= 10) India (N= 3) South Africa (N= 1) Saudi (N= 4) Jordan (N= 1)	Tagalog (N= 13) Cebuano (N= 1) English (N= 2) Malay (N= 7) Bahasa Melayu (N= 3) Tamil (N= 2) Malayalam (N= 1) Arabic (N= 5)	Female (N= 28) Male (N= 6)	20-30 (N= 8) 30-40 (N= 13) 40-50 (N= 6) >50 (N= 3)	< 1 year (N= 5) 1 – 10 (N= 18) 10 – 20 (N= 6) > 20 years (N= 1)
	Head Nurses	South Africa (N=1) Philippines (N=1) Saudi (N=2)	English (N=2) Arabic (N=2)	All Female	N/A	N/A
KFGH	Staff Nurses*	Philippines (N= 10) Indonesia (N=4) India (N=5) Jordan (N=1) Saudi (N=9)	Tagalog (N=10) Indonesian (N=4) Bengali (N=3) English (N=2) Arabic (N=10)	Female (N=28) Male (N= 1)	20-30 (N= 23) 30-40 (N= 6) 40-50 (N= 0) >50 (N= 0)	< 1 year (N= 12) 1 – 10 (N= 16) 10 – 20 (N= 1) > 20 years (N= 0)
	Head Nurses	Moroccan (N=1)	Arabic (N=1)	All Female	N/A	N/A

Note. *The information in this table represents the participants who agreed to complete the survey.

Patients

This study focuses solely on nursing handover interactions among nurses; thus, patients are not involved in any way in this study. For reasons of confidentiality, all patients' information, including names, age, file numbers, etc. were removed from the transcribed data. Also, I did not interact with patients or their families in any way; therefore, no informed consent forms for patients were necessary.

Honorarium

As recognition for their willingness to participate in this study, at the end of each handover shift, all nurses (incoming and departing) received an honorarium of $10 international calling gift cards.

Institutional Review Boards and Participants' Consent

Since the research was conducted in two hospital sites in Saudi Arabia, three institutional review boards' (IRB) approvals were obtained. The first IRB approval was sought from the University of South Florida. I began the IRB process after the study's proposal was approved on March 2016. I followed all the required procedures which also included obtaining participants' informed consents which all participants were required to sign prior participating in this study (See Appendix A for USF-IRB approval letter). After obtaining the USF IRB approval on May 6, 2016, I immidiately began the process of obtaining the National Guard Hospital's IRB and site access approvals. I followed all the required procedures in this site; however, the process from this hospital was delayed for several months. Finally, on September 29, 2016, I was granted access to the site (see Appendix B for NGH- IRB and site access approvals). During the delay time from NGH, I applied at the Ministry of Health in Saudi Arabia to grant me access to King Fahad General

Hospital. I pursued all the required procedures in the Ministry of Health as well as King Fahad General Hospital. On November 1, 2016, I received the approval to access the site for data collection (See Appendix C for KFGH- IRB and site access approvals).

Data Collection and Instruments

Primary Data

As discussed earlier, the data in this study comes from two different hospitals in Saudi Arabia, one is a private sector (NGH), and the other one is a public sector (KFGH). The primary data source consists of audio-recordings of naturally occurring interactions between nurses during nursing hadoffs in both hospitals. The interactions were recorded with an advanced digital audio recorder (Olympus LS- 14 Linear PCM digital voice recorder). In NGH, I recorded the entire handoff shifts which I observed (each handoff shift lasts 60 to 80 minutes and included a maximum 20 patient handoffs). In KFGH, I only recorded the bedside handovers which I observed in each handover shift I attended (each handoff shift lasts 30 to 40 minutes and included a maximum 20 patient handoffs). For the data collection process, I observed and recorded handoff interactions from various shifts (morning, night, and afternoon) as well as various wards at both sites. This sampling strategy ensured a representative sample of nurses and avoided collecting data from the same nursing team twice.

The entire dataset consists of 80 transcribed nursing handoff interactions: 65 handoffs were collected from the National Guard Hospital and included the following wards: Intensive Care Unit (ICU), Oncology-Pediatric, Oncology-Palliative Care, General-Pediatric, and Surgical wards. And 15 handoffs were collected from King Fahad General Hospital and included the following wards: Urology, General-Adults and Ear-Nose-Throat (ENT). These data were collected over two months: November 2016 and December 2016. In the original

study's proposal, I had anticipated collecting 64 to 160 handoff sessions; however, due to the unexpected delays in accessing the research sites as well as the challenges associated with the transcription process (which I will explain in more detail), I was able to transcribe only 80 handoff interactions. Transcribing this type of discourse proved to be extremely challenging. The process of transcription is notoriously time consuming, but these data proved especially challenging due to the following factors: a) background noise (e.g., the night and afternoon shifts corresponded with the family visiting hours, and since handoff shifts are conducted in the wards' corridors or at bedsides, besides the handoff interactions, the audio recording caught all the background noises); b) prosodic features; c) medical terminology and jargon. These factors slowed down the transcribing phase and made it very challenging. Various recorded handovers, for example, had to be removed from the dataset due to poor sound quality or background noise.

Every time I met with the nurses inside the hospital sites, I followed the same data collection procedures. For example, every time I went to data collection, I made sure to be at the ward 15 to 20 minutes prior to the handover shift. I first met with the head nurse, who then introduced me to the nursing team. I introduced myself, the purpose of the study, and the process of the informed consent forms. All nurses who I approached were willing to participate in the study and all of them received the honorarium gift cards.

As mentioned earlier, in NGH wards, I recorded the handover shift from the beginning (that is, when the head nurse announces the beginning of the handover shift) until the end (that is, when the head nurse declares the end of the handover shift). However, in NGH-Intensive Care Unit and in KFGH wards, where handoffs are conducted at bedsides, I only recorded 4 to 6 handoffs from each shift that I observed. Below, I provide a brief description of typical handoff processes at both sites. Moreover, in Appendix D, I provide four entire handoff interactions: two from NGH (one from ICU and one from Oncology-

Palliative ward) and two from KFGH (one from Urology and one from ENT wards). These samples are representative of each site and illustrate typical entire nurse-to-nurse handoff interactions at NGH and KFGH, respectively.

Based on field notes at the National Guard Hospital, the following steps demonstrate how a typical handoff shift starts at NGH wards.

1. Around 8:00 a.m., both incoming and departing nursing teams (6 to 8 nurses in each team) gather in the ward's corridor. It takes about one to two minutes to do so. Each team takes a side of the corridor. Once the head nurse joins the meeting (only one head nurse in each ward, and head nurses in Intensive Care Units do not particiapate in the handoff sessions), she distributes a written guide which contains a summary of patients' information (See a sample in Table 4). Based on field observations, the departing nurses fill in this handoff guide electronically prior to the handoff shift time and then print it out and distribute it to the whole team.
2. The head nurse greets both teams, declares the beginning of the handoff session, and requests the departing team to start.
3. The departing team takes turns in "handing over" (that is, presenting) patients' detailed information to the incoming team. In other words, the departing nurses who were responsible for patients in Room 1, for instance, will take turns to hand over patients' information in this room. This process goes room by room. So, if there are four patients in Room 1(the number of patients in each room varies- each room may contain 4 to 6 patients), departing nurses, who were responsible for those four patients, take turns to deliver the handoffs about those patients. When handoffs for this room finish, both teams, and the head nurse go inside this room, check on the patients and introduce the new team of nurses to them. Once both teams exit Room 1, the departing team starts the handoffs procedures for the next room.

4. This process is repeated until all handoff sessions are completed (each session might take 2 to 5 minutes per patient). Then, the head nurse declares the end of the end-of-morning shift handoff. The whole handoff shift takes an hour to an hour and fifteen minutes, depending on the number of the patients in each ward. From what I observed, some handoffs were mostly *monologic*; that is the nurse delivered the handover with no interruptions from the other nurses or the head nurse; other handovers were *interactive*; that is when the head nurse invited interaction by commenting, asking questions, etc.

Table 4

A Sample of Handover Chart at NGH

Date 00/00/0000	Day	Ward # Clinical Handover Sheet										# Patients					
Room # Bed #	Name		MRN	File #	Gender		Age					Alert	STABLE				
Diagnosis						Code Status						Source of admission					
Past history												TO DO					
Admission history																	
DOA		chemotherapy			Cycle		Day										
MRP		Anti-Microbial				culture											
Eligibility		Transfusions				IV access											
Isolation		Input		Output	I&O hourly trends							Discharge Plan					
Procedures																	
Allergies			Referrals														
Activity		Diet		Baseline HB		Baseline BP		Lab works results									
GCS	weight	Height	Braden	MEWS	Temp	HR	Sat	RR	BP	O2	Pain	HB	Plt	ANC	K	NA	MG
00/15	00.0	00	00	00	00	00	00%	00	00	00	00	00	00	00	0	00	00

Handoff shifts at King Fahad General Hospital, on the other hand, are conducted at patients' bedsides and nurses are required to follow the standardized SBAR handoff protocol as they deliver the handoffs. Unlike NGH, the nursing handoff shifts in this hospital are held three times a day, meaning every eight hours. Consequently, KFGH has a morning, afternoon and night nursing shifts. Based on field observations, each room in the observed wards was shared by a minimum two patients. Prior to shift change, I observed incoming nurses arriving to the nursing station and quickly joining the departing nurses. Based on field observations, each departing nurse picks up a patient's file from a trolley in the corridor (in each ward,

there was a wheeled disk where patients' files are kept). Then, the departing nurse, accompanied by one or two incoming nurses, enters the patient's room, and begins the nursing handoff at the patient's bedside. During handoff interactions, patients are not addressed in any way. Out of the 15 handoffs that were collected from this hospital, only one departing nurse greeted the patient before beginning the handoff session. Additionally, unlike head nurses in NGH-wards, head nurses at this site do not join the handoff process.

Secondary Data

Two additional data sources were utilized: short background questionnaires and observation field notes. As mentioned earlier, nurses in this setting are mostly international nurses who represent various countries and cultural backgrounds. Therefore, it was important to obtain some basic demographic data about the participants. To ease the process on the participants, the survey instrument was short. It included 10 questions which gathered basic information about nurses' backgrounds, including their age, country of origin, language background, years of experience, and competency in the Arabic language (see Appendix E). The surveys were distributed immediately after each handoff session in both sites. However, only 63 (33%) participants completed the survey. While this response rate is quite low, it is not surprising given the time pressures and constraints faced by nursing staff at both sites. Nevertheless, the survey's results contributed to the analysis in several instances as will be explained in chapters four and five.

Validity and Reliability

Using a theoretical framework to frame interpretations can help to support and strengthening these interpretations (Savin-Baden & Maggi, 2013). So, to establish the validity of this project, in which I interpret and make sense of the language use by nurses during nursing handoff interactions, I use multiple discourse analysis approaches as framing which

guides the analyses and data interpretations. Additionally, I use the extensive body of literature on language and medicine, not only to draw connections and support my interpretations, but also to highlight the uniqueness of the contributions of this study and how it advances the field. Furthermore, as will be demonstrated in the data analysis chapters, I supplement my analyses, arguments, and interpretations with several examples from the large authentic dataset which comes from the two research sites. As discussed earlier, each of the two sites (private and public) could be representative of the two major types of hospitals in Saudi Arabia. Consequently, the findings of this study could provide various fruitful insights into how nursing handover interactions are carried out in private and public hospitals.

To further ensure the quality of this research, the data analyses and interpretations rely on multiple sources (Savin-Baden & Maggi, 2013; Patton, 2002). As explained in this chapter, to supplement and inform the analyses and interpretations of the primary source (i.e., transcribed recordings of authentic nurse-to-nurse handoff interactions), a secondary source of data (background questionnaires, field observations and notes) has been utilized. For example, the analysis will demonstrate how the background questionnaires informed the interpretations of code-switching, which emerged as a distinctive interactional feature in this setting. Additionally, the analyses of various handoff interactions will demonstrate the importance of field observations to justify the intensity of certain situations that happened during the interactions. This triangulation of data sources helped me to increase the credibility and validity of my claims and interpretations.

My Role as Researcher

My three-years' prior working experience as a Unit Assistant at the National Guard Hospital, which included working closely with nurses as a translator between doctors, nurses and the Saudi patients, privileged me with the insider knowledge regarding how nursing work

is being conducted in the hospital setting. Additionally, my teaching experience at the Nursing College and working closely with nursing educators and nursing students familiarized me with the challenges that nursing educators experience, specifically in training Saudi novice nurses and preparing them to be competent professionals in the Saudi Arabian healthcare system. From the onset of this study- and even before- it was always my desire to help improve nursing services in this setting.

Pursuing doctoral studies in the field of Applied Linguistics and gaining expertise in various types of Discourse Analysis led me to this research investigation. It provided me with the knowledge needed to examine this type of nursing discourse with a more objective manner. Thus, as a researcher, my aim of this study is to provide insights into one of the important practices that nurses do in these settings; that is, the nursing handoffs. With the various available investigations on this topic, up to date, no studies have examined the actual language use in this type of interaction in this setting. Thus, my hope is that the use of discourse analysis approaches will shed light on this nursing discourse to help us better understand it perhaps also to illustrate how handoff interactions might be improved.

CHAPTER FOUR:

DATA ANALYSIS

Nursing handoff (or 'handover,' or 'endorsement') – the transfer of information (about patient care), professional responsibility, and accountability between departing and incoming nurses at shifts change (Slade & Eggins, 2016; Riesenberg et al., 2010; Manser et al., 2010; Segall et al., 2012; Wood et al., 2014)- is one of the dynamic, complex, and pivotal communicative practices that take place in hospital settings. As the analyses will show, the data in this study further demonstrates the significance of this verbal, face-to-face interaction in ensuring patient safety and preventing undesired adverse events.

As explained earlier, the data in this study comes from various morning, night, and afternoon shifts at two hospitals: National Guard Hospital (NGH) and King Fahad General Hospital (KFGH) in Jeddah, Saudi Arabia. The handoff shifts occurred in various wards including Intensive Care Units (ICU), Surgical, Oncology-Pediatric, Oncology-Palliative Care, General-Pediatrics, Genral-Adults, Urology, Ear, Nose, and Throat (ENT) wards. Consequently, the 80 nursing handoff interactions cover various health topics. In this chapter, I will explore in greater depth these nursing handoff interactions to address the study's first and second research questions. Consequently, this chapter is divided into two major sections, each section will cover the analysis and answer of one of the two research questions.

Prior to the data analyses presentation, I provide a detailed description of how I will present the data excerpts in this study. As seen in the sample excerpt (below), each handoff excerpt will contain an underlined header which consists of the excerpt's number (as they

appear in this study), the time of the shift in which this excerpt occurred (e.g., morning, night, afternoon shift), the name of the hospital (NGH- refers to the National Guard Hospital and KFGH- refers to King Fahad General Hospital), and the ward in which this handoff took place.

Sample Excerpt # (Morning Shift) NGH- Surgical Ward

Line	Speaker	Discourse
1	Nurse	Because one, one:: one patient, that patient.
2	HN	Room 4 .. Okay.
3	Nurse	Yes. I start read 1- 4, first .. it's room 1, bed 4, <patient's name>
4		<File Number> 40 years-old male under Dr. <Doctor's Name>
5		THIS patient's diagnosis is polytrauma, fracture humerus,
6		multiple fracture of pelvic, and provoked PE .
7		This patient uh no medical surgical history

Note:
Polytrauma: A patient who has been subjected to multiple traumatic injuries.
Fracture humerus: A break in the lower end of the upper arm bone.
Provoked PE: An obstruction of a blood vessel in the lungs.

Additionally, as seen in the sample excerpt (above), each excerpt consists of three basic columns: 1) line number (line numbering coincides with the line numbers of the main transcript, each handoff shift starts with a new numerical order), 2) speaker identifier (marks the beginning of speaker's discourse) and; 3) speaker's discourse (speaker's discourse which exceeds a line continues onto the next line). It is important to point out that each ward in both sites (NGH and KFGH) is supervised by one head nurse. Based on field observations, the number of nurses in each shift was around 6 to 8 nurses in each team at NGH, and 10 to 12 nurses in each team at KFGH. I use speakers' identifiers as follows:

- *Nurse* is used for the departing nurse who is producing the handoff
- *HN* is used for the head nurse
- *IN (#)* is used for any nurse from the incoming team
- *OUT (#)* is used for any nurse from the departing team
- *DOC* is used for a doctor.

Finally, as seen in the sample excerpt (above), some excerpts may end with notes directly underneath (as needed). The purpose of these notes is to facilitate reading comprehension and provide convenient explanation of any medical terminology and jargon which appeared in the handoff interactions. I use *The Free Dictionary's Medical Dictionary*, which provides authoritative definitions and descriptions of healthcare terminology, as the main reference source for these notes. The transcription conventions I used in this study follows Jefferson (2004) (see Appendix F for conventions and description).

Research Question One

This section will address research question one (*What is the overall structure of nursing handoff in those settings?*). Because of the Systemic procedural differences which were observed at the two sites, this section is divided into two major parts; one is devoted to inductively analyzing the handoff data from the National Guard Hospital (NGH), and the other is devoted to deductively analyzing the handoff data from King Fahad General Hospital (KFGH).

In part one, I will thoroughly explore nursing handoff interactions at the National Guard Hospital to identify the overall structure of these interactions in this site. It is important to point out that: 1) the majority of my data come from this hospital, and 2) unlike KFGH, which follows the well-known standardized SBAR[1] handover protocol, the NGH does not follow any of the available standardized forms. Instead, nurses at NGH follow a locally formulated handoff chart to guide the handoff interactions. As such, little is known about the phase structure of nursing handoffs in this hospital. Thus, this section aims to inductively identify and describe the internal structure of nursing handoff at NGH, which later could be

[1] Chapter one includes a detailed description of the standardized SBAR handover protocol.

useful for training purposes and to supplement teaching materials in nursing contexts in similar settings, such as NGH branches, and Nursing Colleges in Saudi Arabia.

National Guard Hospital

At the National Guard Hospital (NGH), nursing shift-changes are administered in the hospital's wards corridors – long narrow passageways inside the hospital with doors that lead to patients' rooms on each side. At Intensive Care Units (ICU), however, the shift-change is administered at patients' bedsides, rather than in corridors. As mentioned earlier, nurses in this hospital do not use any of the available standardized handover protocols to guide nursing handoffs. However, based on my field observations, in all wards, nurses follow a brief, detailed written handoff chart (shown previously, in Table 4) which they electronically prepare prior to handoff time, and then print out to guide the handoffs. In the ICU, on the other hand, nurses fill in an electronic handoff form[2] to guide the handoffs (nurses use tablet screens as they deliver the handoff).

So, prior to the end of the shift, in wards and ICU, each nurse is required to fill in a handoff chart for each patient whom he/she has handled during morning or night shift. Then, nurses, both departing and incoming, use these charts to guide and to follow the handoff interactions. Table 4 (above) illustrates the specific information that nurses, in wards, need to complete and refer to, as they produce handoffs. Overall, the data from this hospital shows that nurses utilize the same Systemic structure in conducting nursing handoffs across the hospital wards. Below, I provide a detailed presentation of the structure of handoff in the National Guard Hospital wards.

[2] I was not granted permission to view this online handoff chart.

Structure of nursing handoff in NGH. As discussed in chapter one, research on the handoff have identified various standardized approaches to handoff interactions, which are considered tools to improve the quality of this interaction (examples are outlined in chapter one, Table 1). Since NGH follows its "in house" handoff chart, I utilized this handoff chart to examine and identify the content and stages of nursing handoff in this setting. In the following section, I will demonstrate how I identified the stages of these interactions. Additionally, I will provide examples from the data to illustrate the content and function of each stage in the handoff interactions. The provided examples for each stage represent the typical kind of interaction that most nurses produced at these stages in the entire corpus from NGH.

To begin with, nursing handoff shifts (in various wards and the ICU) start at seven in the morning (for morning shifts) and seven at night (for night shifts). It is a continuous, Systemic interaction that happens on a daily basis (weekdays and weekends) all year-round. Based on field observations, I found that nursing handoffs in this hospital vary in hospital's wards and ICU. For example, in hospital wards, the beginning of the whole handoff shift is marked by the gathering of both incoming and departing nursing teams in the ward's corridor as they wait for the presence of the head nurse, who is usually the person who declares the beginning of the handoff shift. In the ICU, however, based on my field observations, head nurses are present but do not participant in the handoff interactions. The handoffs are conducted at patients' bedsides between two nurses only, one is the incoming nurse, and the other is the departing nurse for each patient. Also, handoffs in the ICU are extremely detailed and long (one handoff interaction may take up to 15 minutes), while handoffs in the hospital wards are quite dynamic and rapid (the average handoff is approximately 2 minutes, this make sense because of the assigned time for the handoff shifts which should not exceed an hour). For the first research question, the analysis will focus mostly on handoffs that were

conducted in the hospital wards in order to get a more general view of the structure of handoffs in this hospital.

Turning to the dataset, the analysis revealed that the overall structure of nursing handoffs in this hospital consists of 6 stages: introductory stage, reporting stage, status stage, medication stage, recommendation stage, and closing stage. These stages are present in almost all of the nursing handoffs. The *introductory stage* is the only fixed stage that occurs at the beginning of all handovers, including the ones in ICU. Moreover, the *reporting stage* almost always follows the *introductory stage* in the handover interactions. The rest of the stages do not always occur in a linear order, meaning that nurses shift between the other stages. In the next section, I will examine the content of each stage, provide examples, and explain the function of each stage. Table 5 (below) provides labels for the main stages in column 1, provides the content of each stage in column 2, and provides language examples from the dataset in column 3.

Table 5.

Stages of Nursing Handoff at the National Guard Hospital's Wards

Stage	Content of stage	Sample of actual language
Introductory	Opening (Greetings/ announcement/ physical gesture)	*Good morning everybody, Room 15 <Patient's Name> MRN <file Number>*
	Patient information (Room Number[3], patient full name, file number, age, gender, in-charge Doctor	*it's room 1, bed 4, <Patient's Name>, <File Number> ,40 years-old male under Dr. <Doctor's Name>*
	Diagnosis	*THIS patient's diagnosis is polytrauma, flecture humerus, multiple fracture of pelvic, and provoced PE.* *A case of left hip infected wound.*
	Medical history	*This patient uh no medical surgical history.* *Past history of left femur.*
	Admission information (reason, date, etc.)	*Admission he came to the ER because of hit by the car . Admit on the 21st October.*

[3] Only in wards. In ICU handoff is delivered at bedside.

Stages of Nursing Handoff at the National Guard Hospital's Wards (Continued)

		Source of admission came from ER.
Reporting (PPPP)	Procedures done since admission/ doctors' orders	*He is on day 67 incision and drainage of left hip abscess.* *He was consented, chemo started two days ago.*
	Procedures done by the nurse during his/her shift	*I changed the dressing, there's no signs of infection.* *Today's dose is given already.*
	Plan of care	*For the day his second dose are today at 5 p.m. and then they will change.* *They are going to do the ultrasound repeat today.*
	Patient complaints	*During night time complain of abdominal pain.* *He had nausea and vomiting in the chemotherapy.*
Status	Patient status, GCS,	*This patient is very much self-caring, no more fever at all.*
	Blood works results, Diet, Fluid balance record-(Intake/Output)	*Activity as tolerated, GCS of 15/15 and diabetic diet.*
Medication	Information related to patient medication	*This one on IV Cefazolin q 8 hourly.* *He was on triple therapy antibiotics.*
Recommendation (To Do)	Directions for the incoming team	*He's also booked for blood works today; it's not collect.* *Uh, just check with them if they want to do x-ray.*
Closing	Signs of end of handoff	*Okay, that's him.* *Nothing left, /khalas/ [i.e., 'that's it/Done/No more'].*

Introductory stage. As mentioned earlier, the *introductory stage* occurs in all handoff interactions (including handoffs in ICU) making it an obligatory, fixed stage of nursing handoff in this hospital. This stage comprises five sub-phases that mostly occur linearly (as presented in Table 5) in all the handoffs. The first sub-phase is the *opening* which includes greetings (e.g., *good morning, good evening, hi*), announcements (e.g., *I will endorse room*), and/or nurses' physical movements inside the handoff circle when they start handing off patients (e.g., moving to the center of the group or next to the head nurse). This *opening* sub-phase is followed by the *patient information* sub-phase in which the nurse announces information concerning the patient's room and bed numbers followed by his/her identification (e.g., patient full name, file number, age, gender) and the name of the doctor who is in-charge of the patient. Next, the *diagnosis* sub-phase which includes information

about the patient diagnosis (e.g., the *case of CA pancreatic*). And lastly, the *medical history* sub-phase which includes information about patient past medical history (e.g., previous diagnoses, complaints, medications, surgeries, etc.). Only a few handoff interactions include a fifth optional sub-phase which includes information concerning *patient admission information*, such as the reason for admission (e.g., *admission he came to the ER because of hit by the car*). Based on the data, this sub-phase occurs when patients are admitted via emergency room (ER). Consequently, all the sub-phases in this stage occur as compulsory components except the *admission information* sub-phase which is found to be an optional one.

Excerpt 1 (below) illustrates an *introductory stage* from a morning handoff shift at the surgical ward. Typical to most handoffs in this setting, this example illustrates how a female Filipino nurse opens her handoff with an *introductory stage*.

Excerpt 1 (Morning) NGH- Surgical Ward

		<begin of introductory stage>
410	Nurse	Good morning. Four, bed 3 is <Patient's Name>
411		Mr. <Name> <File Number>
412		Male uh 51 years-old, under Dr. <Name>
413		Case of fracture, sharp tibial with a fractured uh right tibial
414		He was involved in RTA three months ago
415		and he has a surgery done in the
416		last <inaudible> in Al-Baha Hospital and he is known there (better)
417		Hypertensive on medication
		<end of introductory stage>

Note:
Tibial: Pertaining to the largest long bone of the lower leg.
Hypertensive: An increase in blood pressure.
RTA: Road Traffic Accident.

As can be seen in Excerpt 1, the nurse opens the handoff with greeting *good morning*, directly followed by the patient's room and bed numbers, patient's full name, file number, age, gender, and the name of the in-charge doctor, lines 410 to 412. Then, the nurse proceeds with the diagnosis information, line 413 *case of fracture*, followed by patient's medical

history information, lines 414 to 417. The introduction of this basic information serves as an essential procedure to ensure correct patient identification and, hence, procedure matching and patient safety (WHO, 2007). Both diagnosis and medical history sub-phases add additional essential components of patient identification information.

The sub-phases in the *introductory stage* serve a critical function that is to establish a shared knowledge with the entire nursing team about the patient's identity. The *opening* sub-phase presents patient's room and bed number; the *patient information* sub-phase presents patient's full name, age, gender, etc.; the *diagnosis and medical history* sub-phases introduce basic information about patient's health and; the optional *admission information s*ub-phase provides information about the source of admission. Together, these sub-phases establish shared knowledge about the patient's identity which will help to facilitate the exhaustive flow of patient information and care plans that will be introduced right after this *introductory stage*.

Reporting stage. In this dataset, the *reporting stage* always follows the *introductory stage*. The analysis revealed that this stage contains four sub-phases. These sub-phases encompass information related to: a) procedures that the patient has received during the time of admission or will receive soon; b) procedures that the departing nurse has done to the patient during the shift; c) plan of care that is assigned by doctors to the patient during the admission time; and d) patient's recent complaints and health-related issues. The analysis showed that not all those sub-phases are present in all handoffs; yet, the procedures sub-phases, (a and b), occur in all the handoffs in this dataset.

To illustrate, I provide Excerpt 2 which is produced by a male Filipino nurse during a morning shift in the surgical ward. This portion of the excerpt comes right after the *introductory stage* in this handoff.

Excerpt 2 (Morning) NGH- Surgical Ward

		<begin of reporting>
344	Nurse	This patient is uh:: day 6 already of uh for
345		left ankle incision and drainage
346		uh he was seen on the 6 by the ID (1.0)
347		an ID referral and then he was seen
348		by Dr. <Name>
349		Oka:y, they ordered CBC, CRPSR, uhm doing ESR
350		blood culture for Brucella done
		<end of reporting>

Note:
ID: An infectious disease specialist.
CBC: complete blood count.
CRP: C-reactive protein; a chemical in the blood that can be measured to indicate inflammation in the body and a person's risk of suffering a heart attack.
ESR: the rate at which red blood cells settle in a vertical tube, used to detect the presence of disease.
Brucella: Any of various aerobic, short, rod-shaped bacteria of the genus Brucella that are pathogenic to humans and domestic animals.

This excerpt includes only the procedures sub-phases. As shown in line 344, the nurse begins the stage by reporting to the nursing team a surgery that the patient has undergone at the time of his admission. The nurse then resumes with more information about the doctors' orders for this patient, lines 349 - 350. Then, in line 350, *done*, the nurse confirms to the team that he has completed all doctor's orders during his shift, thus, no further actions are required from the incoming team regarding doctors' orders.

The next example, Excerpt 3, is taken from the same morning shift in the surgical ward, this time with a female Indian nurse presenting to the nursing team the *reporting stage* of her handoff.

Excerpt 3 (Morning Shift) NGH- Surgical Ward

		<begin of reporting>
241	Nurse	He's on day 11 post-incision and wash up drainage of infected right
242		shoulder. And day 8, VAC application with 120 umm pressure .
243		ID seen, on tigecycline such uh
244		and they suggested for MRI- MRI shoulder.
245		But MRI uh:: was not done on the 6th of 11 due to patient has
246		Claustrophobia . Dr. <Name> seen the patient yesterday.
247		He booked the patient for CT scan shoulder, but uh no one called.
248		It's only booked in the system.
249		Seen also

250	YES, they referred also the patient for endocrine due
251	to the blood sugar.
252	It's uh:: in:: it's not in:: a uh ha:: a:: it's in (12) .
253	Then endocrine seen, Dr.<Name>, they add sitaglipin 100 milligram.
	<end of reporting>

Note:
VAC: Vacuum assisted closure- a procedure to help facilitate wound healing.
ID: Abbreviation for infectious disease.
Tigecycline: Glycylcycline antibiotic.
MRI: An image produced by magnetic resonance imaging.
Claustrophobia: An abnormal fear of being in narrow or enclosed spaces.
Endocrine: The secretion of an endocrine gland; a hormone.
Sitaglipin1: An oral diabetes medicine.

In this example, the *reporting stage* contains only one sub-phase; that is, *reporting procedures* that have been done to the patient since his admission as well as the doctors' orders for this patient. The nurse reports three procedures: 1) a surgery that the patient underwent during his admission time, lines 241-242; 2) the doctors' orders for this patient; including an MRI order, lines 243-246, which is delayed due to patient's claustrophobia, and a pending CT scan order lines 247-248; and 3) an endocrine referral, which was completed during her shift, lines 250-253.

Both Excerpts (2 and 3) represent typical reporting stages in this dataset. The analysis revealed that nurses tend to focus on reporting procedures which have been done either during patient admission or during nurses' shifts as well as on reporting doctors' orders. Thus, these sub-phases can be considered mandatory components of this stage. In fewer handoff interactions; nurses report issues related to the patient's plan of care and current patient's complaints, thus these sub-phases can be considered optional. So, the ultimate function of the *reporting stage* is to summarize the various actions and procedures taken so far with respect to the patient during the nurse's shift and during the patient's time of admission at the hospital. Similar to the *introductory stage*, this stage serves to ensure the shared knowledge between the nursing teams about every patient's case.

Status stage. Unlike the first two stages, the rest of the handoff stages in this dataset are much less linear. In other words, nurses tend to shift back and forth between the rest of handoff stages. I identified the boundaries of each stage based on the content, that is, the type of information clustered together, regardless of where it appeared in the handoff interaction.

The *status stage* is marked by information related to: 1) patient's health status during the nurse's shift (e.g., *night time uh no vomiting*), 2) patient's level of consciousness that is GCS[4] (e.g., *umm GCS of 14 to 15*), 3) patient's blood work results (e.g., *latest blood sugar is 12*), 4) patient's food diet type (e.g., *she can have clearly liquid diet*), 5) patient's physical activity status (e.g., *activity as tolerated*), and 6) patient's fluid balance record (e.g., *intake of uh 2070 output of 1800*).

The following excerpt, Excerpt 4 (below), is part of a night shift at the Oncology-Palliative Care ward. This example demonstrates how a male Jordanian nurse ends his handoff with the *status stage.*

Excerpt 4 (Night Shift) NGH- Oncology-Palliative Care Ward

		<beginning of status stage>
93	Nurse	(1.0) The uh GCS 14, patient is uh is very much self-caring, at all,
94		no more fever hemodynamically stable, Ephedrine.
95		The ONLY THING in his labs, uh his his getting
96		you know his A and C is getting low, neutropenic <inaudible>
97		Now, it's .63. So, I asked the team, they ordered for him 600 mcg
98		of GCSFs to be given stat only, which was given. (1.0)
99		He's on daily labs
		<end of status stage>

Note:
GCS: Glasgow Coma Scale in medicine, used to quantify a patient's level of consciousness.
Hemodynamically: Relates to blood flow or the circulation.
Ephedrine: A drug with a similar action to adrenaline but with a more stimulant effect on the nervous system.
Neutropenia: Neutropenia is an abnormally low level of neutrophils in the blood. Neutrophils are white blood cells (WBCs) produced in the bone marrow that ingests bacteria.
GCSF: Granulocyte Cell Stimulating Factor.
Stat: Referring to a diagnostic or therapeutic procedure that is to be performed immediately.
Labs: A popular 'short form' for laboratory work performed in a clinical laboratory

[4] At this hospital, nurses use this neurological scale to assess the level of consciousness in patients. The scale is out of 14 (14 indicates full consciousness).

In this example, the nurse discloses information about the patient's consciousness level, line 93 *the uh GCS 14*, which indicates that the patient is consciously stable. Then, the nurse proceeds with information related to the patient's health status, including the patent's physical movability, line 93 *patient is uh is very much self-caring,* and the patient's health condition during the nurse's shift, line 94 *no more fever hemodynamically stable*.

Then with a shift to a louder tone, stressed utterance line 95, the nurse gets the team's attention, *the ONLY THING,* towards some abnormal lab results which required doctors' attention. The nurse indicates that he already has informed the doctors' team about this issue, line 97 *so, I asked the team*. As indicated by the nurse in line 98, the doctors' team has acted upon this issue and prescribed a drug which according to the nurse *was given* to the patient, line 98. It is most likely that the nurse is the one who administered giving the drug to the patient, as it is part of nurses' duty. After a short pause, line 98, the nurse ends this stage of the handoff with a remark indicating that this patient is assigned for daily blood tests, line 99 *he's on daily labs*, which can be considered as an indirect recommendation to the incoming team, meaning that the nurse is alerting the incoming team about the patient's upcoming required blood tests.

As mentioned earlier, the *status stage* can occur at any point of the handoff interaction. As shown in Excerpt 4 (above) the nurse sums up his handoff with the *status stage*. With the analysis revealing that this stage discloses updated information about the current status of the patient, it serves a vital function. Informational, this stage ensures that the next team has the most up-to-date information about the admitted patients, so they can arrange the shift management plan accordingly.

Medication stage. Similar to the *status stage*, this stage may occur at any point of the handoff interaction. It encompasses a bundle of information related to patient medications and their administration times, including continuous or newly prescribed drugs, doses, dosage time, etc. as is evident in these data, it is the nurse's responsibility to administer patients' prescribed medications. Certainly, medication administration guarantees drug efficiency and ensures patient safety, which makes this stage another essential stage in handoff interaction.

I illustrate this stage in the following excerpt which is taken from a night shift at the Oncology-Palliative Care ward and is produced by a male Filipino nurse. The nurse introduces the *medication stage* in the middle of his handoff.

Excerpt 5 (Night Shift) NGH- Oncology-Palliative Care Ward

		<beginning of medication stage>
158	Nurse	And also, he's still on Albumin once daily with Furosemide
159		So regarding the anti-factor ten, the one that you endorsed
160		to me this morning,
161		according to Dr. <Name> no need for the anti-factor ten
162		because they excerpted it yesterday
163	IN-N	uh
164	Nurse	So, no need according to him; just continue the Enoxaparin, 90 mg
165		subcut rate 12 hourly, his portacath insert
166		He's still on IV antibiotic of Imipenem and also Fluconazole oral
167		uh also, What else? NO PRN of Hydromorphone.
168		He's on Hydromorphone 0.5 mg subcut six hourly
		<end of medication stage>

Note:
Albumin: A drug that works by increasing plasma volume or levels of albumin in the blood.
Furosemide: A medication used to treat fluid build-up due to heart failure, liver scarring, or kidney disease.
Imipenem: A beta-lactam antibiotic derived from thienamycin with broad spectrum activity used, in combination with cilastin, to treat various infections.
Fluconazole: A triazoleantifungal agent used in the systemic treatment of candidiasis and cryptococcal meningitis.
Anti-factor ten: Anticoagulants that block the activity of clotting factor Xa and prevents blood clots developing or getting worse.
Enoxaparin: A drug used in its sodium form in the prevention and treatment of deep vein thrombosis. Subcut: An abbreviation for subcutaneous; that is, medication situated, used, or introduced beneath the skin. Port-a-cath: A small medical appliance that is installed beneath the skin.
PRN: according to need/as needed.
Hydromorphone: A synthetic derivative of morphine.

As can be observed in this example, over several turns, the nurse introduces a thorough description of the patient's medications. The nurse starts listing the drugs which the patient is already taking, thus indicating the continuity of these medications, line 158 *he's still on Albumin once daily with Furosemide.* Then, the nurse resumes with a note that he received during his previous shift concerning *the anti-factor ten* drug request for the patient. He explains to the team that this request is no longer needed based on doctor's orders and that the patient will continue receiving the drug *Enoxaparin*, *90 mg sub cut rate 12 hourly*, lines 164-165.

It can be noticed here that the nurse provides a detailed description of the drugs, including its name, amount and time of the dose as demonstrated in lines 164 - 165, *the Enoxaparin, 90 mg subcut rate 12 hourly*, and line 168, *he's on Hydromorphone 0.5 mg subcut six hourly*. Consequently, the main function of this stage is to inform the incoming team with all information related to patient's medications, including any updates related to patient's medications.

Recommendations stage. The *recommendations stage* in these handoff interactions usually occur under the *To Do* column (see right-hand side of Table 6 below). In other words, the departing nurses are required to fill in recommendations and certain actions that need to be done by the incoming team[5]. The analysis revealed that, for the recommendations stage, the departing nurses tend to read what is listed in this column as they produce the handoffs.

Table 6.

A Sample of *To Do List*

Date 00/00/0000	Day	Ward # Clinical Handover Sheet								# Patients			
Room # Bed #	Name		MRN	File #	Gender		Age			Alert	STABLE		
Diagnosis						Code Status				Source of admission			
Past history										TO DO			
Admission history													

[5] As explained to me by a head nurse in one of the wards.

DOA		chemotherapy		Cycle		Day		6hr vital sign + oral care+ neuro obs, bleeding and aspiration precaution With soft collar while in bed & hard collar getting out of bed Daily dressing occipital, honey paste/bactigrass/tile with soft collar <u>Discharge Plan</u>											
MRP		Anti-Microbial		culture															
Eligibility		Transfusions		IV access															
Isolation		Input		Output	I&O hourly trends														
Procedures																			
Allergies			Referrals																
Activity		Diet		Baseline HB	Baseline BP			Lab works results											
GCS	weight	Height	Braden	MEWS	Temp	HR	Sat	RR	BP	O2	Pain	HB	Plt	ANC	K	NA	MG		
00/15	00.0	00	00	00	00	00	00%	00	00	00	00	00	00	00	0	00	00		

Here, I provide Excerpt 6 to illustrate the *recommendation stage*. This excerpt is part of a morning shift at the Surgical ward and is produced by a female Filipino nurse. The nurse is using the same chart which is illustrated in Table 6 (above) as she delivers this patient handover.

<u>Excerpt 6 (Morning Shift) NGH- Surgical Ward</u>

579	Nurse	And vital signs 6 hourly and oral care, neural obs
580		bleeding precaution and aspiration precaution
581		With soft collar while on bed and hard collar getting out of bed
582		And they were seen with Dr. <Name>and with <Name> and Dr. <Name>
583		Heal with soft collar and this needs a soft collar,
584		ideally, in the morning after
585		the morning care

Note:
Obs: abbreviation for observation.
Bleeding precaution: Reduction of stimuli that may induce bleeding or hemorrhage in at-risk patients.
Aspiration precaution: The prevention or minimization of risk factors in the patient at risk for aspiration.
Collar: a band that fits around the neck and is usually folded over

As can be noticed, and as is the case in most handovers in this setting, from line 579 to line 581, the nurse is reading aloud contents that are written in the *TO Do* column. For example, when the nurse says *and vital signs 6 hourly*, *and oral care* line 579, she indicates that the incoming nurse needs to check the patient's vital signs and administer oral care for the patient every 6 hours. Similarly, when the nurse says *neural obs*, line 580, and *bleeding precaution and aspiration precaution*, line 581, she indicates that the next nurse needs to observe the patient as he has an issue related to the nerve system, and to be aware that the patient is under bleeding and aspiration precautions, respectively. Then the nurse elaborates on the topic with

information which is not written in the handoff chart, in lines 582 to 584. Finally, she concludes this stage with extra information about the required daily dressing, specifying the time of administration *ideally, in the morning after the morning care*, lines 584-585. Again, this information indicates that the incoming nurse needs to administer the dressing in the morning.

So, based on the analysis, this stage of the handoff is a reporting stage which comprises the departing nurse recommendations and requests. Additionally, in this dataset, it was found that some nurses (20%) use implicit directives such as *he's also booked for blood works today it's not collect,* meaning that the patient is assigned for blood tests and those tests are not done yet. Other nurses (10 %) use explicit requests in the form of imperatives (usually preceded by hesitation markers and hedges such as "just") such as *uh the chemo is not yet so just follow up, uh just check with them if they want to do x-ray, just continue the same management*. The rest of the nurses tend to read the TO DO list, with or without minor elaborations on the recommendations.

Recommendations are very important in this type of practice – very likely that is why they are provided in two modes: written and spoken. In this dataset, the nurses' recommendations are guided by the TO DO list in the handoff chart. Though the nurses sometimes elaborate on their contents (20%), it appears that the majority (80%) tend to read this list for the incoming team. Consequently, this stage functions more as a reporting stage that encloses recommendations for the incoming team. Based on previous literature, the *recommendation* stage of the handoff is considered as the essence of the handover communication (Eggins & Slade, 2012; Slade & Eggins, 2016; Sandlin, 2007; Staggers & Blaz, 2013; WHO, 2007). This part of the interaction should include precise and clear requests, advice, and recommendations to the incoming team so that they can resume patient care efficiently (Eggins & Slade, 2012; Slade & Eggins, 2016). Eggins and Slade (2012)

stated that for the recommendations to be clear in handovers, it needs to be delivered in a form that specifies explicit actions for the incoming team. Consequently, since most of the recommendations (70%) found to be vague and not directive enough, this stage of the handoff interaction at NGH could be further improved by providing more clear advice and requests for the incoming team, instead of only reporting/reading the content listed in the TO DO list.

Closing stage. The *closing stage* is the last stage in the nursing handovers in this setting. Based on the analysis, this stage is quick, and lacks comprehension checks or openings for possible further questions by the incoming team. For example, 45% of nursing handoffs in this setting ended abruptly, meaning that the nurse physically leaves the center of the handoff session and moves to the side where the departing team is. To illustrate, I present Excerpt 7 (below), which is part of a morning handover at the General Pediatric ward and is produced by a female Filipino nurse.

Excerpt 7 (Morning Shift) NGH- General Pediatric Ward

82	HN	what did the doctor say <inaudible>?
83	Nurse	just I just informed the doctor <Name> he said <inaudible>
84		he will talk to the mother,
85		ALSO the mother he doesn't want, to touch the child
86		[inaudible crosstalk]
87		yeah, he is trying the whole night (2.0)
88		[ends abruptly- the second nurse starts a new handoff]
89	Nurse 2	endorsing then <Patient's Name> from ER admitted,
90		this patient vomiting investigation

Towards the end of the handoff, the head nurse asks a question in line 82 concerning a situation. The situation, as explained by the nurse, is about the difficulty of inserting the I.V cannula for the patient; hence, the patient's mother has refused the administration of any further trials. Consequently, the patient misses three doses of the assigned medication. The nurse responds to the question with a brief explanation of the situation, in lines 83-85. Then,

after a brief segment of crosstalk between the head nurse and the nursing team, the nurse reassures the team that the in-charge doctor is taking control of the situation. Then, after a short pause, at the end of line 87, based on field notes, the nurse physically moves back to the departing team side of the corridor. Similar to other examples in this dataset, this example demonstrates how the physical departure of the nurse marks the end of the handoff. The data also include an example in which the nurse leaves the ward right after finishing the handovers. Based on the field observations, this physical departure urges the next nurse to begin the next handoff and closes off any further questions.

The use of the Arabic phrase /*khalas*/, which is an equivalent to "that is it," "no more," "it is over," and/or "done" is another closing strategy that is occasionally (30%) used to end handoffs and to serve other meanings in this setting. Nurses frequently code-switch into Arabic and use the phrase /*khalas*/ to fill in various meanings, including, for example, '*the medication was given, /khalas/*,' '*the procedure was done/khalas/*,' '*I am done /khalas/*' and '*finished /khalas/*.' Nurses also use /*khalas*/ to mark the end of the handoff. For example, Excerpt 8 (below), is from part of a morning handoff at the Surgical ward. In this example, the male Filipino nurse uses */khalas*/, preceded by a short pause, to close his handoff, line 409.

Excerpt 8 (Morning Shift) NGH- Surgical Ward

402	Nurse	Uh Sulfasalazine, 1 gram (2.0)
403		PT was mobilized yesterday with two person assistance
404		OT he needs 18-inch wheelchair
405		Referred to social worker yesterday
406		He was seen by <Name> and then she said,
407		yeah, they're putting him on waiting
408		list for the for the wheelchair (2.0)
409		/*khalas*/ [i.e., 'no more']

Note:
Sulfasalazine: Anti-infective, GI tract anti-inflammatory, antirheumatic.
PT: Abbreviation for the patient.
OT: Abbreviation for occupational therapist or therapy.

As shown in the examples (above), and typical to the whole dataset, the departing nurses closes the handoff without checking if the incoming team has any questions or clarification requests. Thus, similar to the physical departure, the use of the Arabic phrase /*khalas*/ may discourage any further communication between the departing nurse and the incoming team. This represents an area of future improvement that is to enhance the quality of the handovers in this setting.

The data analysis revealed that some nurses use short pauses, or the discourse marker *okay* (proceeded or followed by a short pause), as a strategy to mark the end of the handoff interaction (15%). To illustrate, Excerpt 9 (below) is also a part of a handoff interaction at the Surgical ward. Another male Filipino nurse ends his handoff with the *medication stage*. After several turns explaining an issue concerning a variation in the medication doses that the female doctor has prescribed to the patient, in lines 547-551. At the end of line 551, the nurse closes the handoff with a two-second pause, with which he marks the end of the handoff.

Excerpt 9 (Morning Shift) NGH- Surgical Ward

545	Nurse	Toxicity of analgesic, they will give Acetylcysteine as antidote
546		And uh I reminded her about Acetylcysteine because Doctora
547		<Name>,she she wrote for two days.
548		Doctora <Name>, Acetylcysteine for four days
549		She said, "I will check it," but in the system it's still four days
550		Just remind Dr.<Name> about IV fluid because I asked Doctora
551		<Name> to renew the hydration. (2.0)
552		[End of handoff shift]

Note:
Analgesic: An agent that relieves pain without causing loss of consciousness.
Acetylcysteine: A mucolytic agent used orally or intravenously as an antidote to acetaminophen poisoning.
Antidote: An agent that counteracts a poison.
Doctora: An Arabic word which refers to a female doctor.

This short pause opens up the possibility for the incoming team to step in and request further clarifications. However, this opportunity, similar to many other opportunities in the dataset, was not taken up by the incoming team, and no follow up questions were asked.

Excerpt 10 (below) comes from the same handoff shift. In this example, a female Filipino nurse concludes the handoff with the *status stage*. Towards the end of this stage, and after a two-second pause, line 196, the nurse introduces the information that the patient's port-a-cath device has not been inserted yet. The nurse then wishes the incoming team good luck in doing this procedure, line 197. This request is followed by a laugh from a nurse in the incoming team, who most likely is the one who will take care of this patient. This is another example that demonstrates how the departing nurses insert indirect requests in their handoffs that is for the incoming team to do. The incoming nurse acknowledges this request with *okay*, in line, 198.

Excerpt 10 (Night Shift) NGH- Oncology-Pediatric Ward

194		So::o she's fine with that, /*tayeb*/ [i.e., 'okay']
195		Uh, otherwise, the blood works were done yesterday,
196		so I updated them (2.0) porta CATH is not yet accessed,
197		so good luck, to access them
198	IN-N	[laugh] okay
199	Nurse	(3.0) Okay ↓

Note:
Port-a-cath: Nursing A proprietary indwelling device that provides long-term IV access for administering, blood products, drugs, high-dose chemotherapy.

After this brief interaction between the two nurses, the nurse concludes the handoff with a a three-second pause followed by a falling tone *okay*, line 199. This pause offers the incoming team with an opportunity to step in and ask questions; yet, the nurses in the incoming team do not ask any questions. In both examples (Excerpts 9 and 10), the incoming team does not take up the opportunities provided to ask questions, confirm, and/or clarify the received patient information. Therefore, raising nurses' awareness of how to use such signals (e.g., pauses) could help enhancing this part of the interaction and encouraging them to practice active listening by asking questions and clarifying any ambiguity.

The dataset includes other closing strategies, such as declaring the beginning of a new handoff (10%), that is in case the nurse is handing over more than one patient (there have been occasions where a nurse hands over two patients). For instance, Excerpt 11 (below) is part of a night shift handoff at the Oncology-Pediatric ward. In this example, towards the end of her first handoff, the female Saudi nurse indicates the end of the handoff in line 13, *uh:: nothing else*, followed by a two-second pause. Unlike Excerpts 9 and 10 (above), this time the short pause at the end of the handoff is taken by the head nurse who poses a clarification question, in line 15. This question is perhaps related to the time of administrating the patient's port-a-cath and another type of procedure.

Excerpt 11 (Night Shift) NGH- Oncology/Pediatric Ward

12	Nurse	Uh:: this patient for change porta cath and (Bionector) on 25,
13		Uh:: and uh:: daily abdominal work for him,
14		with me she is <inaudible> vitally Stable, uh:: nothing else (2.0)
15	HN	Tonight or for tomorrow?
16	Nurse	Tomorrow. Tomorrow
17	HN	aha, tomorrow
18	Nurse	Yeah. This is the latest blood work for him (They can work some)
19		So next patient in room 13

Note:
Port-a-cath: Nursing A proprietary indwelling device that provides long-term IV access for administering, blood products, drugs, high-dose chemotherapy.

Then, the nurse concludes the *status stage* of the handoff with brief elaboration related to the patient's blood tests, in line 18. The nurse then as part of the same turn of talk starts the second handoff in line 19, *so next patient in room 13*. So, by announcing the beginning of the second handoff, the nurse re-closes the previous one.

To summarize, the nurses in this setting use various closing strategies including ending the handoff abruptly, using the Arabic phrase /*khalas*/, ending with a short pause, or ending with the announcement of a new handoff. As explained earlier, closing the handoff with a short pause is potentially a useful communication strategy, which provides the

incoming team with an opportunity to ask checking questions. However, in the data, such opportunities were only taken up by the incoming team 2% of the time. The rest of the strategies, however, may discourage such opportunity. So, nurses can benefit from training on how to use communication strategies, such as verbally checking if the incoming team has any questions or concerns, which open opportunities for the incoming team to ask questions.

This section of the study contributed to our understanding of nursing handovers in the private sector, NGH. The inductive analysis approach allowed us to generate the six-stage handoff model, which is followed by nurses in this setting. In this analysis, I demonstrated how these stages unfold during the handoff interactions, and how each stage has its function and linguistic characteristics. This model could be used for nursing training purposes in this setting and its various branches. In the next section, I explore nursing handoffs in the public sector, KFGH. As discussed earlier, in this hospital, nurses follow the SBAR protocol as the guiding tool for nursing handoffs. Consequently, the analysis will focus on the extent that which nurses adhere to the SBAR protocol as they deliver nursing handoffs.

King Fahad General Hospital

Structure of nursing handoff in KFGH. In contrast to the National Guard Hospital, nurses at King Fahad General Hospital use the standardized SBAR protocol to guide nursing handoffs. As explained in chapter one, SBAR is a structured communication technique which is used widely to guide hospitals' handovers (WHO, 2007), including clinical handovers (e.g., Eggins & Slade, 2012) and nursing handovers (e.g., Leonard et al., 2011; Sandlin, 2007; Staggers & Blaz, 2013). SBAR includes four basic components: *situation, background, assessment, and recommendation* that should be addressed in each patient handoff. In ***situation***, the nurse needs to introduce herself, the patient (such as name, age, sex, reason of admission), and concisely state patient's situation and state. Then, the nurse needs to provide

detailed patient ***background***, including patient's previous history, lab results and medical issues. Next, the nurse needs to provide the ***assessment*** component which is based on the shift's observations, such as specific concerns or incidents that happened during the nurse's shift, and patient's current health status. Finally, the nurse needs to end the handoff with ***recommendations*** for patient's immediate needs and suggestions for continuation of care for the incoming nursing team. The aim of this section is to examine the nursing teams' adherence to SBAR protocol, including the utilization of this tool to guarantee patient safety at KFGH.

As explained earlier, unlike the National Guard's nursing handoffs, the nursing handoffs at King Fahad General Hospital are all conducted at bedside, meaning that they take place inside patients' rooms and next to bedsides. Based on my field observations, there were at least two patients sharing each room in all the observed wards in this hospital. Additionally, the nursing shifts in this hospital occur three times a day: 7:00 a.m., 3:00 p.m., and 11:00 p.m. All the data in this dataset (15 handoffs) were collected from the 3:00 p.m. shift. Though handovers are conducted with the patients' presence, patients are excluded from the handover interactions. In other words, departing nurses do not greet the patients, do not introduce the incoming nursing team, do not invite the patients to contribute to the interaction, and both teams do not interact with the patients in any way. A possible explanation of this exclusion of patients in the handoff interactions could be related to the fact that nurses use English language to produce this type on interaction, while most patients are Arabic speakers.

Since this institution used the SBAR handoff protocol, I examined the data from KFGH to determine the actual application of this protocol in this setting. The analysis revealed that, overall, the nurses in this site begin the nursing handoffs with a "SBAR-like" protocol. However, as will be illustrated in this section, the analysis showed that the handoffs

often lack the Systemic presentation of patient information that is expected, given the protocol's requirements. Additionally, some instances revealed major discrepancies and deviations from the SBAR protocol, which may negatively impact the quality of nursing handoffs in this site. It should be noted that due to the small amount of data from this hospital (i.e., 15 bedside handoffs), the findings in this section should be interpreted cautiously: they may not be representative of nursing handoffs in KFGH. In the following section, I will explore the handoff components in this dataset.

Situation component. The data suggested that the nurses in this site vary in the way they present this component. In other words, while some nurses begin the handoffs with the *situation component* (that is, by introducing patient information and the patient's current health status) other nurses may either skip this component or present it with incomplete information. For example, Excerpt 12 (below) is part of an afternoon handoff at the Urology ward. In this example, the Saudi female nurse begins her handoff with the *situation component* of the SBAR protocol.

Excerpt 12 (3 p.m. Shift) KFGH- Urology Ward

2	Nurse	Uh:: Good evening,
3		this patient <Patient's First Name> under Doctor <doctor's Name>
4		uh both <inaudible> transfer (2.0) uh the patient hypertension
5		uh today, seen patient by group
6		(3.0) [nurse shuffles papers in the patient's file]

Note:
Hypertension: High blood pressure.

Typical to all handoffs in this setting, the nurse starts the handoff with a formulaic greeting, line 2, followed by the patient's first name. However, with no further identification details (e.g., full name, file number, gender, age, etc.) about the patient are given. Similar to all handoffs in this dataset, the nurse also has not introduced herself, thus, deviating from what is recommended by the SBAR protocol. The nurse then proceeds with a brief information about

the patient's situation, lines 4-5. The patient's situation in this example is presented in an imprecise manner. For example, with the statement *uh the patient hypertension*, in line 4, it is unclear if the nurse has missed introducing specific information about the patient's blood pressure state, or if it is just a grammatical error; that is, the nurse is mistakenly using the noun 'hypertension' instead of using the adjective 'hypertensive' to properly describe the patient's situation, meaning that the patient is suffering from high blood pressure. The nurse ends this component of the handoff in line 5 with another truncated piece of information, i.e., the patient was seen *by group*, line 5. The *group* in this context most likely refers to the physicians who are in-charge of the patient case. However, the nurse provides no further details about this situation.

The data showed that nurses sometimes present this component with vital information omitted. For example, Excerpt 13 (below) provides an example from the same shift in which the incoming nurse (female Indian) explicitly requests the *situation component* because the departing nurse (female Saudi) has failed to provide the patient's state and situation at the beginning of her handoff.

Excerpt 13 (3 p.m. Shift) KFGH- Urology Ward

01	Nurse	this patient <Patient's First Name> under Doctor <doctor's Name>
[Lines 2 -19 in which the nurse introduces the *background component* were deleted]		
20	IN-N	<inaudible crosstalk> can I know the patient's situation?
21		<inaudible> because <inaudible>
22	Nurse	ok, yeah (2.0)
23		uh the last uh investigation for patient
24	IN-N	today, today
25	Nurse	uh today, still I did I didn't write because I go to ICU.
26		I transfer my patient [crosstalk]

As observed in this excerpt, the nurse introduces the patient's name and the in-charge doctor in line 1, however she misses presenting the rest of the information that is required in this component (i.e., patient situation and current health state). Consequently, as observed in line

20, the incoming nurse requests the missing information (*can I know the patient's situation?)* and takes the nurse back to the first component of the SBAR. The departing Saudi nurse responds affirmatively, but with a hesitation, in lines 22-23, clarifying if the incoming nurse needs the latest investigations. Using repetition for emphasis, line 24, the incoming nurse confirms that she needs the current patient situation: *today, today*. Again, the departing nurse fails to provide the requested information and, instead, she provides a justification for this missing information, line 25, *uh today, still I did I didn't write because I go to ICU*. The nurse also fails to provide any verbal statement of patient's situation that may substitute for the missing written one. This interaction is missing several important handoff components, which may negatively impact the continuity of care provided to the patient.

Excerpt 14 (below) comes from the same shift and provides an example of how another nurse starts the handoff without the *situation component* of the SBAR. It is worth mentioning that, based on field notes, there were actually two patients sharing this room. In this example, the female Saudi nurse begins the handoff by shuffling through the patient's file.

Excerpt 14 (3 p.m. Shift) KFGH- Urology Ward

38	Nurse	uh so, this [nurse shuffles papers in patient's file]
39		Anyway today uh when I receive the patient he was NPO
40		<inaudible crosstalk> almost done.
41		So, before that seen by Doctora <Name> will help you (2.0)
42		So, they want hematology consultation

Note:
NPO: Abbreviation for nil per os (nothing by mouth).
Doctora: An Arabic word used to refer to a female doctor.
Hematology: The branch of medicine that deals with the diagnosis and treatment of diseases of the blood and bone marrow.

Then the nurse begins with a hesitation marker *uh* followed by the singular demonstrative pronoun *this* – an unclear deictic referent, most likely referring to the patient. The nurse then resumes with the *assessment component* of SBAR. As recommended by the SBAR protocol,

the nurse is supposed to present complete patient identification in the *situation component*. By starting the handoff with no patient identification whatsoever, the nurse in this example risks patient safety. In this case, because there were two patients per room, such an incident might have led to a mismatch between the patient's identity and the care provided. Patient identification remains an important element in SBAR, even if it is a bedside handoff where the patient is physically present.

Deviating from SBAR protocol, the above examples demonstrate that for this component to be following SBAR recommendations, nurses need to: (1) provide detailed patient information (full name, age, gender, reason of admission, etc.), and (2) provide the patient's problem in clear and precise language, as recommended by the SBAR.

Background component. As mentioned earlier, the main purpose of this component is to provide the incoming nursing team with patients' diagnosis, reason of admission, and the medical status and history. At this point of the interaction, the nurse needs to present as much important medical details about the patient in order to set up the next stage; that is, introducing the *assessment component* (WHO, 2007). In this setting, the data showed that only one of the 15 handoffs included a "SBAR-like" *background component*. The following excerpt is part of an afternoon handoff shift at the ENT ward. The handoff is produced by a female Saudi nurse. This handoff consists of only two components of SBAR, the *situation and the background* components.

Excerpt 15 (3:00 p.m. Shift) KFGH- ENT Ward

1	Nurse	[background sound: *patient is crying softly*] [nurse shuffles papers in
2		Patient's file] (1.0) Good morning, I will endorse, <File Number>
3		This patient, <Patient's first name> five years old, under Dr. <Name>
4		[reading from the file] No risk of fall, uh no allergy, uh this patient
5		yesterday admission, (Adenotonsillitis), for adenoidectomy today
6		then uh she came around 11:30 (3.0) [nurse closes the patient's file]

Note:
Endorse: A synonym for 'handoff.'
Adenotonsillitis: Inflammation of the adenoids.

Adenoidectomy: A surgical removal of the adenoids.

In lines 2 to 3, the nurse introduces the *situation component*; that is greeting, patient's first name, file number, age and the in-charge doctor. Then, she resumes reading from the patient's file information related to the *background component*, including patient's history (*no allergy*), diagnosis (*Adenotonsillitis*), and reason of admission (*for adenoidectomy today*). The nurse ends the handoff by closing the patient's file. Both the situation and background components still lack the details that are required by the SBAR protocol, thus are considered as "SBAR-like" components.

In the rest of the handoffs in this dataset, the nurses either have missed including this component in their handoffs, or included only some part of the information that is required to be included, such as mentioning brief information related to patient's diagnosis (e.g., *severe head injury*). Again, these findings provide evidence of several deviations from the SBAR protocol. The impact of these deviations on the quality of nursing handoffs in this site will be examined in research question three in this study.

Assessment component. At this stage of the handoff, as recommended by the SBAR protocol, the nurse needs to present the patient's current health status, including vital signs, recent laboratory work, any abnormal results or concerns, any incidents that happened during the shift, as well as the in-charge physicians' comments, recommendations and plan of care. In this dataset, it was found that only a few nurses provide some of the information required at this stage of the handoff. For example, Excerpt 16 (below) is produced by a female Saudi nurse during an evening shift at the ENT ward.

Excerpt 16 (3 p.m. Shift) KFGH- ENT Ward

44	Nurse	Today, uh seen first by RT uh Mr. <Name>
45		and he did uh a wound care wash and uh suctioning done,
46		and still there is uh blood coming from the (1.0) Tracheostomy

47		and he uh adjust, he put the (1.0)
48		the mode of the mechanical ventilator C-PAP
49		After that, alarming
50		I call him again uh to change the CMD mode
51		already changing to CMV mode
52		And uh [
53	IN-N	sure that CMV?
54	Nurse	CMV mode, I'm sure it's CMV mode
55	IN-N	CMV?
56	Nurse	CMV mode
57	IN-N	Sorry, sorry <laughs> [IN-Nurse is teasing the nurse]
58	Nurse	CMV MODE! /*Wallah*/ [i.e., 'I swear'] [laughs]

Note:
RT: Abbreviation for Radiologic Technologist.
Suctioning: The use of suction to remove debris or body fluids from an airway, body cavity, orifice, or surgical site.
Tracheostomy: Surgical construction of an opening in the trachea for the insertion of a catheter or tube to facilitate breathing.
Ventilator: A machine that supplies oxygen or a mixture of oxygen and air, used in artificial respiration to control or assist breathing.
CPAP: Abbreviation for continuous positive airway pressure; a method of positive pressure ventilation used with patients who are breathing spontaneously.
CMV: Abbreviation for controlled mechanical ventilation.

The nurse in this example provides details about an incident that has happened during her shift as well as her assessment of this situation. As observed in line 46, the nurse reports a situation in which she has observed some blood coming out of the patient's tracheostomy. Over several turns, the nurse explains to the team the actions she has taken to resolve this issue, including the procedures that were done by the radiologic technologist, in lines 49-51. One issue to be highlighted in this extract is the nurse's use of present tense or non-finite verb forms to report past actions that took place in the past (e.g., *I call him again, already changing*, line 50). Based on the use of this verb tense, it maybe unclear if what the nurse is describing has been done or what has yet to be done. However, this vague presentation went unnoticed by the incoming team. This dataset revealed other instances in which the use of incorrect verb tenses leads to moments of confusion between the nurses. This will be later explored in research question three.

The data also revealed some instances in which the nurses deviate from SBAR and present the ***assessment*** component in vague language. In other words, nurses miss providing essential details, such as doctors' names and names of health professionals whom interacted with the patients during the nurses' shifts. Excerpt 17 (below) is produced by the same Saudi nurse who missed introducing the patient's name in Excerpt 14 (above).

Excerpt 17 (3 p.m. Shift) KFGH – Urology Ward

41	Nurse	So, before that seen by Doctora <Name> will help you (2.0)
42		So, they want hematology consultation
43		[nurse flips through patient's file] (3.0)
44		here .. hematology I know I already spoked to uh
45		[Nurse's phone is ringing] [Nurse switches her mobile off].
46		He send some girl she came (1.0) here
47		to uh she want to see the patient
48		but (2.0) uh:: he was already down for the <Inaudible>
49		*/tayeb?/* [i.e., 'okay?']
50		So, she didn't come back again.
51		*/khalas/* [i.e., 'that's it']
52		Follow up and this all investigation they took at uh 3 of 3 uh one
53		G, TM had one,
54		ANYWAY, this all to be follow up.

In Excerpt 17, the nurse is reporting an incident that has happened during her shift; that is, the doctors have requested a hematology consultation for the patient line 42, *they want hematology consultation*. It should be noted that, based on the context, it is assumed here that the third-person plural pronoun *they* (underlined) refers to the doctors. The nurse, after flipping through the patient's file and after a short pause, points to the file indicating that she has spoken to a health professional regarding this request line 44, *I already spoked to uh*, the name of this health professional is not stated and remains unknown, as the nurse gets distracted at that moment by her phone. Then, the nurse resumes indicating that this health professional has sent "a girl", as described by the nurse in line 46, to examine the patient who

was unavailable at that time[6]. The nurse then concludes that all this information needs to be followed up by the incoming team, line 54.

As observed in this short excerpt, the *assessment component* lacks vital information, including the name of the health professionals who have requested the hematology consultation for the patient, the name of the health professional whom the nurse has talked to on the phone regarding this request, and the name of the health professional whom has been sent to examine the patient. Eggins and Slade (2012) indicated that for a handover to be complete, all information needs to be specific, including names of people. Both parties involved could improve this component of the handoff. In addition, the nurse could avoid using ambiguous language, including the use of indefinite pronouns (e.g., *they, he*) and unspecified/unknown person referents (e.g., *some girl*). The incoming team could also to step in and request the clarifications needed to clear up this ambiguity enabling them to be more informed to follow up with this required request.

Recommendation component. The final component of SBAR protocol is the *recommendation component,* which requires the nurse to provide explicit and descriptive statements of what needs to be done, with respect to the patient's immediate needs. This is provided to ensure the appropriate continuation of care by the incoming nursing team. This stage, based on SBAR recommendations, needs to prepare the incoming team to be able to continue providing the required patient care as well as to be able to respond to doctors' queries (WHO, 2007).

For this dataset, the analysis revealed that, in general, all handoffs lacked the *recommendation component*. In other words, the recommendation component never occurred in the handoffs as a separate component of the handoff structure, as is recommended by

[6] Based on my field notes, the patient was sent to the X-ray department.

SBAR. The data includes only few, short, and overly general, statements of recommendations by the departing nurses to the incoming team (e.g., *continue same managements, this all to be follow up*). Most of these recommendations occur as part of the *situation or assessment components* and mostly relate to patient's lab work and medication.

To illustrate, Excerpt 18 (below) is part of an evening handoff shift that took place in the ENT ward and is produced by a female Saudi nurse. In this brief handoff (less than 50 seconds), the nurse begins with the *situation component*; that is, introducing the patient's first name, reason of admission, and the name of the in-charge physician (line 110).

Excerpt 18 (3 p.m. Shift) KFGH – ENT Ward

110	Nurse	<File Number> <Patient's first name> <inaudible> fraction, Dr.
111		<Name> so for him nothing, No update yet, Continue same treatment
112	IN-N	<inaudible> medication?
113	Nurse	*/Mafi/* [i.e., 'no'] medication for him [long pause][Paper shuffling]
114		End of handoff [nurse leaves the room]

The nurse then indicates that she has no further information or health updates to share with the incoming team line 111, *so for him nothing, No update yet.* By doing so, the nurse bypasses the SBAR ***background*** and ***assessment*** components, thus, deviating considerably from the SBAR recommendations. The nurse then discloses her *recommendations* for the incoming team to continue with the same medication plan for this patient, line 111. It is unclear from the handoff what the medication plan actually is; presumably the medication information is included in the patient's file. As observed in this example, the nurse recommendations are enclosed in a short, general statement which, in this case, relates to patient medication. The recommendation component ends with a long pause, yet no follow up questions or clarification were posed by the incoming team.

To sum up, the analysis in this section examined nursing handoffs at King Fahad General Hospital. The goal of this section was to examine nurses' adherence to SBAR

protocol implementation that is to ensure patient safety. The findings revealed that, overall, the nurses in this hospital begin the handoffs with a "SBAR-like" protocol. However, as illustrated above, the analysis revealed various deviations from SBAR protocol. In some cases, these deviations were significant. I have suggested various areas for improvement, or ways of following the SBAR protocol more closely.

Conclusion

To summarize this section of chapter four, the aim of research question one was to explore and characterize the datasets from both hospitals to better understand the phases of the handoffs in both settings. I first examined the data from the National Guard Hospital. I generated a six-stage model of nurse-to-nurse handoff interactions in this setting which included: introductory stage, reporting stage, status stage, medication stage, recommendation stage, and closing stage. It should be noted that these stages were found in almost all the handoffs in NGH observed wards. As discussed earlier in this section, these stages did not always occur in a linear fashion; however, the *introductory* and the *reporting* stages were the fixed ones in all the handoffs.

As the data showed, the *introductory stage* was the essential stage in all the handovers and with which the nurses guaranteed patient safety by presenting detailed patient identification. Pertaining to health and safety, World Health Organization (WHO, 2007) indicates that any inaccurate identification to patients may lead to wrong patient identification and thus wrong intended medical interventions such as, procedures, medications, lab work, etc., consequently, risking patient safety. As showed earlier, in NGH setting, all departing nurses started their handoffs with the detailed *introductory stage* making it a safety, fixed routine which not only guarantees patient safety and avoide adverse events (Slade et al., 2008; Smeulers et al., 2014; Watson et al., 2015), but also promotes the efficiency of the

following stages of the handoff interaction. The *reporting stage* was identified as the next relatively fixed stage in the handoffs, which always followed the *introductory stage*. As discussed earlier, at this stage departing nurses get the chance to acquaint the incoming team with various procedures which were carried out during patients' admission time and/or during nurses' shifts as well as other information related to patients' plan of care and patients' complaints. Doing so, the departing nurses provided the other team with a general as well as accurate, up-to-date information that avoid any possible gaps in patient health care during shift change. The *status*, *medication*, and *recommendations* stages of the nursing handoffs in this setting were found to be less linear.

The analysis also revealed areas to enhance nursing handoffs in this setting. For example, as illustrated above, one major pitfall of the *recommendation stage* was that the outgoing nurses tended to read the written list in a way that was identical to reporting. Furthermore, most of the recommendations, advice and requests made by the departing nurses were very implicit, and not directly stated. Thus, nurses in this setting may benefit from additional language/communication training in producing more explicit and specific recommendations for the incoming teams; that is, to ensure the clarity of recommendations in this stage (Eggins & Slade, 2012).

Another point to enhance nursing handoff in this setting relates to the *closing stage*. Eggins and Slade (2012) identified active checking and confirming that all presented points have been clearly understood by the incoming team as communicative features which strengthen handovers. Thus, in this setting, closing handoffs with information checking and/or by providing opportunities for questioning are suggested as better discourse strategies rather than closing the handoffs abruptly or with other less preferable strategies (e.g., using the Arabic phrase /*khalas*/ or simply walking away) as demonstrated in the analysis.

In the second part of research question one, I scrutinized nursing handoffs at King Fahad General Hospital to examine nurses' adherence to SBAR protocol implementation in this setting. As mentioned earlier, the use of SBAR protocol is intended to guide the nurses to present more effective and concise handoff reports which would help ensure patient safety and prevent adverse events (Eggins & Slade, 2012; Stagger & Blaz, 2013; WHO, 2007). The data analysis revealed that although nurses follow a SBAR-like protocol as they delivered the handoffs, various serious deviations from this protocol frequently occurred in this setting. For example, one of the major problems observed in this setting was the deviation from the *situation component* of SBAR; that is, the inadequate or the omission of detailed patient identification. As discussed earlier, wrong patient identification may lead to adverse events, including a mismatch between the patient identity and the clinical services provided (WHO, 2007). Second, the analysis revealed that nurses tended to bypass essential components of SBAR protocol, such as the *background and recommendation component*s as they deliver the handoffs. By doing so, the nurses failed to pass crucial patient information that was required to ensure the continuity of care by the incoming team. Finally, the analysis revealed that the vague, unspecified presentation of patient-related information led to unclear handoffs which may lead to inappropriate patient care.

Looking at both sites together, both hospitals are in the same geographical region, Saudi Arabia, Jeddah. The participants in both sites are mostly international nurses who come from various countries such as Philippines, India, Indonesia, and South Africa. The sites also host nurses from Morocco, Jordan, Egypt, and Saudi Arabia. Nevertheless, the nurse-to-nurse handoffs in both sites vary in one major way; that is, nurses at KFGH are supposed to follow the well-established, standardized protocol SBAR to guide the nursing handoffs, while nurses at the NGH follow a local formulated handoff written chart. Though both protocols may share some basic components which require nurses to report certain patient information (e.g.,

patient detailed identification), as the analysis revealed, SBAR protocol requires a concise presentation of patient information, while the NGH protocol requires an elaborative, detailed presentation of patient information.

Overall, the data analyses revealed that the handoff interactions at NGH (both in wards and ICU) were consistently structured, detailed, and descriptive (e.g., nurses tend to provide substantial amounts of complex information as well as medical jargon). They were also, on average, producing longer handoffs (the average handoff is approximately 2 minutes) than the handoff interactions at KFGH (the average handoff is approximately 1 minute). It appears that, the use of the supplementing handoff written sheet while producing the nursing handoffs at the NGH (see Table7) allowed the nurses (International and Saudi) to present the handoff information not only in a very detailed manner, but also in an consistent manner across the hospital wards. In other words, as demonstrated previously in this section, the nurses did use the handoff chart, which they always completed prior to the handoff shifts, to guide the handoffs. This chart proved to be useful in organizing the content of the handoff, meaning that certain types of information always clustered together, regardless of where they appeared in the handoff interactions. Additionally, it appears that the use of the written handoff chart reduced the cognitive load during the handoffs, allowing the departing nurses to produce thorough and detailed handoffs as well as to discuss additional information that occurred during their shifts, and which was not included in the written charts.

On the other hand, though the nursing handoffs at KFGH were, in theory, guided by the standardized protocol SBAR, the nurses generally were unable to produce clear and thorough handoffs, either due to the lack of the written artifact which summarizes patient information and the use of patients' files instead, or due to the insufficient training in using the actual SBAR protocol. Based on field observations, the nurses at KFGH were shuffling through patients' files trying to find a starting point for their handoffs. Thus, regardless of the

alleged use of the standardized protocol SBAR, most of the handoffs at KFGH lacked the internal, Systemic structure that is required for Systemic and organized handoff presentation. Moreover, the handoffs at KFGH were short (the average handoff is approximately 1 minute), lacked consistency, meaning that nurses approached the handoff presentation in different ways, and often lack essential SBAR components. More importantly, the data analysis revealed that most of the handoffs in KFGH focus on one aspect of patient health information (e.g., medication information), this forced the nurses to collapse all other phases of the handoff into one or two phases, leading to incomplete handoffs which deviated from SBAR protocol recommendations. Consequently, it remained unclear if the incoming nursing teams actually had detailed, accurate, and up-to-date knowledge about patient information as recommended by the SBAR protocol.

Research Question Two

The second part of this chapter addresses research question two (*What are the main discourse pragmatic features that characterize nurses' talk during nursing handoff interactions?*). I explore the nursing handoff interactions from both hospitals to identify the various discourse pragmatic features which nurses use while delivering the nurse-to-nurse handoff interactions. These features include linguistic features (i.e., questions), interactional features (i.e., discourse markers, backchannels, hesitation markers, and overlapping), and interpersonal features (i.e., non-task related features). Subsequently, this part of the analysis includes three-part division, and the discussion is organized in that way.

The focus on exploring the discourse pragmatic features in this type of Nursing discourse is generated by research which previously examined medical interactions, such as provider-patient interactions. Various studies explored discourse features, including the linguistic features which were shown to be key features in medical discourse (e.g., Candlin &

Candlin, 2002; 2003; Eggins & Slade, 2012; Staples, 2015; Wodak, 2006). For example, in the most recent investigation on nurse-patient discourse, Staples (2015) examined the use of the linguistic features (such as questions), and interactional features (such as discourse markers and hesitation markers), which were used by US and international nurses in simulated nurse-patient assessment interactions. The author elaborately illustrated the importance of such linguistic and interactional features in understanding this mode of medical discourse. Hence, building on Staples' (2015) work, the following section will expand this area of research on nursing discourse by examining various linguistic, interactional, as well as interpersonal features which occurred in the authentic nurse-to-nurse handoff interactions in this dataset.

Linguistic Features

Questions. The use of questions in the medical discourse has been the interest of various scholars who examined doctor-patient interactions (e.g., Ainsworth-Vaughn, 2005; Boyd & Heritage, 2006). Given the fact that doctors tend to ask the majority of questions in medical interactions, the examination of questions has been used to support the asymmetrical nature of these interactions (Ainsworth-Vaughn, 2005; Staples, 2015). Doctors found to use various types of questions to solicit necessary information from the patients regarding their medical status. For example, it was found that doctors often use closed-ended questions (*yes/no* questions) to gather specific patient information. They also, in some cases, use open-ended questions (*wh*-questions) to allow patients to elaborate on their medical conditions or history (Ainsworth-Vaughn, 2005; Boyd & Heritage, 2006). However, to date, little research has examined the use of questions in nurse-to-nurse handoff interactions. Consequently, due to its importance in the medical discourse, questions will be examined in the Nursing discourse in this study.

The data analysis revealed that both head nurses and staff nurses often use questions in this type of nursing discourse. In the entire dataset (both contexts), head nurses produced around 170 questions, while incoming nurses produced around 76 questions. This will be explored in detail in research question four.

The analysis of nursing handoff interactions revealed that head nurses use questions more frequently to direct the discourse with the nurses. Table 7 (below) provides a breakdown of the types of questions which were produced in my data from both hospitals. It should be noted that most of the examples of head nurses' questions that I provide in this section come from the NGH. At KFGH, head nurses had very limited, if any, role in all handover sessions which I observed at the hospital.

Table 7.

Types of Questions in NGH and KFGH (Head nurses vs. Incoming Nurses)

Types of Questions	NGH		KFGH	
	HN	IN-Nurse	HN	IN-Nurse
Wh-Q	75	9	2	6
Declarative	67	43	-	9
Yes/No	25	6	-	3
Tag	1	-	-	-
Total	168	58	2	18

As demonstrated in Table 7 (above), the analysis revealed that head nurses asked 170 questions in the entire dataset (NGH and KFGH). The frequencies of the grammatical forms of these questions were: *wh*-questions (77), declarative questions- marked with a rising intonation at the end (67) and *yes/no* questions (25). The data also revealed that *tag*-question format was the least preferred form in these interactions (1). In the following section, I provide examples to illustrate the use of questions by head nurses.

The first example, Excerpt 19 (below), illustrates the use of questions by a female Saudi head nurse. This head nurse is an especially prolific producer of questions, she is

responsible for 69 questions across all handoffs within a morning handoff shift, which lasted for around 70 minutes, at the Surgical ward.

Excerpt 19 (Morning Shift) NGH – Surgical Ward

586	Nurse	And total intake is 750. Output is 650, and uhm [
587	HN	Did they take an output for total 24 hour or only for your shift?
588	Nurse	No, no. Only for my shift, this one
589	HN	Where is the 24 hour?
590	Nurse	I will just put this [
591	HN	And you are writing here it 20, 24 hours
592	Nurse	Yeah, yeah. It's here. It's with me
593	HN	I need the 24 hour
594	Nurse	Yeah, yeah (1.0)
595		And umm PT, bed to wheelchair and gym
596		And from the OT, he is now with splint, right leg,
597		q 2 hourly on and 2 hourly off,
598		and uh he also did a consult [
599	HN	You are doing the skin assessment when you are there?
600	Nurse	Yeah, yeah, yeah, yeah. Skin assessment (2.0)
601		And social worker referred for wheelchair and commode.
602		There's a referral (3.0)
603	HN	Where you are putting your skin assessment? Under the flow sheet?
604	Nurse	No, no. They are in the . Memo

Note:
Intake: The substance or quantities thereof taken in and used by the body.
Output: The amount produced, ejected, or excreted by an organism or part in a specified period of time.
PT: Abbreviation for physical therapy/training.
OT: Abbreviation for occupational therapy.
Splint: a rigid support for restricting movement of an injured part, especially a broken bone.
Q 2 hourly: Once every 2 hours.
Commode: A special toilet chair with armrest and backrest.

In this example, we observe how the head nurse interrupts the handoff at several points. The first interruption occurs when the head nurse asks a *yes/no* question, in line 587: *Did they take an output for total 24 hour or only for your shift?* This question occurs right after the female Filipino nurse ends the *status stage*, in line 586 by saying *and total intake is 750, output is 650*, and before she can proceed to the *recommendations stage*, line 586. The nurse responds to the head nurse's question, in line 588 (*no, no*) followed by a further clarification *only for my shift, this one*. The head nurse then follows up with another question requesting

further specification about the status stage, this time a *wh*-question, in line 589: *where is the 24 hour?* Before the nurse gets the chance to complete her response to this question (line 590), the head nurse interrupts and refers to the handoff sheet, where the nurse has mistakenly indicated that the patient's total output is for the 24 hours, which is not the case. Consequently, it can be said that the head nurse's questions serve as a maneuver to shift the attention to this mistake, an interpretation that is supported by the head nurse's statement in line 591, *and you are writing here it 20, 24 hours*. In line 592, the nurse acknowledges this mistake indicating that she has the right output number in her own sheet, in line 592 *it's here. It's with me*. This acknowledgment is followed by the head nurse's direct request in line 593, *I need the 24 hour*. Again, the nurse responds affirmatively to the head nurse's request and acknowledges the information with the repetition of the response token *yeah, yeah* (line 594) followed by a short pause.

Next, the nurse resumes the handoff with the *recommendations stage* (lines 595-598), where once again, she is interrupted by the head nurse who asks a declarative question, in line 599 (*you are doing the skin assessment when you are there?*). As can be seen, the head nurse starts a turn before the nurse finishes her turn, such interruption is found to be a characteristic interactional feature in nurse-head nurse interactions in this setting and will be discussed later in this section. The nurse responds in line 600 with another repetition of the response token *yeah*, this time a four-time repeated *yeah, yeah, yeah, yeah*, using the same intonation contour (Stivers, 2004). The nurse then proceeds repeating the phrase *skin assessment* followed by a short pause. At this point, the multiple sayings of *yeah* (line 594) goes beyond the acknowledgment of information, as the nurse could have used the token *yeah* only once or twice; thus, at this point it may indicate that the interruptions by the head nurse should be halted (Stivers, 2004). Stivers (2004) illustated how speakers use multiple sayings as a resource to display themselves to be dealing with the entire course of action rather than just

the prior unit of talk. In other words, in this this example, the use of the multiple sayings of *yeah* towards the end of the interacion indicated that the nurse had used it as an interactional resource to designate that the head nurse's questioning is problematic and is preventing her from resuming the handoff.

The nurse then proceeds with the *recommendation stage* and concludes the handoff with another short pause, in line 602. The head nurse takes advantage of this pause and asks another two questions in line 603: a *wh*-question (*where you are putting your skin assessment?)*, and a declarative question (*under the flow sheet?*) In this NGH dataset, short pauses play a significant role in stimulating questions and clarification requests from head nurses and incoming nurses. Returning to the head nurses' questions, both questions meant to clarify the location where the nurse wrote the results of the patient skin assessment procedure. The departing nurse responds to the question in line 604 (*no, no*) negating the head nurse's assumption; that is, she explains that skin assessment results are not under the flow sheet*,* and then she indicates where to find the skin assessment results (*they are in the—Memo*). In this brief excerpt, the head nurse asks five clarification questions with which she gathers very specific information, some that the departing nurse (who is producing the handoff) has missed adding in the handoff chart, and others which are related to the medical procedure. Being active in checking and clarifying given patient information, the head nurse, in this example, provide an exemplary handoff interaction which is recommended for successful handover interactions.

Excerpt 20, provides another example in which the same Saudi head nurse requests further information from another female Indian nurse. This time the interruptions happen at the end of the handoff, and right before the nurse resumes with a new handoff for another patient, who is also under her care.

Excerpt 20 (Morning Shift) NGH- Surgical Ward

47		PT sitting at the edge of the bed and OT seen for
48		home assessment as well as for equipment assessment.
49		Otherwise, he's fine (2.0)
50		Room 1, bed 2, <Patient's Name> [
51	HN	uh HOW is the pain, huh?
52	Nurse	The PAIN is fine. It's only::[
53	HN	So what is he take?
54	Nurse	He's only on I.V paracetamol . regular
55	HN	Only?
56	Nurse	mmm . only when turning, he will complain of pain .
57		otherwise, he will be sitting .

Note:
PT: Abbreviation for patient.
OT: Abbreviation for occupational therapy.
IV: An apparatus for providing intravenous injections.
Paracetamol: An over-the-counter analgesic used for headaches, muscle or joint pain, and fever, which lacks anti-inflammatory activity.

As seen in line 49, the nurse ends her handoff stating that the patient is fine (*otherwise, he is fine*). Then, after a short pause, she resumes in line 50 with a new handoff for the next patient. However, this short pause gives the head nurse an opportunity to step in and request more information about the previous patient, line 51. The head nurse's question overlaps with the nurse's unfinished turn in lines 50 to 51. The head nurse asks a *wh*-question which begins with a hesitation *uh* followed by a shift in intonation to higher pitch utterance (*HOW is the pain*, *huh*?). It should be noted here that the nurse has not reported anything about the patient's level of pain in the entire handover, instead, she concluded the handoff stating that the patient is "fine." The nurse then, in line 52, responds to this question and before she finishes her utterance, she gets interrupted by the head nurse again with another *wh*-question, which further narrows down the requested information (line 53: s*o what is he take?*). The nurse responds to this question, with more specific information about the kind of drug that the patient is taking for pain management, in line 54: *he's only on IV paracetamol . regular*. The nurse's response is again followed by a declarative question from the head nurse, in line 55: *only?* The nurse responds with a further explanation request which indicates that the patient's

pain is minor and that what he is taking could be enough as he only complains of pain when he turns (lines 56-57).

As mentioned earlier, the questions in both Excerpts 19 and 20 are produced by a female Saudi head nurse who has been highly watchful during the entire handoff shift. This sample of question-answer exchanges reflect aspects of communicatively effective roles that nurses can take in successful nursing handoffs: a) the active role of the head nurse in gathering missing information and clarifying vague, inaccurate, or incomplete information, and b) the nurses' ability to respond to the head nurse's queries. Eggins and Slade (2012) identified the former as an effective interactional feature from the incoming team (that is, being active in checking and clarifying given information), and the later as an effective interactional feature by the departing team (that is, being responsive to outgoing team queries). Both excerpts provide exemplary examples of the types of interactive handoff interactions, which should contribute to ensuring patient safety.

Excerpt 21 (below) provides another example of the use of questions by head nurses, this time by a female South African head nurse who asks 53 questions across various handoffs in one morning shift at the Oncology-Pediatric ward. This morning shift lasts for around 65 minutes. In this excerpt, at the *reporting stage*, the female Indian nurse introduces the handoff of a 6-year-old patient who, during her shift, has had a tachycardic issue, an accelerated heart beat caused by a problem in the heart's electrical system.

Excerpt 21 (Morning Shift) NGH- Oncology-Pediatric Ward

148	Nurse	yesterday throughout the day
149		The heartbeat was ranged from 125 to 145
150		Even in the morning, he was on and off tachycardic, 145,
151		and temperature was 37, but uh we just observed him
152		for the heart pump meter
153		It's five
[lines 154-163, with nurse introducing the medication and status stages, have been deleted]		
		(2.0)
164	HN	Uh, how's the trend of the tachycardia?
165	Nurse	No, it's like on and off

166 One hundred 20, and 140. It fluctuates.
167 It goes up and down
168 HN When did it start?
169 Nurse It's from yesterday morning. Six o'clock I can see with the heart monitor
170 HN Mm-hmm
171 Nurse That could go on
172 HN Do they know about this?
173 Nurse Yeah. I thought so, but the fever back
174 HN Mm-hmm
[lines 175-183, with nurse continues introducing the status stage for the patient, have been deleted]
184 Nurse And that's for him
And endorsing patient <Patient's Name> [
185 HN Mm-hmm. Who had seen him? Who was that? You had him yesterday?
186 Nurse Who?
187 HN Tachycardia
188 Nurse Yeah (2.0) but it was fine
189 Only have to find uh if the blood work can be focused in
190 HN What was happening?
191 Nurse He was uh 37 point two, and it was lifting up
192 HN It's okay [crosstalk] if we went. Just don't uh
193 Nurse Yeah. We are still confused. Right?
194 IN-N He'll see a doctor now. I don't when
195 Nurse He looks very thin
196 IN-N Yeah
197 Nurse OK, they'll solve it
198 HN That could be. OK. Now that's a missing <inaudible>
199 OK. Go ahead
200 [nurse begins a new handoff]

Note:
Tachycardic: Relating to rapid heart rate.
Pump: A machine or device for raising, compressing, or transferring fluids.
Meter: A device for measuring the quantity of that which passes through it.
Endorsing: Handing over.

The nurse addresses this tachycardic problem over several turns (lines148-153), after which she continues by introducing the *medication* and *status* information for this patient (lines 154-163). The nurse ends the medication and status stages with a two-second pause. This short pause allows the head nurse to step in with a hesitation *uh* followed by a *wh*-question (line 164) *how's the trend of the tachycardia?* The head nurse's question takes the attention back to the tachycardic issue that the nurse has presented in the reporting stage. The nurse responds back with a detailed answer, which expands on her previous talk about the

tachycardic issue. The head nurse then follows up with another *wh*-question requesting more details (line 168, *when did it start?*), and then with a *yes/no* question to ensure that doctors are aware of this case (line 172, *do they know about this?*). The nurse responds to these questions and then she resumes with the status stage for the patient (lines 175-183). Then, the nurse wraps up her handoff, and announces the beginning of a new handoff in line 184.

However, at this point the nurse gets interrupted by the head nurse who asks a sequence of clarification questions, line 185 *who had seen him? who was that? you had him yesterday?* This time, the questions have led to a moment of confusion to the nurse who responds with the clarifying question, *who?*, in line 186. The head nurse replies with *tachycardia* indicating that she meant the patient with the tachycardic issue. The nurse then responds with *yeah* followed by a short pause. She then indicates that everything is fine. The head nurse follows up with another *wh*-question, in line 190 (*what was happening?*) requesting more descriptions for the situation. The nurse responds with further details about the patient's tachycardic issue. The three nurses (departing nurse, head nurse, and incoming nurse) continue to discuss the issue over several turns (lines 192-198). They finally sum up with the indication that the doctors will figure out how to resolve this issue. Lastly, the head nurse gives the nurse the permission to pursue with her next handoff, in line 199: *OK. Go ahead*.

Excerpt 21 demonstrates how head nurses use questions to gather information and clarify various concerns. As observed, the head nurse's first question, in line 164: *uh, how's the trend of the tachycardia?* redirected the attention to the patient's medical problem, then all the following questions maintained this issue as the focus, and solicited additional details about it. Asking several different types of questions to clarify situations is an effective interactional feature in handovers, as identified by Eggins and Slade (2012). Furthermore, this interaction between the head nurse and the departing nurse provides an example that

nicely demonstrates the flexibility in managing intense topics in handoff interactions. Kerr (2002) considered similar observed handoff characteristics as contributors to handoff recommended best practices.

Like head nurses, incoming nurses also tend to ask questions during nursing handoff sessions. The types of questions vary between *wh*-questions (15), *yes/no* (9), and declarative questions (52). The use of declarative questions among nurses is more frequent than *wh*- and *yes/no* questions. Tag question format is not used by incoming nurses at all. The analysis revealed that most of the produced questions by the incoming nurses were found in one of the Intensive Care Unit handoffs, as both departing and incoming nurses were observed to collaborate energetically during the handoff. As mentioned earlier, in ICU, nurses produce nurse-to-nurse, bedside handoffs, which are often highly detailed due to the patients' critical health conditions. In other words, unlike handoffs which take place in wards' corridors and are presented to the whole team, ICU handoffs take place next to patients' beds and between two nurses only, one incoming and the other one is outgoing.

The following excerpt, for example, illustrates how in NGH-ICU, the incoming nurse (female, Filipino) is verbally active and frequently uses questions (mostly declarative questions) to gather and clarify given information from the departing nurse (female, Saudi) about the patient, who will be under her care in the next shift. Excerpt 22 is part of a very long ICU handoff, which has lasted for around 15 minutes, and in which the incoming nurse is highly engaged and uses numerous questions (30 questions in total) to gather information about the patient.

As can be seen in this short excerpt (below), the incoming nurse asks 10 questions. Some of the questions are in the form of clarification requests (e.g., lines 315, *Sunday?*, 317, *so for neuro observation?*), which mark the incoming nurse's active listening. Other

questions are asked to seek more information about the patient's status (e.g., line 300, *she can talk already?*), and to clarify further actions that are required by the incoming nurse (e.g., lines 311, *she is not for transfer?,* 320, *So, they still have monitoring the CPB?*).

Excerpt 22 (Night Shift) NGH – Intensive Care Unit

300	IN-N	She can talk already? [Crosstalk] Because before only
301	Nurse	No, she can talk alr::r in the morning,
302		She: she is requesting to talk to her daughter,
[lines 303-310, with providing more information about the patient, have been deleted]		
311	IN-N	She is not for transfer? [background noise]
312	Nurse	No, she is not. Uh, seen today by Dr. <Name>
313		the neurosurgeon.
314		According to him, he wants to give her <inaudible> on Sunday
315	IN-N	Sunday?
316	Nurse	Sunday
317	IN-N	So, for neuro observation?
318	Nurse	For neuro observation, and then to also stabilize the blood pressure,
319		because always on higher side. Uh: [
320	IN-N	So, they still have monitoring the CPB?
321	Nurse	CBB and ICB hourly, yes, still.
322		And then they want to keep the::
323		EVD let 10 centimeter above the (aditry mitris)
324		Let's go to medication sheet. (2.0)
325		Okay. She is on Lactulose, okay?
326	IN-N	Fifty ml?
327	Nurse	Fifty ml three times a day. It's given already.
[lines 328-335, with providing more information about the patient, have been deleted]		
336	IN-N	So umm, you did umm did not- umm 1800 given?
337	Nurse	Yeah. Given. 1800 given already. Uh, (2.0)
338		vancomycin, uh, it is every 8 hour, okay?
339		And then, they want, uh::, level it was due at 1400,
340		so because the order is late, so: [
341	IN-N	So, how much then?
342	Nurse	It was 18. Uh:: It was 16.8, and then he want to give, so we give already,
343		and then no need to send the level unless ordered by clinical [crosstalk]
344	IN-N	It's not every third dose? So, just waiting for the order pharmacy?
345	Nurse	For the order from the pharmacy, yes. [Crosstalk]

Note:
CPB: Abbreviation for cardiopulmonary bypass.
ICP: Abbreviation for intracranial pressure.
EVD: External ventricular drain, a medical device used to relieve intracranial pressure.

The departing nurse (female, Saudi) is also highly responsive and answers all the incoming nurse's queries. The nurse responds with affirmative repetitions to the incoming

nurse's questions, for example, lines 316 and 337 *Sunday, yeah given 1800 already given*, respectively; with explanations and further elaboration, for example, line 327 *fifty ml three times a day it is given already*; and with a lot of 'echoing,' for example, lines 327 and 337 *fifty ml*, *1800 given*, respectively, suggesting close alignment. Both nurses in this interaction show that successful handover is a joint accomplishment, giving evidence to Eggins and Slade's (2012) claim that best handovers are achieved interactionally, with the close collaboration between the departing and incoming team members.

Incoming nurses are also active in wards' handoffs. There are many instances across the dataset in which incoming nurses demonstrate active participation in the handoffs. Table 8 (below) presents the kind of topics that prompt the incoming nurses to interrupt, ask questions, and request clarifications. The analysis revealed that incoming nurses may interrupt the handoff intreraction to request information related to patients' health status, medications, procedures, and doctors' orders or doctors' decisions for patients. As shown in Table 8, most of the incoming nurses' queries are related to patients' health status. These findings may reflect the incoming nurses' interest in knowing up-to-date, health status information about the patients, to ensure the appropriate ongoing care that patients' will receive after this transactional point.

Table 8.

The Content of Incoming Nurses' Questions

Topics	Proportions	Sample
Patient's health status	31%	*He's end-of-life also?*
		Complains of cough?
Doctor orders/decisions	12%	*Why they ask for sputum culture if no sputum?*
		So he decided to low suction now?
Patient's medications	10%	*Is it daily?*
		Morphine, how many?
Patient's procedures	10%	*How often do you weigh?*
		Are we doing it at night or at noon?

Note: Other 37% of questions were either incomplete or inaudible thus were not included in this table.

In summary, this dataset revealed that both head nurses and incoming nurses used several types of questions during nursing handoff interactions. The use of questions during these interactions was informed by the need for more details, explanations, justifications and clarifications related to patients. The analysis revealed that short pauses from the departing nurses played a role in encouraging questions from head nurses and incoming nurses. The use of questions in this dataset was not linked to any specific stage of the handoff interaction, as questions showed up at various points of the interactions. As demonstrated earlier, head nurses used questions to: 1) gather more information; 2) investigate missed or wrongly presented information; and/or 3) investigate critical incidents happened during the previous shift. The analysis also showed that incoming nurses may ask questions related to patient's health status, medications, procedures, and doctors' orders. In the following section, I will examine the various interactional features which were used within the nursing handoff interactions.

Interactional Features

Discourse markers. Discourse markers emerged as an interactional feature which nurses used as they delivered the handoffs. Discourse markers are believed to be important in medical contexts, such as in provider-patient and/or nurse-patient interactions, because they help to manage the flow of talk. For instance, previous research found that discourse markers can be used to reflect doctors' power over the clinical interaction, to express provider involvement, to acknowledge patients' concerns, or tone down directives by nurses (Ainsworth-Vaughn, 1998; Holmes & Major, 2002; Staples, 2015). Therefore, discourse markers will be explored in more details in this section to expand this area of research and provide new insights on how discourse markers are used in authentic nurse-to-nurse interactions as well. For this part of the analysis, I used a concordance software, AntConc

(Anthony, 2012) to identify discourse markers in the dataset (both contexts) and to examine their surrounding context.

Staples (2015) who recently examined the use of discourse markers by US and international nurses in simulated nurse-patient interactions, found that nurses use a wide range of discourse markers in their interactions with patients. In the dataset of the present study, authentic nurse-to-nurse handoff interactions, I also found that nurses use various discourse markers to manage this type of face-to-face nursing discourse. Discourse markers served various essential functions connecting this naturally occurring discourse together. This is especially relevant in nursing handoffs, because the nurses must recall a great amount of information that happened in the long working hours of a day or night shift. In addition, in handoffs nurses are required to organize their talk in the most coherent way, to be presented as concisely as possible, in a brief period of time.

And then. In this dataset, nurses use the discourse marker *and then* (160 tokens in the entire dataset) to chronologically sequence their talk and the events that happened during their shifts. To illustrate, Excerpt 23 (below) is part of a morning handoff at the Surgical ward at NGH. The nurse (male, Filipino) in this example uses the discourse marker *and then* (underlined) four times to sequence his talk as well as the services that have been provided to the patient at the night shift.

Excerpt 23 (Morning Shift) NGH- Surgical Ward

712	Nurse	Mmm. *And then* he was seen by Dr. <Name> of Infectious Disease
713		He said there are two focus of infection
714		First, at the surgical site infection.
715		His suggestion is he needs drainage and
716		removal of the infected bone coverage
717		*And then* the second one is a post-possible biliary sepsis,
718		so he needs ERCP
719		Umm I don't know if they can reschedule it earlier,
720		so they can do it
721		*And then* he was also seen by Dr<Name> regarding
722		the Vancomycin coverage

723		He said that the duration of the antibiotic will be decided
724		by the ID, *and then*
725		(Vanco) level every fourth dose.

Note:
Biliary sepsis: an infection of the bile duct or the gall bladder.
ERCP: endoscopic retrograde cholangiopancreatography.

In this excerpt, the nurse is producing the *reporting stage* of the handoff. As discussed in research question one, at this stage, nurses report various procedures and/or services that have been provided to patients during their admissions. So, as one way to logically structure this amount of recalled information, as can be seen in this example, the nurse uses the discourse marker *and then* in lines 712, 717, and 721 (underlined) to sequence the events that happened during his shift and in line 724 (underlined) to move to the next stage of the handoff. He also uses the numeration (*first*, *second*) in lines 714 and 717, to further organize the information he presents in this stage.

In another example, Excerpt 24, another nurse (female, Filipino) in NGH-ICU uses the discourse marker *and then* (underlined) to sequence patient-related events that happen during her shift. As mentioned earlier, because of the critical conditions of patients, handoffs in the ICU are long and highly detailed. So, in this handoff which lasts for around ten minutes, the departing nurse uses the discourse marker *and then* 30 times to sequentially organize her handoff.

Excerpt 24 (Night Shift) NGH- Intensive Care Unit

26	Nurse	Pupils are irregular but barely <inaudible> He closing his eyes
27		CBS, he is having AF, but it's controlled. 80s up to 80s only
28		*And then*, around 4:50 a.m., according to <NAME>, BP dropped,
29		so they started low dose of uh: what is this?
30	IN-N	Nor EP
31	Nurse	Nor EP .
32		*And then*, when I came, it was off, but BP was 88,
33		*and then* dropped to 54,
34		so I asked her to <inaudible>
35		<inaudible> now, up two mics. <inaudible> just dropped down to
36		two while we are inserting central line at around five p.m.

Note:
AF: Atrial fibrillation (rapid, irregular electrical activity in the atria).
BP: Abbreviation for blood pressure.

As illustrated in the above examples, the chronological segmenting and the use of the discourse marker *and then* enhanced the organization of the presented patient information. It is important to note that nurses under the pressure of recalling a large amount of patient information; thus, using similar discourse features help the nurses to put things together in the most coherent way possible.

Anyway. It is also noted that nurses use the discourse marker *anyway* to manage and mark shifts in their talk. 38 instances of *anyway* occurred in this dataset. Most of the instances are teller-trigged; that is, nurses use *anyway* as a convenient device to signal the resumption of their handoffs when they deviate from the main topic (that is, when they provide details, elaborations, etc.). The data also revealed fewer instances of *anyway* which are listener-triggered; that is, when nurses use *anyway* to signal the departure from someone else's topic. The later happens when head nurses or incoming nurses interrupt handoffs (e.g., asking questions, requesting clarifications, etc.) or when environmental interruptions occur (e.g., background noise, relatives or doctors asking questions, etc.). In these cases, the nurses use listener-triggered *anyway* to take the floor and resume handoffs. Based on prosodic cues (increased pitch, stress, volume), most instances of using *anyway* in this dataset are in utterance-initial positions. In other words, nurses use *anyway* to start a new turn rather than to end a previous one.

To illustrate, the next excerpt is part of a handoff shift which takes place in the Oncology-Pediatric ward at the NGH. This excerpt demonstrates uses of two teller-trigged *anyway* by a nurse (female, Filipino) as she delivers her handoff with no external

interruptions, meaning that no one has interrupted or asked questions prior to the use of *anyway*.

Excerpt 25 (Morning Shift) NGH- Oncology/Pediatric Ward

280	Nurse	<inaudible> PICC line is */Kways/* [i.e., 'good']
281		it's a bit sluggish, uh so I flush, and (1.0)
282		this one, just look for a:: pull out, this one.
283		Anyway, TLS Q still continue 1700 hours to <inaudible>
284		penicillin eye drops was given by me once because the mother:
285		this patient I <inaudible> in the toilet <inaudible> fast motion eight
286		times. It's battery, and there are <inaudible>then this one uh,
287		the day before yesterday,
288		so just follow up maybe today, still no results.
289		<inaudible>just follow up with results.
290		Anyway, no vomiting night time.
291		this patient on regular Kytril given
292		last night fever, it's uh:: three o'clock in the morning
293		I've given paracetamol IV but spiked again, (29),
294		and he's shivering and Dr. <Name> and she said uh::
295		she already did the phone call she <inaudible>spiked four hours
296		Anyway, uh:: intake, output <inaudible>for this patient.
297		It <inaudible> */mafi/* [i.e., 'no'] pain

Note:
PICC: Acronym for peripherally inserted central catheter.
TLS: Tumor Lysis Syndrome.
Q: Abbreviation for [L.] quodque, each, every.
Kytril: A drug used to prevent nausea and vomiting caused by radiation therapy.

In lines 280-282, the nurse provides an elaboration of a problem with the PICC IV line (peripherally inserted central catheter) *it's a but sluggish*. The nurse continues explaining that she has solved the issue, *so I flush*, and then she proceeds with further information of how to solve this issue in case of reoccurance, *just look for a:: pull out, this one*. This elaboration makes the nurse diverge for a moment from the handoff structure; hence, she uses the discourse marker *anyway*, line 283, to signal the resumption of the rest of information in the handoff. As she continues her handoff, again the nurse shares additional details concerning a test that the incoming team needs to follow up with its results, which represents a hedged explicit request for the incoming team (line 289, *just follow up with results*). After that, the nurse uses *anyway*, again in line 290, to introduce the status stage of the handoff.

Within this stage, in lines 292-295, the nurse recalls an incident (*last night fever, it's uh:: three o'clock in the morning*), that happened during her night shift. She provides an explanation of this incident and the interventions that she has taken to resolve it. Then, she resumes her handoff in line 290, with the discourse marker *anyway*, which signals the end of information about the previous incident and the resumption of the status stage.

The next two examples illustrate the use of listener-triggered *anyway* in this data. Both Excerpts 26 and 27 come from a morning handoff shift at the Oncology-Pediatric ward at the NGH. Excerpt 26 illustrates how a nurse (female, Filipino) gets interrupted by the head nurse (female, South African) over several turns, which pauses her handoff for a while. I will discuss this excerpt in more detail in research question 4.

Excerpt 26 (Morning Shift) NGH- Oncology/Pediatric Ward

67	HN	From where do we get it?
68	Nurse	It's just endorse to me (1.0) yesterday
69		Maybe verbally, by the doctor [
70	HN	So you DON'T follow
71		We DON'T follow this
72	Nurse	We don't follow this.
73	HN	We should't
74		You don't take verbal orders for such things
75	Nurse	Right (1.0)
76		Anyway
77		Uh this patient had salmonella in the blood culture that was taken on
78		the 11th of this uh month

As seen in line 75, the nurse provides an agreement response to the head nurse's request that nurses should not follow verbal orders from doctors, and then after a short pause, the nurse uses *anyway* to continue with her handoff, in line 76.

Excerpt 27 provides another example of listener-triggered *anyway*. In this example, another nurse (female Filipino) uses the discourse marker *anyway* (line 98) to resume her handoff, after responding to a query that has been posed by an incoming nurse.

Excerpt 27 (Night Shift) NGH- Oncology/Pediatric Ward

93	Nurse	So he is on daily blood <inaudible> so I don't know who
94		made this uh:: time appointment to <inaudible>,
95		Anyway, uh I took it all blood <inaudible>
96	IN-N	Why they want the <inaudible?
07	Nurse	Because the <inaudible> [crosstalk]
98		So, anyway, for today, <inaudible> together because doctora <inaudible>
99		and today the platelets is only 23,

Excerpt 28 (below) provides another example of the use of *anyway*. This handoff is produced by a female Saudi nurse, and part of an afternoon handoff shift in the Urology ward at KFGH.

Excerpt 28 (3:00 p.m. Shift) KFGH- Urology Ward

156	Nurse	[Paper shuffling] [Nurse flips through patient's file]
157	IN-N	This one, he broke his hand
158	Nurse	Broke hand?
159		This one, his name is just */Ish Esmo, meen?/*
160		[i.e., 'what's his name?, who's this patient?']
161		<Patient's first name> Under Dr. <Name>
162		Anyway . seen by the group today,
163		they start in the morning uhm:: and uh Anyway, this one,
164		I don't know what you want to start? (2.0) /ya rabiii/ [i.e., 'oh my God']
[lines 165-174, with the nurse provides information about the patient, have been deleted]		
175	IN-N	Does it say when they're going to start?
176	Nurse	Uh:: I don't know what they meaning by that
177		But anyway, we'll follow up the doctor no one answer
178		We don't know */yaani/* [i.e., 'I mean'] how come
179		Anyway . if they will enter a start, they will arrange with ultrasound,

In this example, the Saudi nurse uses *anyway* right after introducing patient information with some degree of uncertainty. She uses *anyway*, line 162, when she hesitantly introduces the patient, *this one, his name is just /Ish Esmo, meen?/ [i.e., 'what's the patient name?]*. Also in line 179, the nurse uses *anyway* after expressing her lack of knowledge to the incoming team *we don't know /yaani/ [i.e., 'I mean'] how come*, in line 178. The nurse also uses *anyway* after introducing incomplete information, line 63, *they start in the morning uhm:: and uh Anyway*, and after failing to respond to incoming team's query, line 176 *Uh:: I don't know what they meaning by that but, anyway*. Hence, the use of the discourse marker *anyway* by

some Saudi nurses follow some indication of missing or uncertain information. In other words, the nurse is using the discourse marker *anyway* as a 'face-saving' strategy, which allows her to move to the next topic when she is not sure about patient's information.

Okay. Okay[7] is another discourse marker that is frequently used by nurses during nursing handoff (134 tokens). Nurses use this discourse marker as a convenient device to serve various functions, including; 1) marking the beginning of the handoff and/or the beginning of a new topic in the handoff (e.g., *Okay, good evening ladies*, *okay he's a no code*), 2) marking the end of a topic or the handoff session itself (*okay that's it*), 3) marking the end on an utterance that checks comprehension (usually spoken with rising intonation, which indicates the form of question *okay?*) (e.g., *he want medical report in Arabic, okay?*), and 4) marking acknowledgement, agreement or acceptance of what other nurses or head nurses say, and vice versa. In this dataset, most instances of the discourse marker *okay* serve to express acknowledgment or agreement.

Excerpt 29 (below), provides several examples of how nurses use *okay* to serve various functions. As seen, the head nurse (female, Saudi) uses *okay* in line 30 to acknowledge the nurse's (female, Filipino) request that the incoming team needs to follow up with the social worker regarding a commode that has been requested for the patient.

Excerpt 29 (Morning Shift) NGH- Surgical Ward

26	Nurse	This one, PT already start on bed to chair. OT need wheelchair.
27		ANYWAY, the wheelchair already provided by the social
28		worker just to follow up with the (1.0)
29		uh social worker regarding the commode .
30	HN	Okay. The commode is not available and they spoke to the care
31		clinic to provide this . Okay?
32	Nurse	Oka::ay↓
33		Intake 1750, output 1700 (short Pause)
34		*/Khalas/* [i.e., 'Done']

[7] *Okay* as an adjective (e.g., *patient is okay*) was not coded as a discourse marker.

The head nurse provides more details about this commode request and uses *okay?*, line 31, to check the nurses' comprehension. The nurse then uses *oka::ay* with a falling tone (line 32), to mark the beginning of additional information about the same patient.

Yeah/Yes/You know/Oh. Other discourse markers such as *yeah* (155), *yes* (66), *you know* (21), and *oh* (17) were also used in this type of face-to-face interaction to express involvement and interactive listening (Vasquez, 2014). For example, *yes* and *yeah* are commonly used as listener response token (e.g., Excerpt 30).

Excerpt 30 (Morning Shift) NGH- Oncology/Pediatric Ward

444	IN-N	They're random
445	HN	Yeah
446	IN-N	I remember his procedure. We don't have a problem

Nurses also use the discourse marker *you know* either to check that the other nurses have shared knowledge about what is being said (e.g., Excerpt 31), and/or to gain some time to think or rephrase their response as they respond back to queries from the incoming team (e.g., Excerpt 32).

Excerpt 31 (Night Shift) NGH- Oncology/Palliative Care Ward

95	Nurse	The ONLY THING in his labs, uh his his getting
96		you know his A and C is getting low, neutropenic <inaudible>
97		Now, it's .63. So, I asked the team, they ordered for him 600 mcg

Note:
Neutropenic: An abnormally low level of neutrophils in the blood. Neutrophils are white blood cells (WBCs) produced in the bone marrow that ingest bacteria.

Excerpt 32 (Night Shift) NGH- Intensive Care Unit

296	Nurse	It's ranging now from 14 to 15, sometimes she is very drowsy and sleepy
297	IN-N	Confused?
298	Nurse	But, yeah. Yeah. But, you know, to talk to her loudly
299		so she can communicate with you

To summarize, the data revealed that nurses use various discourse markers such as *and then*, *anyway*, *okay*, *yeah*, *yes*, *you know*, with some frequencies to manage the flow of talk in this type of discourse. The use of discourse markers allows nurses to connect events, report various patient related procedures, organize and present information about what happened during their twelve-hours shifts.

Hesitation markers/backchannels/overlap. In addition to questions and discourse markers, the rest of this section examines hesitation markers, backchannels, and overlap as other important interactional features found in this dataset (Staples, 2015; Vasquez, 2014).

Hesitation markers. Hesitation markers, such as *uh* and *um* were frequent (700 instances of *uh* and 71 instances of *um*). Notably, nurses tend to use *uh* as the most frequent hesitation marker. Nurses use hesitation markers mostly to allow themselves time to think and recall information. As noted earlier, nurses are under pressure to recall various patient-related events that happened during their twelve-hours shifts. Not to mention that some nurses take care of more than one patient during their shifts, which doubles the cognitive load of recalling information. This also may explain the short unfilled pauses in nurses' handoff interactions. Consequently, the use of hesitation markers by nurses in this setting may be related to these aspects that are specific to this type of interaction.

Table 9.

Examples of the Use of Hesitation Markers uh and um

Source	Examples
NGH-Surgical	*So this patient uh uh yesterday is seen by Dr. <Name> All the clips removed and then the x-ray was done.* *uh* he was seen at 6 by the ID (1.0) *uh* now they are still waiting for the culture *And then uh yesterday spoke with the fathe::r.* *Then uh (1.0) this ONE is with pre- and postpradial plus 8 hours fasting* *Uhh:: I did yesterday . SO (2.0)* *um yesterday this patient during endorsement, the cannula was um (indurated)*

NGH-General pediatric	*so when you give the second dose of IV Methyl this afternoon uh 5 p.m or 6 p.m later so um the doctor will order um change*
KFGH	*Uh:: I don't know what they meaning by that*
Urology	*Uh:: I follow up uh ICU, Dr. <Name> and told her about TB patient uh admission in 1 uh 4 uh 30*

In Table 9 (above), I provide examples of the use of *uh* and *um* by nurses, these examples come from various handoffs in this dataset. The discourse marker *uh* seems to appear a lot in the utterance-initial position.

Backchannels. As described in literature, backchanneling is an important device which signals listenership (Staples, 2015; Ainsworth-Vaughn, 2003). It is often used to express involvement within medical encounters and to encourage the continuity of interactions. Besides *okay*, in this dataset, it was found that nurses use other backchannels devices such as *uh-huh*, *yeah*, and *Mmm* when they interact with each other. Excerpts 33 and 34 come from a morning handoff shift in the Surgical ward (NGH). Both excerpts illustrate the use of backchannels. In Excerpt 33, for example, after the nurse introduces an important note, in lines 114-115. After checking the introduced information by the nurse, the head nurse uses *uh-huh*, in line 118, to encourage the nurse to proceed in explaining the issue.

Excerpt 33 (Morning Shift) NGH-Surgical Ward

114	Nurse	This patient is planning for left knee ACL reconstruction today,
115		UHH:: in the OR list, it's written as a RIGHT (2.0) okay
116	HN	OR list, right.
117	Nurse	Yeah. OR list, right
118	HN	Uh-huh <BC>
119	Nurse	BUT actually, patient is going for the left side

Note:
ACL: Abbreviation for anterior cruciate ligament.
OR: Abbreviation for operation room.

Excerpt 34 (below) also provides another example of backchanneling as the nurse uses *yeah*, in line 479, to verbally mark that she is actively listening to the information provided by the head nurse.

Excerpt 34 (Morning Shift) NGH-Surgical Ward

478	HN	Yeah <DM>, because according to him, that's
479	Nurse	Yeah <BC>
480	HN	Wheelchair broken
481	Nurse	Oh, yeah <DM>
482	HN	Their own wheelchair
483	Nurse	Total intake is 1800. Total output is 1150 (6.0)

Active listening is important in this type of interaction as it indicates involvement and joint accomplishment. It is considered as a discourse method which allows interlocutors to continue discussing and elaborating on their talk (Ainsworth-Vaughn, 1998; Staples, 2015)

Overlap. Overlapping, which is often called interruption, is another interactional feature to be examined in this section. As in Staples (2015), overlapping in this study is identified by the second speaker speech that begins before the first speaker ends his or her turn, excluding backchanneling (see Appendix F). In this dataset, overlap is more frequent when head nurses and/or incoming nurses play an active role in the handoff interaction. In other words, head nurses or nurses who have questions, clarification requests, etc. often overlapped in their talk with the nurses who are producing the handoffs.

Excerpt 35 (below) comes from a morning shift in the Surgical ward, NGH. It illustrates the use of overlap by the female Saudi head nurse. As can be seen, the head nurse begins a question in line 367 before the nurse (male, Filipino) gets the chance to finish his turn. The nurse responds to the question in line 368, and after a short pause he resumes the handoff. However, once again, the head nurse begins another question before the nurse ends his turn, line 370. This example in which the head nurse's questions overlap with the nurse

statements shows how overlapping in this context is motivated by the need to request more details and information related to patient care.

Excerpt 35 (Morning Shift) NGH- Surgical Ward

363	Nurse	This patient is GCS 15 out of 15, Braden of 21.
364		(NUS) of 1 because of the heart
365		rate It's 90.
366		And then uh he's walki:::ng [
367	HN	ID intends, is it Educator or public nurse?
368	Nurse	uh public nurse, ma'am (1.0)
369		ahmm uh And then he's:: [
370	HN	And with dietitian referral done for this patient
371		because of it's from Nursing?
372	Nurse	umm NO, nothing yet, ma'am.
373	HN	Okay. Ask the dietitian from nursing

Thus, in this dataset, overlap can be viewed as an efficient interactional feature (Staples, 2016) as it is initiated to immediately request and clarify patient-related information; hence, enhancing rather than hindering the handoff interactions.

Code-switching. The final interactional feature that will be discussed in this section is code-switching, which refers to the alternation between two or more languages. Code-switching emerged as a distinctive interactional feature in this dataset. The data analysis revealed that Saudi nurses, who are native speakers of Arabic, often use code-switching to Arabic as they deliver their handoffs, specifically at KFGH. To illustrate, I provide Excerpt 36 which comes from the Urology ward at KFGH. In this very brief excerpt, the female Saudi nurse code-switches into Arabic four times. Though the codeswitching is at the word level the Arabic words fill in important semantic functions that could be missed by the incoming nurses who are non-native speakers of Arabic. In this example, the incoming nurse is a female Indian nurse.

Excerpt 36 (3:00 p.m. Shift) KFGH- Urology Ward

106	Nurse	it is already 2 o'clock. So tomorrow it will be taken
107		*/tayeb?/* [i.e., 'okay?'] and after the parme cath

108 insert */khalas/* [i.e., 'done'] here [nurse flips through the
109 file] (2.0) */tayeb?/* [i.e., 'okay?'] done
110 the procedure What else uh */fi/* [i.e., 'there is'] consent.
111 and there is also consent for dialysis.

Note:

Port-a-cath: A proprietary indwelling device that provides long-term IV access for blood products, drugs, high-dose chemotherapy. (*parme cath* is a phonological error by the nurse)

Dialysis: A method of artificial kidney function.

For example, the Saudi nurse uses the Arabic word */tayeb?/*, in lines 107 and 109, which is equivalent to the discourse marker *okay?*, to check incoming nurse's comprehension. As can be noticed, there is no response from the incoming nurse at these points, which might indicate that she does not know what /*tayeb?*/ means. The other two instances of code-switching have more essential meanings related to procedures, and therefore need to be comprehended by the incoming nurse. For instance, when the Saudi nurse says *and after the parme cath insert /khalas/*, she means that the procedure of inserting patient's port-a-cath has been done. Thus, if the incoming nurse missed this meaning, she may unnecessarily prepare for doing the procedure herself (e.g., preparing the port-a-cath device, the tube, the sedation required for the procedure, etc.). In the final code-switching example, the Saudi nurse uses the Arabic word /fi/ *uh /fi/ consent*, line 110, meaning the patient has consented to the port-a-cath procedure. Again, if the incoming nurse does not know these meanings, this may lead to an unnecessary repetition of work.

Interestingly, the analysis also revealed that many international nurses, who are non-native speakers of Arabic, code-switch to Arabic as they produce nursing handoffs. For example, Excerpt 37 and 38 illustrate examples of code-switching to Arabic by a Filipino and an Indian nurse, respectively. Both excerpts are part of a morning handoff in the Oncology-Pediatric ward, NGH. The nursing team in this ward is guided by a South African head nurse and most of the nurses (16 nurses) are international nurses (there was only one Saudi nurse among the team). Though most of the interlocutors in this nursing team are non-native

speakers of Arabic, including the nurses who are producing the handoffs in Excerpts 37 (female, Filipino) and 38 (Female, Indian), yet, we see the nurses code-switch into Arabic at various turns in both examples. Again, the codeswitching is at the word level; however, these words fulfill important semantic functions in the handoff interactions.

Excerpt 37 (Morning Shift) NGH- Oncology/Pediatric Ward

26	Nurse	anyway, this patient q12 hourly blood works
27		I done the uh CBC,
28		and today TLS /*kaman/* [i.e., 'also done']
29		stomach q 6 hourly
30		I done the uh repeat potassium /*Ashan/* [i.e., 'because']
31		12 midnight But the potassium come back slow, 2 point something,
32		so I did uh At 3:00 it's 12.5 when I repeat
33		at 2:00 /*Kaman/* [i.e., 'also done'] I did

[lines 34-38 with the nurse provides more information about the patient, have been deleted]

39		So, yesterday::, uh:: (1.0) uh long story this patient
40		*/Katee::er/* [i.e., 'lots of'] blood works done
41		for him that's why six o'clock, just to follow up .

Note:
CBC: Abbreviation for complete blood count.
Blood work: A popular term referring to any diagnostic testing performed on the fluid or cells of peripheral blood.

Excerpt 38 (Morning Shift) NGH- Oncology/Pediatric Ward

267	Nurse	so, just follow up::p Anyway, uh:: /*Mafi/* [i.e.,'no'] fever,
268		<inaudible> this one, [crosstalk] Yes.
269		Let <inaudible crosstalk>,
270		blood works? not yet <inaudible> /*Malesh/* [i.e., 'sorry']

For international nurses, code-switching into Arabic may reflect nurses' years of working either in these hospitals, or other hospitals in Saudi Arabia, or maybe hospitals in other Arabic speaking countries. For example, in Excerpt 37 (above), the nurse (female, Filipino) used /*Kaman*/ (meaning 'also done') to indicate that additional procedure has been also done. She also uses /*ashan*/ (meaning 'because') to indicate the reason of repeating patient's blood test. As mentioned earlier, though most of code-switching examples in this dataset are only at the word-level, they are still essential to understand the flow of the

handover. That said, this interactional feature may represent an obstacle to comprehension, in cases were not all nurses are familiar with these Arabic words. Background questionnaires revealed that some nurses are new in this setting and know no Arabic at all, which means that in these contexts, codeswitching into Arabic may be a problematic component in these interactions.

To summarize, similar to Staples (2015), the nurses in this setting used a wide range of interactional features to manage nurse-to-nurse handoff interactions. Unique to this context, code-switching emerged as a distinctive interactional feature which various international nurses employed in handoffs. As discussed earlier, this interactional feature may or may not be problematic; thus, further research is needed.

Interpersonal Features

This part of research question two explores the pragmatic aspect of nursing handoffs; that is, the interpersonal dimensions of nursing interactions (Halliday & Matthiessen, 2004). Specifically, I examine how nurses use lexico-grammatical features as they interact with each other, including the use of involvement features such as personal pronouns and/or humor (Eggins & Slade, 1997; Staples, 2015; Halliday & Matthiessen, 2004; Vásquez, 2014) in nursing handoff interactions.

Typical to all spoken discourse, nurses use the first-person pronoun *I* frequently to report patient-related procedures and services that they provide to patients during their shifts; thus, nurses take the ownership of their actions. In research question three section, I will illustrate the confusion which may occur when nurses do not use the first-person singular pronoun *I* to report what has been done during their shifts. The data also showed that, generally, nurses use less second-person singular pronoun *you*, and if used, they tend to use the indefinite form of *you* (i.e., referring to unspecified person), as opposed to head nurses

who use the 2nd person pronoun *you* to address a specific nurse, typically the nurse who is delivering the handoff.

Excerpt 39 illustrates how a nurse (female, Filipino) uses *you* (underlined) in the form of a generic reference, which in this case does not necessary address any specific nurse in the team.

Excerpt 39 (Morning Shift) NGH- Oncology/Pediatric Ward

640	Nurse	Goal rate is 280. So at 6:00 AM, I feed at 180
641		So at 10:00 AM, *you* will feed it still at 180,
642		and then *you* will increase on 2:00

In contrast, Excerpt 40 demonstrates how the head nurse uses the second-person pronoun *you* (underlined) six times in a brief turn, directly addressing the nurse who is producing the handoff.

Excerpt 40 (Morning Shift) NGH- Surgical Ward

745	HN	You are doing the assessment for the cannula site?
746	Nurse	Uh I will do boss, cannula site
747	HN	What do you mean you will do?
748		You did it physically or you did not get to it or
749		you did not do it?
750	Nurse	It's there . It's there . It's in the:: it's in the flow sheet
751	HN	Uh-huh
752	Nurse	I will just add it to my documentation
753	HN	You did it in the flow sheet?
754	Nurse	Yes

Note:
Assessment: An evaluation or appraisal of a condition.
Cannula: A tube for insertion into a vessel, duct, or cavity. During insertion its lumen is usually occupied by a trocar; following placement, the trocar is removed and the cannula remains patent as a channel for the flow of fluids.
Flow sheet: A patient care record that documents interventions through the use of check marks and brief notations.

The first use of *you* by the head nurse in line 745 *you are doing the assessment for the cannula site?* addresses a declarative question to the nurse (male, Filipino) who is delivering the handoff. In this question, the head nurse wants to know if the nurse has already performed the assessment procedure for the cannula insertion. When patients receive

continuous I.V infusion, nurses are required to observe the cannula site and check the rate of infusion hourly and document the fluid balance in a special flowsheet.

The nurse responds in line 746 with a hesitation marker, *uh*, followed by a statement indicating that he will perform the medical procedure, *I will do boss*. Since it is the end of shift handover, the use of the future tense by the nurse creates a moment of confusion. This is another example in which a tense shift creates meaning confusion between the nurses in the handoff interaction. The head nurse expresses her dissatisfaction with the nurse's response by asking a series of four questions in her brief turn, using the second-person pronoun *you* 5 times.

In line 747, she first asks *what do you mean you will do?,* repeating the nurse's use of future modal *will*. Before the nurse gets the chance to respond, the head nurse narrows down the nurse's answering options into three alternatives. The first alternative is that if he did perform the procedure with the patient but he missed writing the assessment in the handoff sheet (line 748, *you did it physically?*). The second option is that if he did not perform the assessment procedure at all (line 748, *you did not get to it?*). The final option expresses that he has not done it, both physically as well as in the assessment afterwards. The nurse clarifies this confusion in line 750 (*it's in the flow sheet*) confirming that he has done the assessment procedure and written the results in the flow sheet. In line 752, the nurse further clarifies that he just has missed adding the assessment results in the handoff sheet and that he will do the documentation later.

This example represents one of many instances in which head nurses use the second-person pronoun *you* to direct their questions and clarification requests to the nurses who are delivering the handoffs. Ainsworth-Vaughn (2003) indicated that this use of *you* may reflect "an obvious exercise of control" over the interaction (Ainsworth-Vaughn, 2003, p. 462). This topic will further be explored in research question four.

Other forms of personal pronouns are also found in this dataset. To illustrate, I provide Excerpt 41 (below), which is part of a morning handoff shift in the Oncology-Pediatric ward (NGH), and is produced by a female Filipino nurse. In this example, and based on field observations, the nurse introduces a social issue related to the mother of one of the pediatric patients in this ward. The nurse indicates that the mother, who is staying with her child (the patient), spends the night socializing with other mothers in the ward, and then she sleeps during the day. This situation is problematic for the nurses who need to perform various patient procedures during the day; however, they are being prevented by the mother, who does not want to be disturbed.

This note triggers a long, monologic turn (lines 83 to 144) by the head nurse (female, South African) who shares with the team the details of this situation. In her detailed description of this social issue, the head nurse uses third-person plural pronoun *they* as she refers to patients' mothers, (e.g., lines 97-98 *they congregate at night*, *they want to sleep in the morning*), and first-person plural pronouns *we* and *us*, as she refers to nurses, including herself (e.g., lines 122-124 *we will know from the handover*, *we actually excuse the mother*, *we are not that bad*). This use of personal pronouns (*we* vs. *they*) creates a sense of solidarity among the nurse participants in this discourse (Eggins & Slade, 1997; Staples, 2015; Vásquez, 2014).

Excerpt 41 (Morning Shift) NGH- Oncology/Pediatric Ward

83	Nurse	and uh regarding uh there was a social issue in the morning
84		where the mother was not waking up but last
85	HN	Um::
86	Nurse	night she to managed sleep by 9:30 she was hungry
87		and again she woke up at 11:30
88	HN	sure
89	Nurse	again she slept again she woke up by 6:30
90	HN	we had a very long issue <inaudible> when she stay very long time,
91		they don't want to sleep at night
92		and in the morning when nurses come in that to to , you
93		know uh to [
94	Nurse	Work
95	HN	yeah kids need to wash they need to eat.

96 The child is not going to to get up and eat when the mother is sleeping.
97 Now they congregate at night
98 ALL this social uh environment and then they want to sleep in the
99 morning it doesn't HAPPEN you are in the hospital
100 Nurse Yeah
101 HN if they do it at home yes it is a different environment
102 and they fight messy [imitating screaming sound]
103 and , yeah, I had to call patient relation explain to her because what they
104 do the patient relation take rounds, they say completely different thing..
105 <inaudible> now if you are not here you hear what they say <inaudible>
[lines 106-117 with the HN talking about a clash that happened between the mother and the cleaner, have been deleted]
118 and until up to now I will definitely defend the
119 nurses because they are doing the right thing <inaudible>
120 If they are wrong, you are wrong,
121 if the mother are wrong they are wrong and if they are right they are
122 right. And we will know from the handover, if the child was very sick,
123 the child never slept we actually excuse the mother,
124 she would sleep with the child we are not that bad,
125 but the way they drive the information to the TRO o::oh
126 <Nurses laugh> yeah, so that's why we need..
127 I started now I am taking reports
128 to the office so let me see because they don't know from the other side
129 what is going on here yeah <0.02>
130 Nurse Yasser, he will be will be due for next chemo D22 that will be on 14 and
131 he is fine, he almost eaten <inaudible>
132 HN now the good thing
133 Nurse And uh: [
134 HN this one this one
135 SORRY, it makes me laugh
136 if we need to transfer them to another ward, ward 1.. what does happen?
137 <Nurses laugh> if we do have bed
138 we have soft heart , you know, and we are so compassionate
139 and we protect them so much. They want us to be
140 relax even with wrong things which is which unexpected.
141 They are here to assist us to get the things right,
142 and if they don't cooperate we [HN imitates sound of slamming door]
143 <Nurses laugh> yeah, and once you do this
144 [HN imitates screaming sound] <Nurses laugh> anyway, yeah go, sorry

Examining the same example, Excerpt 41, the head nurse uses sarcasm, which is a type of humor that has been documented in other types of medical discourse (Fioramonte, 2014). The head nurse, who is still using first- and third-person pronouns, imitates the sound of a slamming door indicating that the nursing team in this ward can transfer those patients (and the patients' mothers) to a different ward in the event that the mothers do not show

cooperation and follow the hospital regulations (line 141, *they are here to assist us, and if they don't cooperate we [HN imitates sound of slamming door]*). The nurses acknowledge this sarcastic remark with laughs (line 143). The head nurse then proceeds with anticipating the mothers' reaction towards such decision, by imitating the mothers' screaming in fear (line 143, *and once we do this [HN imitates screaming sound]*). Again, the nurses acknowledge this remark of imagining the response of the other with laughs. Although those sarcastic remarks are initiated by the head nurse only, they serve as a resource to signal both solidarity (Eggins & Slade, 1997). Doing so, the head nurse establishes rapport among the nursing team in this ward.

The data also revealed few instances where nurses shift footing from serious, work-related talk to less serious and humorous mode which is related to handoffs or patients' incidents. For example, in Excerpt 42, the head nurse (female, Saudi) announces the beginning of the next handoff with a declarative question in line 487, *Room5?* With no response from the incoming team, the head nurse repeats the question, this time with a louder, stressed room number *Room FIVE?*, in line 487. This time, the nurse (male, Filipino) who was not aware that he is the one who is in-charge of this room, responds in a surprise with a rising intonation of the change-of-state discourse marker *oh*↑ (Schiffrin, 2006), in line 488. This incident made the whole team laughs about it. The head nurse then humorously requests the departing male nurse's GCS, that is, his level of consciousness. The whole team bursts into laughter.

Excerpt 42 (Morning Shift) NGH- Surgical Ward

487	HN	Room 5? (2.0) Room FIVE?
488	Nurse	oh↑, 51 and then:: <laughter>
489		<laughter> [the whole team is laughing]
490	HN	GCS! <laughter> [everybody is laughing]
491		<laughter>

In another humorous incident, this time related to a patient's relative, the nurse (female, Filipino) responds to the head nurse's question about whether the patient has spent the night alone, or with a guardian relative. The nurse explains that the patient has been accompanied by a friend of the patient's son (it is a surgical ward, so it is assumed that the patient is bed-ridden and needs a companion during his hospital stay). Then after a short pause, line 671, the nurse remarks, *always going out*. The head nurse follows this remark with a clarification question, in line 672 (t*he patient or the sitter?*). The nurse confirms that it is the sitter who is always going out during the night shift (the hospital's regulations disallow such actions). Again, this incident makes the entire team laugh.

Excerpt 43 (Morning Shift) NGH- Surgical Ward

669	HN	The patient alone the whole night?
670	Nurse	No. He has another sitter that is not his son,
671		that is the friend of the son, but (2.0) always going out
672	HN	The patient or the sitter?
673	Nurse	The sitter
674		<laughter>

Previous research showed that institutional interactions are goal-oriented and typically draw on a more context-specific and restricted interactional practices than casual interactions (Heritage & Clayman, 2010; Idema, 2007). However, as this data showed, some instances of relational work occasionally do occur in this type of nursing discourse, which serve to maintain healthy and good interpersonal relations among the nursing team. The findings of this analysis revealed that head nurses are typically the participants who initiate and maintain the relational work in these handoff interactions. This finding highlights the vital role that head nurses play in building team-membership.

Conclusion

Taken together, the aim of research question two was to explore the use of various discourse pragmatic (linguistic, interactional, and interpersonal) features by nurses during handoff interactions. With this question, I aimed to provide a detailed description of the actual language use in nursing handoff interactions in this setting. To date, there have been very few studies which examined authentic nurse-to-nurse handoff interactions (e.g., Slade & Eggins, 2016). This study expands these investigations and provides an overview of how nurses use various discourse pragmatic features to carry on handoff interactions and how do they collaboratively work together to negotiate patient-related issues. Aligning with Staples (2015) who examined simulated nurse-patient discourse, this part of the study adds to this body of research concerning the use of various discourse pragmatic features, including questions, discourse markers, backchannels, overlaps, code-switching, and humor to construct the medical discourse, that is, in this study, the nursing handoffs. Code-switching emerged as a distinctive interactional feature that is specific to this context. Various international nurses used code-switching as a convenient interactional feature to fill in various meanings in their handoffs. As discussed earlier, this interactional feature may or may not be problematic; thus, further research is needed. The data also showed that nurses use interpersonal features including personal pronouns, sarcasm, and humor to lighten the interactions and to emphasize the team co-membership.

Research question three, in the next chapter, will build on these findings. I will further explore how the use or misuse of discourse pragmatic features may impact the recommended best practices for the handoff interactions. The next section provides some selected examples to provide a more detailed examination of the handoff interactions, specifically to explore the quality of these interactions.

CHAPTER FIVE:

DATA ANALYSIS

This chapter provides an analysis of specific handoff interactions to 1) identify the discourse pragmatic features that contribute to the quality of the nursing handoff interactions, and 2) shed light on the impact of the hierarchal structure between the nurses (head nurse vs. staff nurse) on the nursing handoff interactions. To answer research question three (*Which of the discourse features observed align with the recommended best practices for nursing handoff interactions?)*, this section will draw on the previously examined discourse pragmatic features in research question two to determine which of these features may or may not align with the recommended best practices of the nursing handoffs in both settings. To answer research question four (*To what extent are nurses' positions (hierarchal structure) are manifested and/or (re)produced in these nursing handoff interactions?*), I focus on the discourse of head nurses.

Research Question Three

To answer research question three, I first provide a general overview of the various discourse features and communication strategies which appear to enhance the handoff interactions if utilized by nurses (departing and incoming). I utilize illustrative examples from various handoffs in this dataset to support this analysis. Then, in the second section of research question three, I focus on, and thoroughly examine, handoffs which appeared to be the most problematic in this dataset. Using these examples, I will highlight the discourse features and communication strategies that nurses used in these handoff interactions, which might lead to less successful handoffs. The nursing handoff effectiveness in this study is operationalized as the recommended best practices. In other words, to what extent do nurses

provide detailed and complete patient information, as well as a clear care plan for the incoming team to act upon. The primary aim of this part of the study is to provide insights into the discursive features that lead to communicatively effective nursing handoffs; such insights may later benefit nursing training programs in these hospitals.

As mentioned in chapters two and three, Eggins and Slade (2012) were the first to examine clinical handovers in authentic interactions between doctors. The authors identified various communication strategies, including *interactional features* (e.g., clear framing, fluent and confident style, production of multiple-clause turns and chunks) and *informational features* (e.g., logical sequence of presented information, recommendations for incoming team, presenting information with confidence and certainty) which departing teams could use to enhance the effectiveness of clinical handovers (i.e., doctor-to-doctor handovers). The authors also identified communication strategies for effective handovers for the incoming team, as well, such as playing an active role in checking and clarifying presented information.

As for nursing discourse, Staples (2015) statistically examined the relationship between various linguistic and interactional features, and the effectiveness of simulated nurse-patient assessment interactions. Staples found that the discourse features that the nurses use in these interactions play a role in creating thorough nurse-patient interactions. For example, (through correlations) Staples found that the use of backchannels and yes/no questions in simulated nurse-patient interactions reflected more discussion of patient's condition; accordingly, this resulted in more thorough nurse-patient assessment interactions. This study of nurse-to-nurse handoff interactions expands this line of inquiry by focusing on nurse-to-nurse handoff interactions.

To begin with, identical to clinical handovers, the data suggests that nursing handovers in this dataset were more organized when information was presented in logically

structured sequence. For example, the analysis in research question one illustrated that nursing handoffs at NGH are presented in a consistent manner across all hospital wards. This is because all nurses are following the handoff chart. In other words, the clustering of information of each stage was produced similarly by all nurses in the observed wards, even when the nurses went back and forth between the stages. It appears that this type of presentation, along with the written handoff chart, played a key role in establishing a shared knowledge between the incoming and departing nursing teams. Rather than wondering about the structure of the handoff itself and what to say or what expect next, this shared structure helped the nurses, and particularly incoming and head nurses, to focus more on gathering supplemental patient details as needed; that is, they could attend specifically to gathering the patient's information that was absent/missing in the handoff or not included in the handoff chart. In other words, when nurses expected the logical, Systemic flow of information in each stage of the handoff, this eased the transferring and receiving of information and shifted nurses' attention to the content of the handoff rather than the way it was presented. Nurses could focus on the content of the discursive exchange due to uniformity in interactional form.

To illustrate this point, Table 10 (below) provides the *introductory stage* of two different handoffs. Both handoffs are bedside handoffs and produced by Saudi, female nurses. However, handoff 1 is part of an afternoon shift at KFGH, which follows SBAR-like protocol, and handoff 2 is part of a night shift at NGH, which follows its formulated handoff sheet. As mentioned earlier, in this example, I focus only on the *introductory stage* of the handoff in which the nurse is required to greet the team, introduce patient identification, state the reason of admission, concisely state patient's situation and state (that is, for SBAR protocol), and introduce diagnosis and medical history (that is, for NGH handoff model).

Table 10.
Contrasting Introductory Examples (KFGH vs. NGH)

Handoff 1 – King Fahad Hospital (Female Saudi)			Handoff 2 – National Guard Hospital (Female Saudi)		
1	Nurse	uh:: Good evening,	204	Nurse	Okay, good evening
2		this patient <Patient's First Name> under Doctor <doctor's Name>	205	IN-N	[crosstalk] Yes, hi
			206	Nurse	Um, Bed 21. <Patient's Name> MRN <File Number>
3		uh both <inaudible> transfer (2.0) uh the patient hypertension uh today, seen patient by group	207		uh:: She is female patient, 59 years old
			208	IN-N	Okay
4		(3.0) [nurse shuffles through patient's file] this one medication sheet (5.0)	209	Nurse	Under neurosurgery, Dr. <Doctor's Name> She's letter of
			210		acception, limited only for neurosurgery.
			211		Um, this patient is uh:: admitted, accepted transferred
			212		from uh Al-Hada Hospital.
			213		He uh admitted, uh:: um, to ICU on third of November for
			214		embolization and (clotting)
			215		So, then, this is done on third of uh:: November.
			216		So, she came intubated.
			217		Case of rupture in, um, aneurism, right posterior
			218		(communicated) arteries hemorrhage, intraventricular hemorrhage,
			219		acute hydrocephalus.

The aim of this example is to illustrate how the logical presentation of information strengthens every stage of the handoff and facilitates the presentation of the next stage. Examining Handoff 1, following *the situation component* of SBAR, the nurse begins the handoff with greetings, line 1. Then, she introduces the patient's first name and the name of the doctor who is in-charge of the patient, line 2. Then, she introduces information, probably

related to the reason of admission as she mentions *patient hypertension*, line 2 (it is hard to tell because part of the information was inaudible). After that, the nurse introduces expected, general information in line 3; that is, she explains that the doctors have checked on the patient in morning rounds. It should be noted that doctors' morning rounds are typical procedures that happen daily in all admission wards and in which doctors check on their patients to examine their progress and make decisions accordingly. The nurse then flips through the patient's file and refers the team to the medication sheet. After a five-second pause, the nurse ends this stage of the handoff.

The nurse in Handoff 2 starts the handoff with a more detailed *introductory stage*. She starts with greetings to the incoming nurse, who also responds back with greetings, lines 204-205. Then, the nurse provides much more detailed information about the patient's identity (bed number, full name, file number, gender, age, and doctor in-charge), in lines 206-207. The nurse then proceeds with the admission information, the patient's history, and the patient's diagnosis information (lines 210 -219).

The *introductory stage* is an essential stage in the handoff interaction and which ensures patient identification, and thus, plan of care matching. As illustrated in chapter four, both SBAR protocol and NGH handoff models recommend that nurses begin handoffs with this stage. Examining the examples in Table 10, the nurse in Handoff 2 can view the electronic handoff sheet, and this helped her to present the patient's identity information thoroughly as well as other information which is required to be presented at this stage in a coherent and clearly structured manner. Consequently, the nurse has built a strong discursive base for the handoff presentation which eventually eased the subsequent flow of information (e.g., reporting patient procedures, statue, medications, etc.). In contrast, the introductory stage in Handoff 1 contains the basic patient information (only patient's first name and in-charge physician), it is missing vital identification information (e.g., patient's age, gender,

file number) as well as the patient's current health status: two items recommended by SBAR protocol. This missing information at the *introductory stage* creates a critical gap which negatively impacted the rest of the handoff phases. As shown in Handoff 1, the incomplete presentation of the introductory phase co-occurs with pauses and hesitation (lines 3 and 4) and eventually forces the interaction to deteriorate. With this incomplete presentation, later in this handoff, the incoming team takes over and needs to elicit needed patient's information at a later time in the interactional exchange. So, although both Handoffs 1 and 2 are bedside handoffs, which were carried out next to patients' beds, and produced by Saudi nurses, the presentation of patient identification varied drastically. This impacted the rest of the handoff stages that followed. Handoff 2 in this example illustrates how the use of the handoff chart alleviated the pressure on the nurse and helped her to identify the patient in detail, and present both detailed and organized patient information as required by this stage. In contrast, the lack of the handoff chart, the reliance the nurse's memory, and the use of the patient's file intensified the pressure on the nurse in Handoff 1; as she had to recall the patient identification information from memory, or use the patient's file, where patient information was not consolidated into one form to seek the required information, which explains the paper shuffling during the handoffs at KFGH. Thus, this led to a poorly structured presentation of patient information, with less detail, which eventually led to a less organized *introductory stage*.

Similar to previous research (Eggins & Slade, 2012; Staples, 2015), nurses' use of discourse markers to organize and signal the flow of talk in this dataset led to more clear handovers. For example, various nurses in this dataset used discourse markers (e.g., *and then, okay*, etc.) to frame and signal the flow of talk, express acknowledgment, and check the incoming team's comprehension. By doing so, the nurses helped the incoming team to follow the presented information. Additionally, including all relevant patient information as well as

using communication strategies, such as holding the floor, lack of uncertainty, producing long turns and being responsive to incoming team queries, likewise contributed to the quality of nursing handovers in this dataset. I illustrate these features in Excerpt 44 (below) which is part of a fifteen-minute long handoff in NGH-ICU. The handoff is produced collaboratively by a female Saudi nurse (departing) and a female Filipino nurse (incoming).

Excerpt 44 (Night Shift) NGH- Intensive Care Unit

220	Nurse	She is uh post EVD inserted on 28 of- [
221	IN-N	So she came with EVD?
222	Nurse	Yeah. Inserted- this is on 28 of October from other hospital
223		So, she came with uh:: right subclavian CV line,
224		right radial arterial line Folly catheter all was changed
225		at here in our hospital
226	IN-N	She came, um, ventilated, also?
227	Nurse	Ventilated already, yeah
228	IN-N	And then they extubate?
229	Nurse	Yeah. They managed to extubate this patient like uh five days uh::
230		back No, more than five days, And then, um, she is post
231		embolization and (clotting) done on third of November [
232	IN-N	November
233	Nurse	Yes, here in our hospital. With past medical history,
234		the um hypertension, chronic liver disease, HCV positive.
235		They did for her MRI for this right posterior communicated artery
236		aneurism,
237		and then after six hour of admission here to our ICU,
238		patient deteriorated because she came with JCS fif [
239	IN-N	fifteen?
240	Nurse	Fifteen. And then deteriorated,
241		so JCS uh:: came thirteenth,
242		and then brought it to OR for urgent EVD uh:: insertion
243	IN-N	okay

Note:
EVD: Abbreviation for External Ventricular Drain, a medical device used to relieve intracranial pressure.
Subclavian: Subclavian means beneath the clavicle, and it may refer to Subclavian vein or Subclavian artery.
Ventilated: To breathe in and out; inhale and exhale by artificial means.
Extubate: To remove a tube which has been inserted into a hollow organ.
Embolization: The blocking of an artery by a clot or foreign material, to prevent blood flow to a tumor.
HCV: Abbreviation for hepatitis C virus.
MRI: An image produced by magnetic resonance imaging.
Aneurism: An abnormal, blood-filled sac formed by dilation of the wall of a blood vessel or heart ventricle.
OR: Abbreviation for operation room.

In this example, both the departing and the incoming nurses utilize the discursive features of an efficient interactional exchange (Eggins & Slade, 2012). The departing nurse (Saudi) successfully uses various discourse and communicative strategies, including using the discourse marker *and then* (e.g., lines 230, 237, 240, 242) and producing long turns and complete thoughts (e.g., lines 233-238), and elaborating on her responses (e.g., lines 222, 233) as she responds to the incoming nurse's queries. The departing nurse also uses repetition (i.e., repeating the departing nurse's utterances) as an efficient discourse strategy to organize her responses prior to providing elaborations. For example, in line 228, the incoming nurse poses a question *and then they extubate?* In respond to this question, the departing nurse first affirms the information *yeah*, repeats parts of the question's utterances *they managed to extubate*, then she proceeds with brief elaboration, in lines 229-231. The use of these discourse strategies induced the clarity and organization of the presented patient information.

The incoming nurse in this handoff example, by taking an active role, also demonstrates the role of the incoming team in achieving informationally detailed handovers. Above, the incoming nurse participated actively in the handoff interaction by checking given information (line 221), seeking clarifications (lines 226, 228), and acknowledging given information (line 243). Again, with this active role of the incoming nurse, the departing nurse exemplifies how departing nurses need to be responsive to all incoming nurses' questions and clarification requests. Aligning with previous research (Eggins & Slade, 2012; Streeter et al., 2015), this example of joint interaction in the handoff affirms that the recommended handovers are the ones achieved interactionally, meaning that both departing and incoming teams work collaboratively to ensure the quality of the handoff interaction, and thus, the safety of the patient.

Turning to the second part of research question three, I provide a detailed examination of the least communicatively effective handoff examples in this dataset. As a result, I

demonstrate why these handoff examples are less preferred and I highlight the communication strategies and/or discourse features which negatively impacted the handoffs.

The first handoff example, Excerpt 45 (below) is produced by a female Saudi nurse during a bedside handoff at the Urology ward at KFGH. The nurse begins the handoff inside the patient's room, accompanied by two incoming nurses; one is a male Jordanian nurse (IN-N) and the other is a female Indian nurse (IN-N2). Based on field notes, there were two male patients sharing the same room. This handoff interaction lasted for 1 minute and 9 seconds.

Excerpt 45 (3:00p.m. Shift) KFGH- Urology Ward

156	Nurse	[Paper shuffling] [Nurse flips through patient's file]
157	IN-N	This one, he broke his hand
158	Nurse	Broke hand?
159		This one, his name is just */Ish Esmo, meen?/*
160		[i.e., 'what's his name?, who's this patient?']
161		<Patient's first name> Under Dr. <Name>
162		Anyway, seen by the group today,
163		they start in the morning <Inaudible> Anyway, this one,
164		I don't know what you want to start? (2.0) */ya rabiii/* [i.e., 'oh my God']
165		Already this one taking <Inaudible>
166		tumor mark is taken but it's not showing
167		Because at uh:: 11, all the results came from morning
168		So maybe they thought no one's take
169		So, anyway, I took again.
170		Uh continue same management?
171	IN-N2	But tumor marker, no order yesterday?
172		There is order?
173	Nurse	Today, only they order to
174		Today morning [Crosstalk]
175	IN-N	Does it say when they're going to start?
176	Nurse	Uh:: I don't know what they meaning by that
177		But anyway, we'll follow up the doctor no one answer
178		We don't know */yaani/* [i.e., 'how?'] how come
179		Anyway, if they will enter a start, they will arrange with ultrasound,
180		They will call us, but no one call and no one [Crosstalk]
181	IN-N2	There is a request for a [Crosstalk]
182	Nurse	No, they enter a start
183	IN-N	A start?
184	IN-N2	They enter a start?
185		Even though they enter a start,
186		we need a request that they should contact the radiology,
187		meaning they should plan
188		[Crosstalk]
189	Nurse	*/khalas/* [i.e., 'done'] nothing for him

As seen in Excerpt 45, the handoff begins with the nurse shuffling through the patient's file. As a reminder, such handoff beginning is typical to all handoffs in KFGH, because nurses refer to various documents in patients' files to gather the information. The nurses in this hospital do not use any printed version of SBAR protocol during the handoff interactions. As the nurse is figuring out where to begin, the incoming nurse (male, Jordanian) introduces information about the patient, line 157, saying *This one, he broke his hand*. This construction leaves it unclear if the patient had been admitted with a broken hand or if he broke his hand during his stay at the hospital[8]. The departing nurse responds with a declarative question *broke hand?*, which may indicate that she is unaware of this issue.

The departing nurse then with no further comments about the issue, proceeds with her handoff starting with *this one, his name is just*, then she switches into Arabic asking what the name of the patient is. It is unclear if the nurse is addressing this question to the other nurses or if she is just murmuring to herself, wondering aloud about the patient's name. With no response from the incoming team, the nurse then flips through the file and reads the patient's first name and the name of the doctor who is in-charge of this patient. She then starts the handoff with the discourse marker *anyway*, in line 162, followed by the information that the patient has been seen by the doctors during the doctors' morning rotation. Next, the departing nurse closes the given information with *anyway*.

In line 164, the nurse resumes her handoff with a question addressing the incoming nurses, *I don't know what you want to start?* This move indicates that the nurse has no clear plan for the handoff and that she is not certain how to start. The nurse then comments */ya rabiii/* [i.e., 'oh my God'], line 164, which may represent a genuine cry for help. This specific finding highlights the importance of the handoff chart in which all patient information can be

[8] As observed, the patient had a cast on his hand.

consolidated into one form, and which nurses can use to structure the large amount of information that needs to be delivered concisely in this type of interaction.

After a short pause and with no response from the other nurses, the nurse continues the handoff and provides information about a procedure that has been done to the patient, saying *tumor mark is taken* (probably the procedure was done by the nurse during her shift, but again this is unclear due to the use of present tense, and the agentless passive). The nurse proceeds with further information concerning this procedure and explains that she has to repeat the procedure because it does not show (most probably in the system where the hospital keeps patients lab records). In this short turn (165 to 169), besides the frequent code-switching into Arabic, the information is presented in fragments. Thus, at least five key pieces of information are missing: 1) it is not clear who took the tumor mark because the nurse uses the passive voice; 2) it is not clear where the tumor mark is not showing; 3) it is not clear how or from where the results have come; 4) it is not clear what kind of results they are (e.g., blood results, x-ray results, etc.); and 5) it is not clear who thinks that the tumor mark is not taken.

The nurse then, with a hesitation marker *uh*, poses the declarative question *continue same management?*, line 170. Again, the departing nurse misses the opportunity to provide information about the management plan that is assigned for the patient. This declarative question goes unnoticed and gets interrupted by the incoming nurse's questions. In lines 171-172, *no order yesterday? there is order?,* the incoming nurse seeks clarifications, indicating doubt that there is a previous order for the tumor mark procedure. The departing nurse responds that the request has been initiated during her shift, in lines 173-174. At this point, the other incoming nurse (male, Jordanian) poses another question, in line 175, with *Does it say when they're going to start.* The nurse responds with uncertainty in line 176, starting with a hesitation *uh* and proceeds with *I don't know what they meaning by that*. The nurse's

response does not provide any clear information that answers the incoming nurse's question. She then indicates that this issue needs to be followed up by the incoming team. Again, the presentation of this sequence of talk (176-180) has two discursive features. First, the nurse, once again, responds in fragments. Examples include *no one answer*, *we don't know how come*, *if they will enter a start*, *they will arrange with ultrasound*, and *they will call us*. In doing so, she expresses both incomplete thoughts and information. Next, her use of first- and third-person plural pronouns *we* and *they* followed by the future tense to report incidents that have happened during her shift trigger confusion for her interlocutors. Statements such as *we'll follow up, if they will enter a start, they will call us* illustrate such features. This vague presentation and the shift in verb tenses triggered several clarifications requests by the incoming team.

In lines 183 and 184, both incoming nurses request clarifications about what the nurse has meant by entering a start, in lines 183-184: *a start?, they enter a start.* Then, the Indian incoming nurse explains to the departing nurse that a request for the radiology is needed regardless of all of that has been said. The incoming nurse also uses *they,* and it is unclear to whom she is referring; the antecedent referent for the *they* is ambiguous. Finally, after a short crosstalk between the nurses, the Saudi nurse ends the handoff with the Arabic phrase */khalas/* [i.e., done] followed by *nothing for him*, line 189, declaring the end of this handoff. This closing strategy, as discussed in chapter four, is a less preferable as it discourages any further questions by the incoming team.

In this handoff example, though the nurse starts the handoff with the *situation component* (i.e., introducing the patient's first name, and the name of the doctor in-charge), she fails to adhere to the rest of SBAR components (*background, assessment*, and *recommendation*). As illustrated above, the whole handoff session is basically about one issue; that is, it concerns an unsent radiology request, and nothing else is known about the

patient (e.g., his current health status, lab results, assessment, medications, risks, immediate needs, etc.).

Furthermore, this handoff example demonstrates how the use of certain communication strategies and interactional features lead to unclear handoff interaction. For instance, as illustrated above, the nurse's use of questions (*broke hand?, what's his name?, who's this patient?, I don't know what you want to start?*, and *Uh continue same management?)* instead of statements makes her handover sound unassertive and lacking in required information. This interactional feature is identified by Eggins and Slade (2012) as an unpreferable interactional feature which weakens the handoff presentation. Additionally, the code-switching into Arabic, the shift in verb tenses, the vague presentation of information, the use of incomplete thoughts, the use of unidentified subject pronouns, and the use of the Arabic phrase */khalas/* to end the interaction, further weakened the handoff presentation. Consequently, the departing nurse in this example fails to provide detailed patient information as well as a clear care plan for the incoming team to act upon.

This weak presentation, as illustrated above, forces the incoming team to assume interactive control in order to elicit the information from the departing nurse (lines 157, 171, 175, 181, 183, 184). Eggins and Slade (2012) indicated that the incoming team might seize control to acquire the required information when the departing team does not provide the information the other team needs to carry on patient's care. Thus, this handover relies on the incoming team's elicitation of information.

The second example is Excerpt 46 (below). This handoff is produced by a female Saudi nurse at the Urology ward at KFGH. The nurse is accompanied by two incoming nurses: one is a female Indian, and the other is a female Indonesian. In this extract, only the female Indian incoming nurse (IN-N1) is participating in the handoff interaction.

Excerpt 46 (3:00 p.m. Shift) KFGH- Urology Ward

1	Nurse	[crosstalk]

2		Uh:: Good evening,
3		this patient <Patient's First Name> under Doctor <doctor's Name>
4		uh both <inaudible> transfer uh the patient hypertension
5		uh today, seen patient by group
6		(3.0) [nurse shuffles through patient's file]
7		this one medication sheet (5.0)
8		seen patient by uh doctor <Name> *and then* uh::
9		he write one uh order
10		Uh:: give the patient uh (Flit aenema)
11		because the patient uh she has uh pos:: pos: post (hemolas)
12		the patient (1.0) *ok? /tayeb?/* [i.e., 'okay?']
13		uh (2.0)
14		so. ok . (4.0) [Nurse shuffles through the patient's file]
15		SO, nothing for patient
16		The patient uh stable (4.0)
17		this one for uh the the vital signs for the patient
18		that one uh stable 120/72
19		I think the patient is stable
20	IN-N1	<inaudible crosstalk> can I know the patient's (situation)
21		<inaudible> because <inaudible>
22	Nurse	ok, yeah (2.0)
23		uh the last uh investigation for patient
24	IN-N1	today, today
25	Nurse	uh today, still I did I didn't write because I go to ICU.
26		I transfer my patient [crosstalk]
27	IN-N1	you know level of [inaudible crosstalk]
28	Nurse	uh hemoglobin 9.4
29		(2.0)
30	IN-N1	[inaudible crosstalk]
31	Nurse	uh (gynema) */khalasl/* [i.e., 'done'] give. (gynema) subsidiary
32	IN-N1	<inaudible> posture
33	Nurse	Yeah yeah I give him */khalas/* [i.e., 'done']
34	IN-N1	<inaudible>
35	Nurse	yeah yeah yeah, just uh (1.0)
36		okay [Nurse closes patient's file]
37		[handoff ends abruptly]

Note:

Gymnema: A herbal remedy extract from the leaves of a vine, Gymnema sylvestre, native to tropical India, and promoted for its effect on high blood glucose levels.

The nurse begins the handoff with the *situation component* of SBAR: greeting the incoming team, introducing the patient, and the name of the in-charge doctor, lines 2-3. The nurse then proceeds with information about the patient's situation, *uh the patient hypertension,* line 4. As discussed in chapter four, this could be a grammatical error; that is, perhaps the nurse meant to say 'hypertensive,' meaning that the patient is suffering from high blood pressure.

The nurse then provides no more information about this concern or what precautions need to be taken regarding this health concern. The nurse ends this *situation component* with the information that the patient has been seen *by group*, line 5. The *group* in this context most likely refers to the doctors who are in-charge of the patient case. However, the nurse provides no further details about this situation, such as doctors' orders, or recommendations after checking the patient. Next, after a short pause, line 13, and shuffling through the patient's file, line 14, the nurse states that she has no more information to share about the patient, line 15, *SO nothing for patient*.

Despite this seemingly closing statement, however, the nurse resumes the handoff in line 16 stating that the patient is stable. After a four-second pause, she reads the patient's vital signs from the file and then she hedges her previous statement about the patient's health status using *I think*, line 19, *I think the patient is stable*. This hedging adds a sense of uncertainty to the provided information and leads to the incoming nurse's interruption, and resulting crosstalk.

In the following turns, the Indian incoming nurse requests the *situation component* of SBAR (*can I know the patient's situation?*), in line 20. As mentioned in research question one, besides introducing patient's information, the *situation component* of SBAR requires the nurse to state the patient's current situation and health state concisely. In this handoff, the incoming nurse specifically requests this component along with the latest patient's investigations that have been done during the nurse's shift, in lines 20-24. The departing nurse responds with a hesitation *uh* followed by a negative affirmation and a justification *today, still I did I didn't write because I go to ICU, I transfer my patient*. The nurse's response indicated that the patient's investigations have been done; however, the nurse missed documenting the results. Then, at this point of the interaction, and keeping in mind the patient's diagnosis (that is, the patient is suffering from high blood pressure), both teams

have no clear or current knowledge about the patient's recent investigations (e.g., lab results). Keeping in mind the patient's diagnosis, such a situation may put the patient at risk and jeopardize the patient's health status. Finally, after several turns between the incoming nurse and the departing nurse concerning the administration of patient medication, the departing nurse closes the patient's file. By doing so, the departing nurse ends the handoff interaction with no clear recommendations for the incoming team. This is potentially problematic.

Similar to Excerpt 45, this example demonstrates how the nurse fails to adhere to SBAR protocol. The entire handoff collapses into one component, in this case, the *situation component*. This handoff is incomplete, as the nurse fails to report various critical information about the patient's health state, including latest blood test results and vital sign measurements, assessments, recommendations for the incoming team, etc. Additionally, the nurse fails to respond with clear information to the incoming team's queries.

Excerpt 47 (below) is another bedside handoff, produced by a female Saudi nurse. The nurse is accompanied by one female Indian incoming nurse and the head nurse (female, Moroccan). It should be noted that this is the only example from KFGH in which the head nurse is present during the handoff interaction. As mentioned earlier, the presence of head nurses during handoff sessions at KFGH is highly unusual.

Excerpt 47 (3:00 p.m. Shift) KFGH- ENT Ward

1	Nurse	[background sound: patient is crying softly] [nurse shuffles in
2		Patient's file] (1.0) Good morning, I will endorse, <File Number>
3		This patient, <Patient Name> five years old, under Dr. <Name>
4		[reading from the file] No risk of fall, uh no allergy, uh this patient
5		yesterday admission, (Adenotonsillitis), for adenoidectomy today
6		then uh she came around 11:30 (3.0) [nurse closes the patient's file] (2.0)
7	HN	What tests <inaudible> ?
8	Nurse	All investigation in here [nurse points to patient's file] (5.0)
9	HN	How about this uh [
10	Nurse	<File Number>, this is for that one
11		(2.0) <inaudible crosstalk>
12		under Dr. <Name>↑
13		/*Khalas/* [i.e, 'that's it] [nurse leaves the room]

Note:
Adenoidectomy: A surgical removal of the adenoids.

In the first several turns, lines 2-6, the nurse starts with an organized information sequence which for some extent follows the *situation* and *background* components of the SBAR protocol. The nurse starts with the *situation component,* including: 1) greeting the incoming team, 2) introducing the patient (name, file number, age, in-charge doctor), and 3) providing information about the patient's situation and state (line 4, *no risk of fall, no allergy*). The nurse then proceeds with the *background component* of SBAR, providing the patient's medical issue; that is, she says that the patient was admitted for *adenotonsillitis* and is assigned for *adenoidectomy* surgery, line 5. In this *background component*, the nurse misses presenting any information related to patient's previous history and lab results, as is recommended by SBAR protocol.

Despite the nurse's promising start, the handoff stops with a short pause, line 6, and with the departing nurse closing the patient's file. Closing of the patient's file followed by a pause leads to the head nurse's question. In line 7, the head nurse asks a clarification question: *What tests <inaudible> ?* Though part of the question is inaudible, based on field notes, the question is related to the *background component* as the head nurse mentions something related to latest blood tests that have been done for the patient. It is worth noting that, as the nurse mentions in line 5, the patient is scheduled for a surgical removal of the adenoids in this same day, *for adenoidectomy today*. So, it is likely that various investigations have been done to the patient in preparation for the operation and to ensure patient's safety, yet this information is completely missing from this interactive exchange. Furthermore, based on field observations, the five-year-old patient is wearing the operation gown and is accompanied by the mother, so one can assume the tests and assessments have been completed with potentially critical results to be shared in the nurse handoff.

In response to the head nurse's question, the nurse, with a physical gesture, points to patient's file saying *all investigation in here,* in line 8. By this gesture, the nurse directs the head nurse and the incoming nurse to the patient's file, meaning that they can check the patient's file to seek out any information about the investigations. By doing so, the nurse has violated a duty to the patient and jeopardized the patient's safety by leaving the incoming team bewildered and lacking the required information to take over, specifically that the patient is due for an operation.

After a short pause, the head nurse follows up with a second clarification question, in line: *How about this uh*. However, she gets interrupted by the nurse who repeats the patient's file number followed by a vague fragment *this is for that one*, in line 10. It is unclear what the nurse means by this fragment and the two deictic referents (*this* and *that*) remain unspecified. Then, after a short pause and crosstalk between the head nurse and the incoming nurse, the nurse interrupts with a rising intonation and mentions the name of the doctor who is in-charge of the patient. In this turn, the nurse indicates that the patient is under the care of that doctor. The nurse then ends the handoff with the Arabic phrase /*khalas/* [i.e., '*that's it*'], line 13, and she leaves the room, followed by the head nurse and the incoming nurse.

Again, I consider this handoff to be problematic for two major reasons. First, the nurse handoff presentation does not follow SBAR protocol. The *background component* is missing essential information such as the patient's previous history and lab results. Also, the nurse provides no *assessment* or *recommendation* information to the incoming team, and thus neglects the rest of SBAR components. In other words, the first aspect of incomplete communication is the absence of this critical information. Second, interactionally, the nurse fails to respond adequately to the incoming team's queries; she even obstructs the incoming team's attempts to elicit more information and seek clarification. The nurse's language suggests that she may not recognize, or appreciate the importance of this interaction.

O'Connell et al.'s (2008) surveyed nurses' perceptions of nursing handovers and found that some nurses consider the handover process to be a time-consuming practice and that they believe that patients' information can be accessed via patients' files. This handoff example demonstrates how such perceptions may lead to adverse events and risk patient safety. In this example, the patient is scheduled for an operation – a high-risk hospital procedure- in such cases an incomplete handoff can potentially lead to patient harm, a critical incident, or even death. Thus, future investigations maybe needed to acquaint this area of research.

To summarize, in this section, I examined the nursing handoffs from both sites to identify communication strategies and discourse features which contribute to relatively more or less complete handoff interactions. As discussed above, the findings suggested many similarities between clinical handovers and nursing handovers. I demonstrated how specific communication strategies (Eggins & Slade, 2012) and discourse features (Staples, 2015) play a role in enhancing this type of nursing discourse. For example, I illustrated how (Excerpt 44) communicative strategies (such as being assertive) and discourse features (such as using discourse markers to organize the flow of talk, checking comprehension) played a vital role in strengthening the presentation of the nursing handoffs in this setting. Importantly, I also elucidated how the absence of these features and strategies may negatively impact the recommended best practices for the nursing handoffs.

In this section, I also provided a close-up examination of several problematic nursing handoffs in this dataset. As discussed above, the use of inefficient discourse features (e.g., heavy code-switching into Arabic, the use of the Arabic phrase */khalas/* to close the handoff), the absence of information, and/or presenting the information in fragments or incomplete thoughts, all led to unclear as well as less detailed handoff interactions. As I demonstrated, my analysis revealed that, in this setting, two major reasons appear to negatively impact the quality of the nursing handoffs in this dataset: 1) the lack of guiding handoff sheet, which

made handoffs vulnerable for errors and deviations from SBAR; and 2) the focus on one patient-related issue (e.g., a situation that happened during the nurse shift) which forces the components of the handoff to collapse into one component.

Research Question Four

To address the last research question in this study (*To what extent are nurses' positions (hierarchal structure) manifested and/or (re)produced in these nursing handoff interactions?*), the analysis will focus on head nurses' turns in the handoff interactions. To review from chapters one and two, several researchers have explored asymmetrical power relationships in medical interactions (e.g., Ainsworth-Vaughn, 2003, 2005; Erickson and Rittenberg, 1987; Staples, 2015). Most of this research focused on examining the use of questions and interruptions in medical interactions to support the asymmetrical nature of such interactions, as in the asymmetry of doctor-patient clinical interactions.

Though most of this research has focused on doctor-patient interactions, it goes without saying that nurses are also in the position of authority and they may exercise power either on patients (e.g., Shattell, 2004; Staples, 2015), or as they interact with each other (e.g., Stagger & Blaz, 2013). Due to the asymmetrical relationship between nurses in this dataset (head nurse vs. staff nurse), this part of the study will examine how head nurses may exercise power and authority during the nursing handoff interactions. My approach to this examination is to extract selective handoff interactions in which head nurses interrupt the handoffs. As discussed previously, the analysis showed that both head nurses and incoming nurses may interrupt during the handoff interactions. Head nurses found to interrupt more frequently than incoming nurses. In the entire dataset, it was found that head nurses interrupted the handoff interactions 298 times, while incoming nurses interrupted 219 times (and 72 of the incoming nurses' interruptions occurred in the NGH-ICU handoffs).

In this section, I identify the kind of topics that attract head nurses' attention and make them momentarily delay or even stop the handoff interaction. Furthermore, I aim to highlight the impact of these interventions, to examine if such interactive practices facilitate or hinder the handoff interactions. As shown in Table 11 (below), there were five active head nurses in this dataset. Four were from the National Guard Hospital and one was from King Fahad General Hospital. All the head nurses were female nurses and were from Saudi Arabia (2), South Africa (1), Philippines (1), and Morocco (1).

Table 11.

Head Nurses' Demographics

Site	N	Nationality	L1	Gender
NGH	4	2 Saudi	Arabic	All Female
		1 South African	English	
		1 Filipino	Tagalog	
KFGH	1	1 Moroccan	Moroccan Arabic	

Table 12 displays the main reasons for interruptions that I found in the head nurses' interactions in this dataset. The table displays the reason for interruption (Column 1), the total number of interruption that occurred in the data (Column 2), and some examples from the dataset (Column 3) for each category. As illustrated in Table 12, I identified seven major reasons for head nurses' handoff interruptions. The data revealed that, in general, head nurses may interrupt the nursing handoffs to: 1) ask questions; 2) add additional information; 3) request clarifications; 4) make requests; 5) express agreement; 6) ask for a handoff to begin; and 7) respond to nurses' questions. The analysis revealed that head nurses interrupt mostly to ask questions, add information, or to request clarifications, respectively.

Table 12.

Reasons for Interruptions by Head Nurses

Reason of interruption	Total number	Sample
To ask questions	100	*And the patient, what he said?* *Where did you speak to her about this one?* *My dear who saw the patient yesterday?*

To add information	61	*The splinting according to <Name> he tried to put on patient <inaudible> couldn't. The commode is not available and they spoke to the care clinic to provide this.*
To request clarifications	48	*Regular?* *This is 24 hours?* *on suction?*
To make a request	20	*Call them after this on, after we finish immediately* *Can you please ask the doctor to speak to him?* *I need the 24 hour*
To express an agreement	22	*Okay* *Uh-huh*
To begin a handoff	14	*Thank you, okay room?* *Go ahead go ahead*
To respond to questions	13	*Yeah it does* *no no no* *yeah but even though* *oh no, he's not on it*

To illustrate, the following excerpts show examples of how head nurses may momentarily interrupt and pause the handoffs to ask questions and to request further information. The three excerpts are from a morning handoff session which took place at the Surgical ward and were produced by a Saudi female head nurse at NGH. Excerpt 48 (below) demonstrates how the Saudi head nurse stops the nurse (female, Filipino) from proceeding with the next handoff; that is, she stops the interaction in order to request some clarification regarding the previous patient.

Excerpt 48 (Morning Shift) NGH- Surgical Ward

331	Nurse	This patient for the daily dressing by Nurse Gauze plus nacl,
332		yesterday did by the team (3.0)
333	IN-N	(next handoff) Patient 41. Also by::
334	HN	*/Dagigah/* [i.e., 'wait a minute'] . Regarding this 34::4
335	Nurse	Mm-hmm
336	HN	By the ID, they said he has got cultures on ASR, done? Or not yet?
337	Nurse	No. He's on:: the: (2.0)
338	HN	But the ID-
339	Nurse	Recommendation to review the team
340	HN	Okay.

Note:
ID: Abbreviation for infectious disease.
Cultures: (in microbiology) A laboratory test involving the cultivation of microorganisms or cells in a special growth medium.

ASR: Abbreviation for application site reaction (medicine).

In line 334, the head nurse code-switches to Arabic and says /*Dagigah*/ [i.e., 'wait a minute'] to halt the interaction and prevent the nurse from proceeding with the next handoff. After pausing the handoff, the head nurse requests clarification concerning a procedure that has been assigned to the previous patient by the infectious disease physicians, in line 336. The handoff resumes when the head nurse expresses her agreement with the provided information, in line 340.

Similarly, in Excerpt 49 the same head nurse interrupts another handoff, but this interaction involves another nurse (male, Filipino).

Excerpt 49 (Morning Shift) NGH- Surgical Ward

357	Nurse	Uh:: yesterday by Dr.<Name> when he:: when they came here.
358	HN	Yesterday this is?
359	Nurse	Yes, boss.
360		He was referred to Health Educator <Name>
361		regarding the Rifampicin and he
362		Will::l she will see him today.
363		This patient is GCS 15 out of 15, Braden of 21.
364		(NUS) of 1 because of the heart
365		rate It's 90.
366		And then uh he's walking::g [
367	HN	ID intends, is it Educator or public nurse?]
368	Nurse	uh public nurse, ma'am (1.0) uhmm uh And then:: [
369	HN	And with
		dietitian referral done for this patient
370		because of it's from Nursing?
371	Nurse	umm NO, nothing yet, ma'am.
372	HN	Okay. Ask the dietitian from nursing
373	Nurse	And then uh:: PT is working with Zimmer Frame

Note:
Rifampicin: A drug used in the treatment of tuberculosis, meningitis, and leprosy.
PT: Abbreviation for physical therapy.
Zimmer Frame: A light enclosing framework (trade name Zimmer) with rubber castors or wheels and handles; helps invalids or the handicapped or the aged to walk.

The head nurse interrupts in line 356 with a declarative, clarification question, *yesterday this is,* investigating the time in which a health educator examined the patient. The nurse responds

back with an affirmative response, line 359, *yes boss*, followed by additional details about the topic, lines 360-362. It should be noted that the use of *boss* (line 359) and *ma'am* (lines 368 and 371) here may reflect the nurse's awareness of the asymmetrical power between him and the head nurse.

The departing nurse then proceeds with the handoff and after several turns, he gets interrupted again in line 367. The head nurse's question this time is related to the additional information that the nurse has presented previously. In line 367, the head nurse asks a clarification question about the health educator and if he is a nursing or a public health educator. The nurse responds confirming that the health educator is a public nurse, and then he resumes with the handoff. However, the head nurse interrupts again with another clarification request, this time, concerning the dietitian referral for the patient, lines 369-370. The nurse responds in line 371 indicating that no dietitian referral has been issued for the patient yet. The head nurse then requests for the dietitian to be from the nursing department. The nurse resumes the handoff, line 373, with no obvious uptake to the head nurse's final request. It should be noted that, in this example, the insufficient information concerning the health educator referral triggers the head nurse's clarification requests.

Similar to the previous excerpts, Excerpt 50 (below) demonstrates how the head nurse uses the same solicitation strategy to gather information about additional patient-related information that the nurse (female, Filipino), in this example, has missed mentioning in her handoff.

Excerpt 50 (Morning Shift) NGH- Surgical Ward

172	Nurse	Total intake of 2350 and output of 2000 .
173		On PO Cefuroxime umm q 12 hourly also
174	HN	No more vomiting?
175	Nurse	No more. She's tolerating well.
176	HN	What she is taking?
177	Nurse	On clear liquid.
178	IN-N	He's another one on <inaudible>

179	HN	Regular?
180	IN-N	Mmm.
181	Nurse	Regular (at the glaucoma) yeah (3.0)

Note:
Intake: Quantities thereof, taken in and used by the body; this refers to all routes by which fluids enter the body, including by mouth, rectum, irrigation tube, and parenteral administration.
Output: Total of anything produced by any functional system of the body.
PO: Abbreviation for *per os*, meaning by mouth/orally.
Cefuroxime: A broad-spectrum cephalosporin antibiotic given orally and parenterally for respiratory, skin, and other infections.

As the nurse is introducing the *medication stage* of the handoff, the head nurse poses a question in line 174, *no more vomiting?* This question leads to a series of question and answer turns between the head nurse and the departing nurse until the issue is finally clarified in, lines 174 to 182.

Both Excerpts 49 and 50 illustrate situations in which the head nurse interrupts the handoff interactions to ask various clarification questions. The asymmetrical relationship between the head nurse and the departing nurses permits the former to interrupt the interactions, as needed. In both examples, the departing nurses responded completely to all queries, thus enhancing the communicative success of the handoffs.

The data also suggest that critical or serious incidents tend to attract head nurses' attention, and obligate them to interrupt and further investigate the issue. For instance, Excerpt 51 is part of the same morning handoff shift at the surgical ward at NGH. In this example, the handoff is produced by a female Filipino nurse who discloses some vital and contradictory information in her handoff. As can be seen in this excerpt, this piece of information makes the head nurse (female, Saudi) interrupt multiple times to resolve the issue.

Excerpt 51 (Morning Shift) NGH- Surgical Ward

114	Nurse	This patient is planning for left knee ACL reconstruction today,
115		UH:::h in the OR list, it's written as a right↑ (2.0) okay?
116	HN	OR list, right?
117	Nurse	Yeah. OR list, right
118	HN	Uh-huh
119	Nurse	BUT actually, patient is going for the left side .

120		Consent is for the left side as well .	
121	HN	AND the patient, what he said?	
122	Nurse	Patient also telling left side .	
123	HN	Left side. But in the OR list:t ?	
124	Nurse	It's RIGHT. But the:: back at the back <inaudible>	
125	HN	okay↑	
126	Nurse	Okay. he is on IV for::rr <inaudible> uh:: [	
127	HN		Hold ↑ (1.0) where did you speak to her about this one?
128	Nurse	They haven't called up for this patient, no.	
129	HN	After this, call them for this one, after we finish immediately.	
130		It's a (candor) <inaudible> or:: when <inaudible>	
131	Nurse	At 2:00 o'clock.	
132	HN	2:00 afternoon?	
133	Nurse	Afternoon. Afternoon yes, so↑.	

Note:
ACL: Abbreviation for Anterior Cruciate Ligament.
OR: Abbreviation for Operating Room.
IV: Abbreviation for intravenous: administration of fluids or medication by injection into a vein.

The issue in this handoff is related to a wrong site procedure. That is, the patient is booked for a left knee surgery; however, as indicated by the nurse, the surgery notes indicate that the surgery should be for the right knee. In hospital settings, such incidents maybe the source of major errors that jeopardize patient safety. The nurse introduces the issue in lines 114 -115, and alerts the team about this issue by a prolonged, loud hesitation marker *UHH:::h in the OR list, it's written as*, followed by a stressed *RIGHT*. The nurse closes this information with a short pause followed by a comprehension check *okay?* In this example, the nurse provides an exemplary communication strategy of how to introduce important information in the handoff interactions. The nurse recruited the team's attention, introduced the issue, and checked that the team has received this information.

The introduction of this critical issue, the nurse's short pause and comprehension check, in line 115, leads to eight further turns of interruptions by the head nurse. The head nurse first requests a clarification in line 115 *OR list, right?*, then uses the backchanneling device *uh-huh* to encourage the nurse to provide further details. The head nurse then proceeds in line 121 with a *wh*-question (*and the patient, what he said?*). That is, she tries to

confirm what the patient has said about the intended knee for operation. The nurse, in line 122, confirms that the patient also said it is the left knee. The head nurse repeats the clarification question, however, this time instead of the declarative question, the head nurses uses a completion-type of question, line 123, *left side But in the OR list::?* Again, the nurse responds with an affirmative answer, using a stressed utterance, in line 124 (*It's RIGHT*). The nurse then proceeds with the handoff after the head nurse expressed her acknowledgment with a rising intonation *okay*, line 125.

Despite the ongoing exchange thus far, however, the head nurse stops the handoff with the very direct phrase *hold*, line 127. At this point of the interaction, and with these series of interruptions, the head nurse gathered three vital details about this situation: 1) the nurse's confirmation that there is an error in the operation list (right knee operation instead of left knee); 2) the patient has consented on the left-knee operation not the right one; and 3) the patient himself verbally confirmed to the nurse that the operation should be done to his left knee.

After holding the handoff, the head nurse poses another *wh*-question, in line 127: *where did you speak to her about this one?* It is unclear to whom the head nurse is referring to by using the third-person pronoun *her*, but, in line 128, the nurse confirms that no one has called yet; therefore, the issue has not been resolved. The head nurse resumes with a direct request, in line 129 (*after this, call them for this one, after we finish immediately*), asking the nurse to call the operation room right after the handoff session ends. The head nurse concludes her series of interruptions with a *wh*-question, in line 130, most likely to find out when the operation is assigned. The nurse responds to the question in line 131. The head nurse follows up with a final clarification request, line 132, *2:00 afternoon?* The nurse confirms the time with a repetitive affirmative utterance, line 133 *afternoon, afternoon yes*.

Finally, with a rising tone *so*↑, line133, the nurse regains the floor and resumes her handoff; thus, she closes further discussion about the topic.

This excerpt demonstrates how the head nurse controls the interaction over several turns via the use of a series of clarification questions. The head nurse also uses the very direct imperative phrase *hold*, in line 124, to pause the handoff momentarily; with this, she is able to resume investigating the patient-related issue. The nurse, on the other hand, uses a less direct way to control the interaction, such as the use of tone choice (i.e., shifting to high intonation) to gain the floor and resume her handoff. This dramatic example shows us why it is not enough to look at the written handoff notes. It is essential to do verbal handoffs, and, as in this case, if they had not, there is a likely chance they could have operated on the wrong knee.

Similarly, in another critical incident, the same head nurse (female, Saudi) took control of another handoff interaction in order to investigate an issue related to the site of a venous cannula (which is inserted in the patient's index finger). In Excerpt 52, a female Filipino nurse, starts introducing the *status stage* of the handoff. The nurse mentions that the patient has a cannula in his left index finger.

Excerpt 52 (Morning Shift) NGH- Surgical Ward

870	Nurse	He is on low <inaudible> diet now and he has Gates 20
871		on the left index finger
872		And he is on an IV metronidazole, Sulfasalazine at orally [
873	HN	He's on? Or he's having what?
874	Nurse	Metronidazole
875	HN	You said index finger what?
876	Nurse	Umm Gates 20
877	HN	why?↑
878	Nurse	Difficult for me are this one, yesterday. She has a difficult vein
879	HN	Did you try with the patient here? [HN pointing to her hand]
880	Nurse	yeah. See, but it's still patent.
881		It's good. Yeah. Because if it's not good, I won't
882		ever try. But still patent
883	HN	Try another one, please. Why then if you found [
884	Nurse	I will

885	HN		Remove this cannula
886	Nurse	see	
887		<inaudible>	
888		<nurse laughs>	
889	HN	But in the index, it's not comfortable	
890		And this is from ER, */khalas/* [i.e., 'enough']	
891	Nurse	<laughs> But this is physics.	
892		Our latest issuance mentions precaution in oral	

Note:
Metronidazole: A synthetic antimicrobial drug.
Sulfasalazine: A sulfa drug.

This piece of information makes the head nurse interrupt the handoff first with two clarification questions, line 873, *He's on? Or he's having what?* When the nurse responds with the name of the medication, in line 874, the head nurse reframes her question, in line 875 (*you said index finger what?*). The head nurse's question this time directs the interaction to the specific point that she wants to investigate. The nurse responds in line 876 explaining that the patient has a difficult vein and that she was not able to access the vein, or to change the cannula during her shift. After hearing the nurse's response, the head nurse, in line 877, follows it up with a rising intonation *wh*-question *why?*↑ The nurse then explains that she did not remove it because she had difficulty accessing the patient's veins. The nurse's response is again followed up with another question by the head nurse, this time a *yes/no* question, in line 879, *Did you try with the patient here?* The nurse provides further explanation, in lines 880 to 882, confirming that the site of the cannula is good and the tube is clear.

Regardless of the nurse's justifications, the head nurse requests directly that the nurse to try another site, line 883 *Try another one, please*. Then, in line 885, the head nurse produces an unmitigated request *Remove this cannula*; that is, this happens after the nurse has indicated that she will remove the cannula, line 884. Then, in lines 889 to 890, the head nurse provides two reasons to justify her decision; that is, she states that the index site is not

comfortable for the patient and that the cannula had been placed in the Emergency Room and it should have been removed by now.

The nurse then laughs softly in line 888, and comments that *this is physics*, in line 891. It is unclear what the nurse meant by this phrase; however, it might indicate that she refers to the medical fact that cannula can be inserted in the index finger. The nurse's laugh here makes the issue sounds less serious, especially when she follows this laugh with the comment *but this is physics*. This part of the interaction unveils the relational work between the nurses in the nursing handoff interaction (e.g., face-maintaining, face-challenging). In other words, the head nurse's directives to the nurse may be considered face-challenging, especially with the presence of the rest of the nursing teams. With this challenge to face, it appears that the nurse uses these discourse strategies of laughing and commenting that it is physics to lessen this face threat. The nurse then resumes her handoff, line 892, with no obvious uptake for the head nurse's request.

Taken together, the above examples demonstrate how the head nurse can direct the flow of talk in nurse-to-nurse interactions, mostly via questions and clarification requests. Most of the used questions are in the form of close-ended category, thus gathering very specific information. The examples also demonstrate how in nurse-to-nurse interactions (as illustrated in Excerpt 52) the head nurse is responsible of determining the final patient-related decisions in these handoff interactions.

The dataset also revealed that head nurses may use their position of authority to remind nurses of policies, regulations, and/or how certain procedures should be executed; that is, head nurses review protocol in cases where nurses displayed any deviations from those policies and required procedures. Additionally, the data analysis suggested that head nurses encourage the nurses to be responsible for deciding the required patient-related procedures

that is based on their shift observations during the shifts. The findings of this part of the study align with previous research which found that besides transferring patient information, nursing handoffs provide valuable teaching opportunities to novice nurses, and that expert nurses may demonstrate their clinical expertise during the interactions (Buus, 2006; Kerr, 2002; Lally, 1999; Staggers & Blaz, 2013). They also seem to play a vital role, contributing to the exchange of key information.

To illustrate, Excerpt 53 (below) is part of a morning handoff shift at the Oncology/Pediatric ward at NGH. A female South African head nurse is in charge of this morning shift. At the beginning of this excerpt, the female Filipino nurse introduces to the team an encounter that has happened between her and the in-charge doctor regarding a 14-day treatment plan for the patient who has been under her care during the shift, lines 61 to 66.

Excerpt 53 (Morning Shift) NGH-Oncology/Pediatric Ward

61	Nurse	It's just continuing on Meropenem
62		Uh:: there was, he said from the endorsement
63		it would be for 14 yesterday, today is day 11,
64		but there was no way to tell from that notes <laugh> that it would be
65		continued for 14 days,
66		but anyway he's able to continue
67	HN	From where do we get it?
68	Nurse	It's just endorse to me (1.0) yesterday
69		Maybe verbally, by the doctor [
70	HN	So you DON'T follow (1.0)
71		We DON'T follow this
72	Nurse	We don't follow this.
73	HN	We should't
74		You don't take verbal orders for such things
75	Nurse	Right (1.0)
76		Anyway

Note:
Meropenem: An ultra-broad spectrum injectable antibiotic used to treat a wide variety of infections.

The nurse indicates that the doctor's decision concerning the treatment plan is unclear to the reader of the document: *but there was no way to tell from that notes*, in line 64. Regardless of this discrepancy (the doctor's order vs. his notes) the nurse points out that the

doctor's verbal order is being followed, line 66 *but anyway he's able to continue*. This information leads to the first interruption by the head nurse in line 67, *from where do we get it?* The nurse responds to the question affirming that the doctor order has been given to her verbally, in line 69 (*maybe verbally, by the doctor*). At this point, it is important to note that the nurse, in lines 61 to 66, has not mentioned that the doctor's handoff was verbal; however, the head nurse's question revealed this additional information.

Before the nurse gets the chance to finish her turn in line 69, the head nurse interrupts with a hedged directive, line 70, *so you don't follow*. This directive is immediately followed by a reiteration; however, this time, the head nurse shifts the second-person singular pronoun *you* to the first-person plural pronoun *we,* in *we don't follow this* (line 71). The pronoun shift indicates that the head nurse is not only directing her order to the nurse, but is also to the whole nursing team in this handoff shift. The nurse then expresses her agreement by repeating the head nurse's statement in line 72, *we don't follow this*. The head nurse next upgrades her tone using the modal of necessity *should*, line 73 *we shouldn't*. Then, she directs her talk once again to the nurse, in line 74: *you don't take verbal orders for such things*. This episode ends with the nurse expressing her agreement in line 75, *right*.

Extract 53 (above) illustrates one of the implicit functions of nursing handoffs; that is, such handoffs offer educational opportunities which help in reaffirming the institution's policies concerning certain procedures. It is important to point out that this teaching opportunity exists because of the active, interrogative role that the head nurse is taking in this interaction. In the following example, Excerpt 54, I also illustrate how the same head nurse utilizes the same discourse strategy to remind the nurses of following certain required procedures for chemo therapy patients.

This example comes from the same morning shift and is produced by a female Filipino nurse. This part of the handoff starts with the nurse introducing information concerning the patient's chemotherapy blood tests.

Excerpt 54 (Morning Shift) NGH- Oncology/ Pediatric Ward

159	Nurse	I am still waiting for the <inaudible> because he was not able to
160		collect the <inaudible> <5.0>
161	HN	<inaudible> always make sure that <inaudible> for chemo therapy,
162		make sure you DO collect, so please <inaudible> especially
163	Nurse	The mom and the son last night <inaudible>

In lines 159 to 160, the nurse indicates that she is still waiting for certain blood results for this patient. (It should be noted that the audio contained inaudible parts; hence, part of the information is missing). The head nurse follows with direct requests, in lines 161-162, *always make sure*, *make sure you DO collect*, emphasizing that nurses need to collect certain types of blood tests prior to the administration of chemo therapy. The nurse proceeds with the handoff, line 163, with no obvious uptake to the head nurse's request. This may indicate that the nurses are familiar with the head nurse's discourse strategy of reminding them of the policies and required procedures. Both excerpts (54 and 53) demonstrate how the asymmetrical relationship between the head nurses and the staff nurses allow the former to be in a position of power and interrupt the handoff interaction and remind the nurses with the hospital regulations, issued as directives, as needed.

In the following example, Excerpt 55, in the same handoff shift at the Oncology/Pediatric ward, the head nurse (female, South African) interrupts to investigate a patient-related issue concerning pain management.

Excerpt 55 (Morning Shift) NGH- Oncology/ Pediatric Ward

175	HN	What about this the the the (1.0) the swelling?
176	Nurse	The swelling is the same. I did the measurement.. [
177	HN	IS?
178	Nurse	The same. It's 40, still big, but less pain.

179		He said it's less pain. Uh:: this one
180		The redness was still the same during the time when I received,
181		and <inaudible> the same. They don't want to move, even
182		I just move him in middle of the <inaudible> was this one,
183		but he refused compared to when I received him this morning,
184		because I give one dose of morphine.
185		They stopped the morphine.
186		They changed the Tramal to morphine instead
187	HN	Now, if he is a::: he was in pain with Tramal
188		uh was it regular, the Tramal?
189	Nurse	Uh:: yeah <inaudible>
190	HN	every te- <inaudible>
191	Nurse	But he's not settled [Background noise] <inaudible>
192	HN	What if we give it regular? Not jumping on to morphine?
193	Nurse	<inaudible> fine then complains
194	HN	Yes. We give (1.0) these are the things,
195		if your patient would complain once and then again,
196		then that's when you need to realize that
197		he needs it regular /*Sah*/? [i.e., 'right?]
198	Nurse	uh, Dr. <Name> she said she was planning to give-
199	HN	/*la, la , la*/ [i.e., 'no, no, no']. You now↑. Not about the doctor
200		You are the nurse now↑.
201		You see the child.
202		This is what is happening.
203		The doctor might come and <inaudible> and and you must say,
204		"Look, doctor. I need it this way because of one, two, three."
205		MOST of them, and <Name of Doctor> - was it <Name of Doctor>?
206		she's very stingy with a a -
207		she's doing a study, which is WRONG.
208		He's very stingy with a a a about analgesia
209		We'll talk about this.
210		We'll go to her.
211		She should she should not-
212		right now, we can't even weigh the child /*Sah*/ [i.e., 'right?]
213		They WILL.
214		Doctors will will say, "Oh, no. Let's do the- "
215		you are the nurse now. Who is there? You see PT.
216		It's difficult to do this. Give her give her this one
217		Or you continuously all regular, you know,
218		six hourly or four hourly, depending.
219		But PRN, PRN and then you give now.
220		After six hours, she complains again,
221		and then you give the same PRN.
222		Shift it to regular / *sah*/ [i.e., 'right?]
223		Go ahead
224	Nurse	Finished with this patient. Follow up the blood this a <inaudible>
225		Okay, Moving on to the next patient

Note:

Swelling: An abnormal enlargement of a body part or area, e.g., a protuberance or tumor.

Morphine: A narcotic medication which relieves severe acute and chronic pain; facilitates induction of anaesthesia.

Tramal: A central analgesic which is used to manage moderate to severe pain without causing loss of consciousness.
Analgesia: Absence of sensibility to pain, particularly the relief of pain without loss of consciousness; absence of pain or noxious stimulation.
PT: Abbreviation for patient.
PRN: Abbreviation for pro re nata, as the occasion arises; when necessary.

In line 175, the head nurse requests information about the status of the patient who suffers from tumor swelling in his left leg. The nurse (female, Filipino) indicates that based on the latest measurements, the swelling size has not changed. Then, after a clarification request by the head nurse in line 177, the nurse provides further elaboration of this issue over several turns (lines 178 to 186). In this elaboration, and based on field notes, the nurse explains that moving the patient and weighing the size of tumor was less painful for the patient because of the morphine dose which he received at the beginning of the nurse's shift. The nurse continues to explain that the patient has refused repeating the same procedure, in line 183 (*but he refused compared to when I received him this morning*) because of pain. She explains that the in-charge doctors have replaced the morphine medication with another medication which seems to be insufficient in managing the patient's pain.

After this elaboration, the head nurse sets a convincing plan to teach the nurse how to reach a point where she has to make the right decisions in such situations; that is, she makes them based on patient's observations during the shift. First, in lines 187-188 the head nurse asks if the patient has pain after receiving the new medication Tramal, and if the doses of Tramal are regular, with *Now, if he is a::: he was in pain with Tramal uh was it regular, the Tramal?* The nurse responds with an affirmative response in line 189, but it is unclear which part of the clarification request she is affirming due to the inaudible speech. Next, the nurse adds information in line 191 indicating that the patient is experiencing incessant pain, *he's not settled*. The head nurse then wonders if the regular administration of Tramal would control the pain and thus suggest substituting the administration of Morphine. The nurse, in

line 193, responds with an indication that the patient feels fine for a while and then complains of pain. This response leads the head nurse to remind the nurse of the guidelines of pain management policy. As observed in lines 194 to 197, the head nurse instructs the nurse that with the reoccurance of pain, the nurse needs to realize that the medication needs to be administered on regular basis. The nurse responds in line 198 with a hesitation marker *uh* followed by the in-charge doctor's pain management plan for the patient. However, before the nurse gets the chance to end her turn, she gets interrupted by the head nurse who holds the floor with several utterances. First, the head nurse expresses her disagreement with the referral to the doctor's decision in Arabic: *la, la , la/ [i.e., 'no, no, no']*. She then refers to the nurse with second-person singular pronoun *you* followed by a rising intonation *now*↑, indicating that it is the nurse's decision as opposed to the doctor's decision *You now*↑ *Not about the doctor,* line 199. The head nurse then reminds the nurse that she is the one who is observing the patient and who knows what is happening. Then, the head nurse provides a scenario of the situation, and an imagined response to what the nurse should have said to the in-charge doctor, in line 204: *"look, doctor. I need it this way because of one, two, three."* The head nurse then elaborates and indicates that this particular doctor is, in her opinion, extremely conservative about prescribing pain killers. She further indicates that one of the reasons for this change in the patient's pain management plan is that the doctor is conducting a study, in line 207: *she's doing a study, which is WRONG*. The head nurse next uses the first-person plural pronoun *we* followed by the plan; that is, the nursing team will discuss this issue with the in-charge doctor, in lines 209-210. The head nurse then explains the negative outcome of this decision; that is, the nurses are unable to administer the tumor weighing procedure due to the pain that patient is enduring during the process, in line 212. The head nurse then provides another scenario indicating that doctors may decide on something, but ultimately, the nurse who observes the patient needs to speak up and request the required

administration of medication, in lines 214 -216. The head nurse concludes by affirming that the reoccurance of pain indicates that the medication needs to be given regularly, instead of as needed.

Except 55, exemplifies the vital role that head nurses play in nursing handoff interactions. As illustrated above, the head nurse in this example provided a teaching opportunity for nurses on how to be responsible for deciding what is good for the patient (that is, based on their observations during the shift) even if it goes against doctors' orders. It seems quite radical, yet at the same time seems to empower the nurses to do their job. The head nurse even provided scenarios of what doctors might say and what nurses should say in return to support their decisions.

Taken together, this part of the data aligns with Ainsworth-Vaughn (2003) in supporting the claim that questions in medical discourse are meant to request for more information (p.461). As noted above, head nurses tend to request more information mostly via questions and clarification requests. Additionally, head nurses in this dataset exhibited a tendency to control the flow of talk until they acquired the needed information and resolved patient-related concerns. Hence, similar to doctors' discourse (Boyd & Heritage, 2006; Eggins & Slade, 2012), the findings of this research question suggest that head nurses also use questions to guide the flow of talk in nurse-to-nurse interactions and to gather essential patient information from departing nurses. Thus, beyond asserting control and power over the interactions, head nurses' primary goal of interruptions and questions is derived by the need to gather and clarify patient information in order to ensure patient safety. Accordingly, head nurses' interruptions enhance the handoff interactions by eliciting additional information that otherwise would remain unknown or unspoken.

Conclusion

In the first section of this chapter, I explored the entire dataset to identify communication strategies and discourse features which may contribute to the recommended best practices for the nursing handoffs in these sites. The analyses revealed that identical to clinical handovers (Eggins & Slade, 2012), certain communication strategies lead to problematic handover interactions. Interactionally, for example, the data revealed that introducing the nursing handoff with clear framing, using staging expressions, being assertive, and presenting complete thoughts and sufficient detailed patient information were valuable communication strategies that led to clear and complete nursing handoffs. Informationally, the data also revealed that presenting the information in logically structured stages (similar to NGH handoffs) and being specific and certain while presenting patient information enhanced the handovers. Additionally, the data revealed that the use of discourse features such as discourse markers contributed to the structuring of the discourse of the nursing handoff.

In the second part, I provided a close-up examination of several handoffs which might be considered problematic, because they deviated from what is recommended as best practice. By focusing on detailed and fine-grained analysis of specific examples, I identified and highlighted several communication strategies and discourse features that led to less problematic nursing handoffs. My analysis revealed three major aspects of these handoffs: 1) nurses' use of undesired communication strategies, such as the use of questions instead of statements, the use of vague language, the shift in verb tenses, and grammatical errors; 2) nurses' focus only on one patient-related issue as opposed to following the protocol components, and presenting full detailed patient information (as illustrated in Excerpt 45); and 3) nurses' use of patients' files during the handoff, instead of a concise guiding handoff chart. Importantly, the findings of this analysis align with Eggins and Slade (2012) who

argued that the use of informational management protocols (such as SBAR) may constrain clinicians' ability to produce clear handovers if not accompanied with the appropriate communication skills. In this dataset, the analysis revealed that nurses in KFGH were not only unable to use the desirable communication skills, but also were not propely following the SBAR protocol.

In the last section of this chapter, I examined head nurses' contributions to the handoff interactions. These findings add to the body of research which have examined asymmetrical power in medical interactions (Ainsworth-Vaughn, 2003; Erickson & Rittenberg, 1987; Shattell, 2004; Staples, 2015; Stagger & Blaz, 2013). The analysis revealed several features relevant in nurse-to-nurse handoff interactions: 1) similar to physicians (in physician-patient interactions), head nurses use questions to interrupt, control the flow of talk, request clarifications, and investigate various issues; 2) head nurses are responsible for determining the topics that need to be investigated and for deciding the ultimate patient-related decisions that need to be taken (e.g., Excerpt 52); and 3) head nurses may interrupt handoffs to provide instructions or policy reminders that should be followed when administering certain procedures. These findings demonstrate the active and important role that head nurses play in nurse-to-nurse interactions. Consequently, head nurses' contributions played an essential role in the handoff interactions in this dataset.

CHAPTER SIX:

DISCUSSION AND CONCLUSION

In this research study, using on discourse analysis, I examined authentic nurse-to-nurse handoff interactions in two hospitals in Saudi Arabia. This investigation is unique, as to date, little is known about this type of nursing discourse; additionally, nurse handoff communication is still considered problematic. Previous literature on this topic demonstrated its vulnerability to errors as well as its reported incompleteness, inaccuracy, and inconsistent presentations (McFetridge et al., 2007; O'Connell et al., 2008; Payne et al., 2000; Riesenberg et al., 2010; Staggers & Blaz, 2013). In this chapter, I provide a brief synthesis of the major findings of this study in relation to previous research. Following this synthesis of the findings, I discuss the implications of this study for medical research, specifically research on nursing discourse. Finally, I conclude this chapter with the limitations and directions for future research.

In chapter four, I examined the dataset from both sites, the National Guard Hospital (NGH) and King Fahad General Hospital (KFGH). The data analyses in this chapter revealed key findings related to nurse-to-nurse handoff interactions. In research question one, the analysis demonstrated two major findings; one is related to the NGH, and the other is related to KFGH. For the NGH, this study revealed the internal structure of the nursing handoff interactions in this setting. Working inductively from the data, I generated a six-stage nursing handoff model which should benefit nursing educators and training programs in this setting, specifically the nursing educators at the Nursing College, which prepares Saudi nurses for the

nursing profession. For instance, this handoff model could be used as a training model in the National Guard Hospital and its branches in Saudi Arabia. Additionally, nurse educators at the Nursing Colleges in all sites could use the model to supplement the simulation nursing training lessons that are currently conducted in the colleges. Language teachers could also use the model, as well as the authentic samples of interactive language, to familiarize and train nursing students about those discourse features which seem to promote effective nursing communication; highlighting actual discourse of nursing, which nursing students will eventually perform in hospitals. The analysis also revealed some areas for improvement (e.g., the *recommendation* and *closing* stages), which should be of interest to the Nursing Department at this site to further ensure patient safety and to avoid possible adverse events.

As for King Fahad General Hospital, the analysis revealed that nurses follow, to varying extents, a "SBAR-like" protocol. However, as discussed in research question one, there were a considerable amount of deviations from the standardized SBAR protocol, which could potentially impact patient safety. For instance, the analysis revealed that nurses mostly focus on the *situation* and *background* components of SBAR protocol and bypass the rest of the components. Additionally, the analysis suggested that nurses tend to adhere to some elements of each component, and overlook others. Consequently, the process of the handover in this sample of data, though in theory guided by SBAR protocol, lacked consistency and structured presentation of patient information between the nurses. One solution might be to use a SBAR handoff sheet, which nurses would complete prior to the handoff sessions and use to guide the handoff interactions. The National Guard data set suggests this strategy could be highly valuable. The use of the handoff sheet would likely minimize its vulnerability to errors and ensure the adherence to SBAR's major components, as well as its sub-phases. This should help the nurses in organizing the flow of patient information to meet the protocol

requirements and to avoid collapsing the SBAR phases into one or two phases (as demonstrated in this dataset).

Previous clinical research on nursing handoffs (e.g., Kerr, 2002; Manians & Streeter et al., 2000; Riesenberg et al., 2010; Smeulers et al., 2014) has mostly focused on the process of the handoff and its relation to the effectiveness of the interactions. To date, little is known about the actual language that nurses use in nurse-to-nurse handoff interactions in this setting. Thus, the findings of the present study expanded this area of research. The analysis in research question two revealed a detailed description of the discourse pragmatic features that nurses use in this type of nursing discourse. As highlighted by previous scholars (e.g., Staples 2015), I found that nurses use a wide-range of discourse pragmatic features to manage and organize nurse-to-nurse handoff interactions, including questions, discourse markers, backchannels, hesitation markers, overlapping, humor, etc. For instance, the findings showed that similar to physicians (e.g., Ainsworth-Vaughn, 2003; Boyd & Heritage, 2006; Robinson, 2006), nurses (head nurses and staff nurses) use questions (mostly declarative questions) during handoff interactions. Nurses also used various interactional features which helped in organizing and presenting patient information in nursing handoffs. Specific to this context, code-switching to Arabic (at the word-level) emerged as an interactional feature that nurses used to fill in various semantic functions in the handoff discourse. While Arabic seemed to be used to express a limited range of concepts, as discussed in chapter four, this interactional feature should perhaps be used with caution as, based on the surveys, various nurses reported their limited Arabic proficiency.

In research question two, I also examined the use of interpersonal involvement features in this type of nursing discourse. The findings illustrated that nurse-to-nurse handoff interactions, similar to other types of institutional discourse (Wodak, 1997; 2006), are extremely task-oriented; that is, unlike casual conversation, the participants' dialogue is

restricted to achieve specific goals. In spite of the formal nature of the handovers, the data uncovered a few instances of relational work among the participants, including team-building and humor. I examined these examples to provide some insights into the discourse strategies the nurses use to manage the relational side of these interactions. As demonstrated in chapter four, I illustrated that, in general, head nurses are responsible for initiating and managing the relational work in this nursing discourse. For instance, as exemplified in Excerpt 41, the head nurse used first-person pronouns as a strategy to establish and maintain solidarity and co-membership among the nursing team. In a few instances, head nurses used *humor* to lessen the asymmetry and create a friendly relationship, thus building the team cohesion and interpersonal relationships (Eggins & Slade, 2004; 2012). These findings confirm previous research which highlighted this implicit function of nursing handoffs; in this case, this is realized as the interpersonal function by which nurses establish and reinforce their group values and cohesion (e.g., Lally, 1999; Staggers & Blaz, 2013). However, expanding on these findings, the analysis of this study suggested that head nurses, who have more power within the handoff interaction, were responsible for initiating and reinforcing similar functions. The analysis showed that these examples of diversions from the main task of handing over patient information were well-managed by the head nurses who always kept the handoffs on track. This demonstrates the vital role that head nurses play in nurse-to-nurse handoff interactions.

In chapter five I provided a close examination of several handoff interactions and I examined the impact of the asymmetrical relationship between nurses during the handoff interactions. The analyses uncovered the following key findings. First, as highlighted by previous scholars on clinical handoffs (Eggins & Slade, 2012), nursing handoffs were communicatively effective when supplemented with the appropriate interactional and informational communication strategies. The data analysis of the data from the National Guard Hospital demonstrated that patient information was never fully presented in the

handoff charts, and that it was unfolded during the presentation and negotiation of patient information in the handoff interactions. Thus, nurses' successful presentation of patient information and the use of appropriate communication strategies played a role in enhancing the handoff interaction. On the other hand, the analysis of the data from King Fahad General Hospital showed, though it was assumed that nurses used the SBAR protocol to guide the handoffs at KFGH, some SBAR handoff components were missing, patient information was presented in a vague and incomplete manner, and the process of the handoff lacked the internal consistency between the nurses across the hospital wards.

Secondly, in chapter five, I examined the impact of the asymmetrical power relationship between the nurses on the nursing handoff interactions. Previous empirical investigations exploring power in medical interactions focused mainly on doctor-patient interactions (e.g., Ainsworth-Vaughn, 2003; Boyd & Heritage, 2006; Wodak, 2006), while fewer studies examined power in nurse-patient interactions (Shattell, 2004; Staples, 2015). Therefore, this study expands these empirical investigations to include power in nurse-to-nurse interactions in nursing handoffs. As illustrated in chapter five, within the nurse-to-nurse handoff interactions, head nurses are in the position of power; thus, I examined their questions and interruptions. The analysis illustrated that head nurses utilized information solicitation strategies to gather required patient-related information. The analysis also suggested that head nurses may interrupt and hold handoffs as needed to investigate, clarify, and reinforce procedures and policy administration. This research also provided insights into the impact of head nurses' interruptions on this type nursing discourse. As illustrated in the data analysis, head nurses' questions and interruptions played a significant role in enhancing the handover interactions. For example, as Excerpt 51 demonstrated, there were times when head nurses' interruptions and information seeking strategies appeared to be vital and to prevent potential patient risk. The data provided evidence, therefore, for the positive impact

of head nurses' contributions beyond their guiding of interactions; that is, head nurses employed conversational strategies that enhanced the quality of nursing handoffs, and thus, of patient safety.

Implications for Nursing Research

Examining medical discourse using discourse analyses has led to major contributions to medical research (Jones, 2013; Slade et al., 2015; Iedema, 2007). These contributions include improving doctor-patient communication (Candlin & Candlin, 2003; Heritage & Maynard, 2006); identifying discourse features of doctor-patient interaction which eventually led to patient involvement, satisfaction, and positive health outcomes (Heritage & Maynard, 2006; Iedema, 2007); and highlighting the importance of effective communication, which most likely enhances the quality of services in healthcare organizations (Heritage & Maynard, 2006; Iedema, 2007; Slade et al., 2015). Moreover, the recent discourse investigations which have shifted from clinical contexts to hospital contexts have enriched this area of research (e.g., Eggins & Slade, 2012; Slade & Eggins, 2016; Slade et al., 2015).

This study expands these investigations to include nursing discourse. The findings contribute to our understanding of nursing discourse, generally, and to nurse-to-nurse handoff interactions, specifically. This type of discourse is still of interest due to its continuous reported communication difficulties and the lack of information about the actual language that is being used (e.g., Drach-Zahavy & Hadid, 2015; McFetridge et al., 2007; Slade & Eggins, 2016). That said, this study has implications for nursing training in this specific type of interaction. To begin with, the dataset in this study demonstrated the valuable role of nurses in the medical workforce. Nursing handoff interactions suggested that nurses, similar to doctors, perform vital roles in handling and ensuring the continuity of patient care and

safety. I illustrated in this study how nurses worked in harmony as they delivered the great deal of patient information during handoff interactions. However, as stated by Slade et al. (2015), examining communication in complex, high-stress, and unpredictable dynamic work environments, such as hospital settings, may also reveal communication practices that are associated with misunderstandings and communication breakdowns, which may potentially negatively impact patient satisfaction and safety. Identifying these communicative practices would help to enhance medical interactions; subsequently, such knowledge could improve patient safety and the quality of services provided to patients (Slade et al., 2015).

As demonstrated in chapters four and five, nursing handoffs proved to be a challenging type of institutional practice that nurses, who come from various linguistic and cultural backgrounds, need to carry out on daily basis. One of the goals of this study was to examine this type of interaction to identify its linguistic and interactional features and the various communication issues which may occur during these authentic interactions. The results of this study revealed both exemplary communication practices as well as some areas for improvement; thus, some nurses may benefit from further handoff communication training, to ensure patient safety. Nursing training programs in these settings can provide nurses with training on how to closely adhere to all of the components of handoff protocols (e.g., SBAR protocol) and, more importantly, how to use successful communication strategies to enhance presenting and receiving the nursing handoffs.

Pedagogical Implications

Giving the increasing demand to prepare Saudi nurses so they become qualified members in the Saudi Arabian healthcare system, this study has several pedagogical implications for both Nursing and English language educators in this setting. First, this dataset included samples from Saudi female nurses who performed as well as their international colleagues in producing efficient handoffs. Such samples could be used to

supplement pedagogical practices presented to novice Saudi nursing students and as sources of teaching materials in their Nursing or English language classes. Based on field notes, various Saudi nurses indicated that they had never received any training on how to perform nursing handoffs, which may explain the various levels of adherence to the SBAR protocol. Consequently, the six-stage model of nursing handoff used at the NGH, which emerged from this study, can be used by language and/or nursing instructors as a training tool to raise students' awareness of this type of interaction, its linguistic and interactions features, and its associated communication strategies. Furthermore, the authentic data (that is, actual transcripts of nurses' handoff interactions) can also be used to improve materials and activities in language and nursing courses. Familiarizing novice nurses with desirable communication skills that are needed to carry out handovers is a helpful step that will positively contribute to the quality of safe patient care.

Limitations of the Study

In this section, I present the limitations with respect to the methodological aspects of the study. Additionally, a number of other limitations related to the findings of the study will be addressed.

The major methodological issue that I will address here relates to the participants' background questionnaires. Based on field notes and observations, around 190 nurses participated in this study; however only few nurses could complete the survey. The time of the shift (end of working hours) and nurses' immediate need to leave the workplace (specifically after long exhausting shifts) were the factors that led to less successful implementation of the background questionnaires. Consequently, information related to participants' gender, age, country of origin, proficiency in Arabic, working experience, and length of residency in Saudi Arabia is missing for the majority of participants. Nevertheless,

the low number of collected surveys was useful for my analysis and interpretation of the data, specifically on the issue of code-switching into Arabic which was discussed in research question two. In the 63 collected surveys, 46 (73%) international nurses reported their language proficiency in Arabic as "none" or "poor", and only two nurses reported their language proficiency in Arabic as "intermediate." Accordingly, I determined that code-switching into Arabic could be an undesirable interactional feature used in the nursing handoff interactions in this setting. Therefore, future research on this topic might include a perceptual component which traces the impact of code-switching on nursing handoff interactions.

Another limitation of this study is related to the findings of this study which could be specific only to these two contexts in Saudi Arabia. Clearly generalizability is not the goal, however because handoffs happen in all hospitals, there may be similar issues in other Saudi Arabian hospitals, or other hospitals with highly international nursing staff.

An additional limitation ofthis study relates to the data collection. This study relies mostly on recordings of verbal interactions among nurses. Although this data collection method is supplemented by observations and field notes, not all of the non-verbal features of these interactions were recorded, which may impact the interpretations, and thus the findings, of this study. However, it is important to note that video-taping in health institutions could be challenging, as it might violate patients' and healthcare providers' privacy in these contexts. This is also might lead to unnecessary complications in obtaining access to the site access. I believe that my use of audio data, triangulated with observations, field notes, and background questionnaires, allowed me to capture sufficient features of the conversational exchanges for a preliminary study of nursing discourse. Given my interactional sociolinguist approach (Gumperz, 1997; 2001), my data is sufficient to examine the meaning and discursive features of nursing communicative interactions.

Future Research Directions

As an analysis of authentic nursing discourse, this research study explored a new area in healthcare communication and provided a rich resource of authentic, nurse-to-nurse interactions. The findings of this study provide insights about the ways in which nurses use the language to produce a complex and demanding type of nursing discourse in the hospital settings. To date, doctor-patient interaction controls the primary focus of most discourse researchers at the expense of other healthcare interactions. Thus, more can be done to enhance this area of research and expand it to include other healthcare interactions beyond doctor-patient interactions. Informed by the data in this study, in this final section, I suggest some possible avenues to explore in future research.

As demonstrated in the data analysis, based on the sample data from King Fahad General Hospital, it was clear that nurses are not carefully following the SBAR protocol. Thus, future research in this specific context could focus solely on nursing handoffs at KFGH and across all the hospital wards; that is, this research could examine the adherence to SBAR protocol in this setting. This exclusive examination could provide insights into the required training that nurses in this setting may need.

Based on the major findings of this study, I also suggest some broader areas for future research. First of all, the focus of this study was limited to nurse-to-nurse handoff interactions. Even though the findings enhance our understanding of this type of interaction, further research is necessary to follow up with patients in order to explore patients' perspectives of nursing handovers, their awareness of its benefits, their satisfaction with its outcomes, and even their potential role in this type of communication. In addition, future investigations may explore nurses' perceptions of the nursing handoff practices, for example via self-reports, individual and/or focus group interviews. In the present study, the participants represent various demographic backgrounds; thus, it would be beneficial to

examine nurses' perceptions of this practice and the relative impact of these perceptions on the nursing handoff practices.

Another possible area of research which could be explored further is the code-switching use of Arabic. The findings of this study revealed that in a highly international context, code-switching into Arabic is an existing phenomenon. Based on the questionnaire findings, it was recommended that nurses should use this interactional feature with caution, since various nurses reported their limited proficiency in Arabic. Thus, it would be valuable to explore this interactional feature and its potential impact on the overall comprehensibility, and the completeness of the transferred patient information in nursing handoffs. Related to this avenue of future research, since in this study various international nurses, whose first language is not Arabic, used code-switching into Arabic, it would be interesting to explore the applicability of this finding to other medical contexts.

In summary, as showed in this study, nursing handoff is an essential practice which ensures the continuity of patient care in hospital settings. This study has shed light on this nurse-to-nurse interaction, including how this practice is performed, and how patients' information is transmitted between departing and incoming nursing teams during shift change. The innovative aspect of this investigation was the use of multiple discourse analytic approaches to examine the actual language use in handoff interactions, which revealed the complexity of this practice, and provided many insights that would be of interest to scholars interested in discourse analysis, as well as scholars interested in nursing discourse. Additionally, the descriptions of various discourse pragmatic features, including linguistic, interactional, and interpersonal features, as well as the communication strategies that were used in the nursing handoff interactions in this study should be helpful for nursing and language training programs in this setting. Finally, the findings of this study revealed the

need for further future research to explore similar medical and nursing encounters to help enhancing the quality of nurse communication and to ensure patient safety and satisfaction.

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APPENDICES

Appendix A: USF IRB Approval Letter

USF
UNIVERSITY OF
SOUTH FLORIDA

RESEARCH INTEGRITY AND COMPLIANCE
Institutional Review Boards, FWA No. 00001669
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
(813) 974-5638 • FAX (813) 974-7091

May 6, 2016

Abeer Mohammad
Teaching and Learning
Tampa, FL 33613

RE: **Expedited Approval for Initial Review**
IRB#: Pro00025267
Title: The Discourse of Nursing Handoff: Exploring Nurse-to-nurse Interactions through Discourse Perspectives

Study Approval Period: 5/6/2016 to 5/6/2017

Dear Ms. Mohammad:

On 5/6/2016, the Institutional Review Board (IRB) reviewed and **APPROVED** the above application and all documents contained within, including those outlined below.

Approved Item(s):
Protocol Document(s):
Research protocol for eIRB - Pro00025267 The Discourse of Nursing Handoff Exploring Nurse-to-nurse Interactions through Discourse Perspectives.docx

Note, no research activities can begin without submitting the required letter of support and receiving an approval through the Amendment process.

Consent/Assent Document(s)*:
Informed Consent Form.pdf

*Please use only the official IRB stamped informed consent/assent document(s) found under the "Attachments" tab. Please note, these consent/assent document(s) are only valid during the approval period indicated at the top of the form(s).

It was the determination of the IRB that your study qualified for expedited review which includes activities that (1) present no more than minimal risk to human subjects, and (2) involve

only procedures listed in one or more of the categories outlined below. The IRB may review research through the expedited review procedure authorized by 45CFR46.110. The research proposed in this study is categorized under the following expedited review category:

(6) Collection of data from voice, video, digital, or image recordings made for research purposes.

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

As the principal investigator of this study, it is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB. Any changes to the approved research must be submitted to the IRB for review and approval via an amendment. Additionally, all unanticipated problems must be reported to the USF IRB within five (5) calendar days.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

Kristen Salomon, Ph.D., Vice Chairperson
USF Institutional Review Board

Appendix B: NGH- IRB and Site Access Approvals

Kingdom of Saudi Arabia
Ministry of National Guard - Health Affairs

المملكة العربية السعودية
وزارة الحرس الوطني - الشؤون الصحية

King Abdullah International Medical Research Center
(KAIMRC)

(84) 94458 1515 84466 irb@ngha.med.sa

IRB Office Memo Ref.No. **IRBC/947/16** E-CTS Ref. No. **RYD-16-417780-161744**

Study Number: **SP16/255/J**
Study Title: **The Discourse of Nursing Handoff: Exploring Nurse-To-Nurse Interactions through Discourse Perspectives**
Study Sponsor: **Non Grant**
IRB Approval Date: **16 October 2016**
IRB Review Type: ■ **Expedited Review** ☐ **Full Board**
Study site(s): **Western Region**

Dear **Dr. Tagwa Omer**
Dean, College of Nursing
King Saud Bin Abdulaziz University for Health Sciences - Jeddah

After reviewing your submitted research proposal/protocol and related documents, the IRB has APPROVED the submission.

The approval includes the following related documents:

Document/Title	Version	Date
Research Proposal	01	16 Oct 2016
Appendix A - Questionnaire	01	16 Oct 2016
Appendix B – Note-Taking Sample	01	16 Oct 2016
Cross-Sectional – Informed Consent Form	01	16 Oct 2016

The approval of the research study is valid for **one year** from the above approval to expiration date.

Terms of Approval:

- **Annual Reports:** An Annual report must be submitted for approval to avoid termination/suspension of your research.
- **Financial report:** If your study is funded project, details financial report should be submitted with the scientific report.
- **Final Report:** After completion of the study, a final report must be forwarded to the IRB.
- **Retention of original data:** The PI is responsible for the storage and retention of original data pertaining to the project for a minimum of five years.
- **Reporting of adverse events or unanticipated problems:** The PI is responsible to report any serious or unexpected adverse events or unanticipated problems, which could involve a risk to participants or others.
- **Biological samples:** No biological samples to be shipped out of the Kingdom of Saudi Arabia without prior IRB approval.
- **Participant incentives:** No financial compensation or gifts to be given to participants without prior IRB approval.
- **Storage of biological samples:** All biological samples collected for the purpose of this research must be stored in the KAIMRC Biobank facility.

20 OCT 2016

Dr. Abdallah Adlan
Chairman, Institutional Review Board (IRB)
Ministry of National Guard Health Affairs

AA/cad

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تلكس ٤٠٣٤٥٠

Kingdom of Saudi Arabia
Ministry of National Guard
Health Affairs

المملكة العربية السعودية
وزارة الحرس الوطني
الشؤون الصحية

Date: 29/09/2016

To: **Mrs Abeer Mohammed**
PhD Student, Con-J

From: **Dr Elham Al Bukhari**
Director, Nursing Education
King Abdulaziz Medical City

Subject: **DATA COLLECTION PROCESS FOR RESEARCH PROPOSAL TITLED: THE DISCOURSE OF NURSING HANDOFF: EXPLORING NURSE-TO-NURSE INTERACTIONS THROUGH DISCOURSE PERSPECTIVES.**

Kindly be informed that your request for data collection to explore language patterns used between nurses during handover in the organization and how these impact on the success of the handover has been approved with provision that I will be present on one-two sessions.

Regards,

Dr Elham Al Bukhari
Director, Nursing Education
King Abdulaziz Medical City

Approved by:

29 Sept 2016
Ms Bonni Scudder
Associate Executive Director, Nursing Services
King Abdulaziz Medical City

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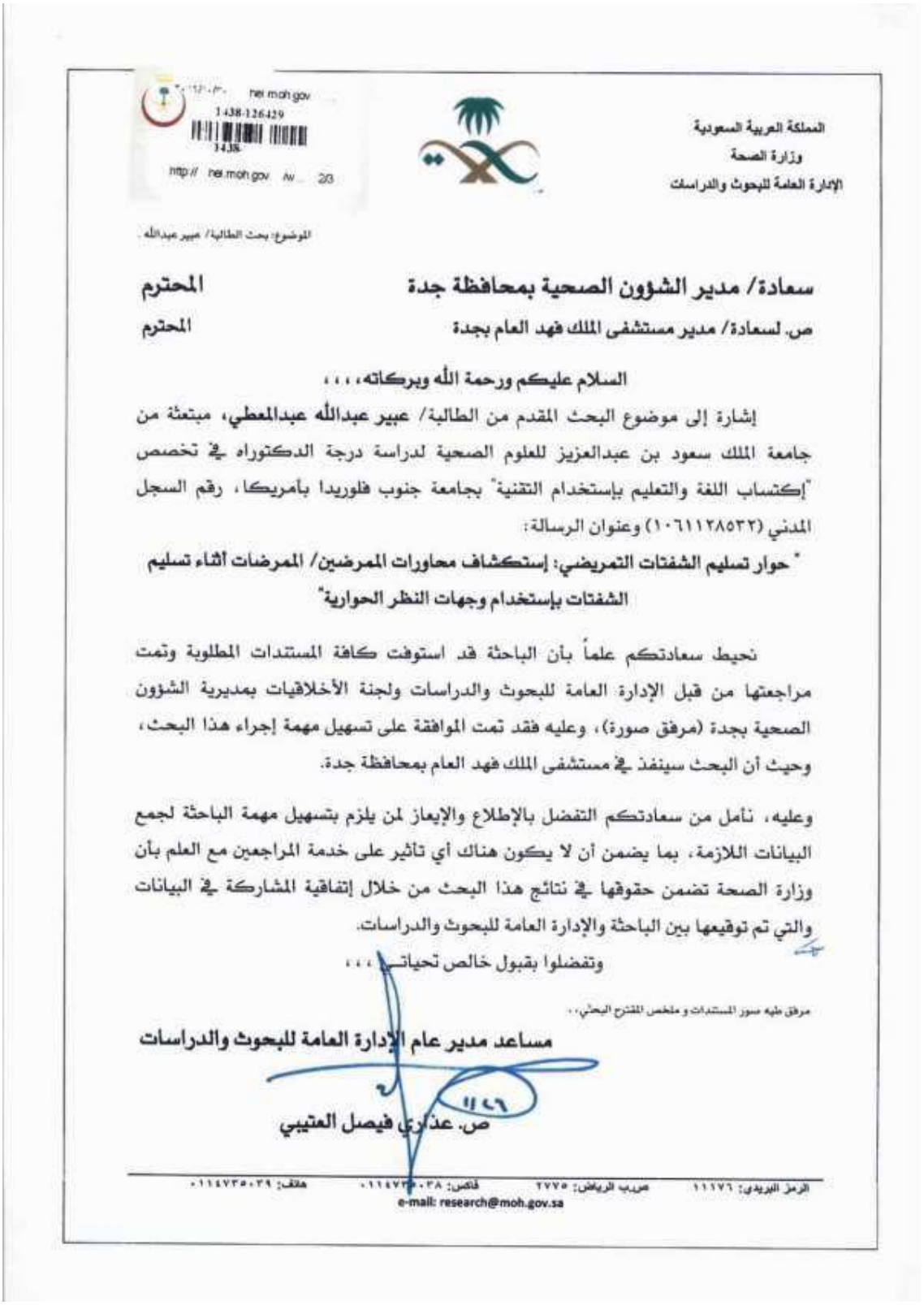
ص.ب ٩٥١٥
جدة ٢١٤٢٣
المملكة العربية السعودية
فاكس : ٢٢٦٦٢٠٠ (٠١٢)
تليفون : ٢٢٦٦٦٦٦ (٠١٢)

ORACLE 116237

Appendix C: KFGH- IRB and Site Access Approvals



المملكة العربية السعودية
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الإدارة العامة للبحوث والدراسات

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الموضوع: بحث الطالبة/ عبير عبدالله

سعادة/ مدير الشؤون الصحية بمحافظة جدة **المحترم**

ص. لسعادة/ مدير مستشفى الملك فهد العام بجدة **المحترم**

السلام عليكم ورحمة الله وبركاته،،،

إشارة إلى موضوع البحث المقدم من الطالبة/ **عبير عبدالله عبدالمعطي**، مبتعثة من جامعة الملك سعود بن عبدالعزيز للعلوم الصحية لدراسة درجة الدكتوراه في تخصص "إكتساب اللغة والتعليم بإستخدام التقنية" بجامعة جنوب فلوريدا بأمريكا، رقم السجل المدني (١٠٦١١٢٨٥٣٢) وعنوان الرسالة:

" حوار تسليم الشفتات التمريضي: إستكشاف محاورات الممرضين/ الممرضات أثناء تسليم الشفتات بإستخدام وجهات النظر الحوارية"

نحيط سعادتكم علماً بأن الباحثة قد استوفت كافة المستندات المطلوبة وتمت مراجعتها من قبل الإدارة العامة للبحوث والدراسات ولجنة الأخلاقيات بمديرية الشؤون الصحية بجدة (مرفق صورة)، وعليه فقد تمت الموافقة على تسهيل مهمة إجراء هذا البحث، وحيث أن البحث سينفذ في مستشفى الملك فهد العام بمحافظة جدة.

وعليه، نأمل من سعادتكم التفضل بالإطلاع والإيعاز لمن يلزم بتسهيل مهمة الباحثة لجمع البيانات اللازمة، بما يضمن أن لا يكون هناك أي تأثير على خدمة المراجعين مع العلم بأن وزارة الصحة تضمن حقوقها في نتائج هذا البحث من خلال إتفاقية المشاركة في البيانات والتي تم توقيعها بين الباحثة والإدارة العامة للبحوث والدراسات.

وتفضلوا بقبول خالص تحياتي،،،

مرفق طيه صور المستندات و ملخص المقترح البحثي،،

مساعد مدير عام الإدارة العامة للبحوث والدراسات

ص. عذري فيصل العتيبي

الرمز البريدي: ١١١٧٦ ص.ب الرياض: ٢٧٧٥ فاكس: ٠١١٤٧٣٥٠٣٨ هاتف: ٠١١٤٧٣٥٠٣٩
e-mail: research@moh.gov.sa

المملكة العربية السعودية
Kingdom of Saudi Arabia
مديرية الشؤون الصحية بمحافظة جدة
Directorate of Health Affairs - Jeddah
(٢٠٢/٢٧٥)
الإدارة: إدارة البحوث والدراسات الطبية

وزارة الصحة
Ministry of Health

الموضوع: الموافقة على إجراء بحث

سعادة مدير مستشفى الملك فهد العام بمحافظة جدة المحترم،،،

السلام عليكم ورحمة الله وبركاته..

نفيدكم بأن الباحثة اسمها أدناه سوف تقوم بإجراء البحث كالتالي:

اسم الباحثة:	عبير عبدالله عبدالمعطي محمد
رقم البحث:	٠٠٧٠١١
رقم الموافقة:	A٠٠٣٧٧
عنوان البحث:	حوار تسليم الشفتات التمريضي: استكشاف محاورات الممرضين \ الممرضات أثناء تسليم الشفتات باستخدام وجهات النظر الحوارية.
مدة الموافقة:	سنة من تاريخه

بناء على موافقة الإدارة العامة للبحوث والدراسات بوزارة الصحة ١٢٦٤٢٩ بتاريخ ١٤٣٨/٠١/٢٩هـ ولجنة أخلاقيات البحث العلمي بصحة جدة ٩٩٨٨٤ بتاريخ ١٤٣٨/٠١/٢٤هـ ، وجد أنه لا مانع من إجراء البحث.

أمل تسهيل مهمة الباحثة في إجراء البحث مع مراعاة الآتي:

١. اتباع قوانين اللجنة الوطنية للأخلاقيات الحيوية والطبية.
٢. في حال أي تغيير في خطة البحث يجب الحصول على موافقة إدارة الأبحاث.
٣. عدم تأثر الخدمة في المرافق المعنية.
٤. المحافظة على حقوق الأشخاص الخاضعين للبحث وخصوصياتهم.
٥. استخدام المعلومات لأغراض البحث العلمي فقط.
٦. تقديم تقرير عن سير الدراسة لإدارة البحوث كل ثلاثة أشهر.

و نرفق لسعادتكم (خطة البحث – الاستبيان – الموافقة المستنيرة - السيرة الذاتية).

شاكرين تعاونكم.

وتفضلوا بقبول أطيب تحياتي،،

مدير إدارة البحوث والدراسات الطبية
د/ محمد عبد الرؤوف توفيق
١٤٣٨/١/٣٠هـ

مساعد مدير الشؤون الصحية للتخطيط والتطوير بمحافظة جدة
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الرقم: ٤٨١٦٦-١٤٧/٢٧/ج/٤٧ التاريخ: ١ / ٢ / ١٤٣٨هـ المشفوعات: ٢

هاتف: ٠٢-٦٩٧٠٠٠٦ / ٠٢-٦٨٣١٣٧٧ فاكس: ٠٢-٦٦٢٢٩٦١ ص.ب: ١٢٤٩٣ جدة: ٢١١٧٦
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وزارة الصحة
Ministry of Health

المملكة العربية السعودية
Kingdom of Saudi Arabia
مديرية الشؤون الصحية بمحافظة جدة
Directorate of Health Affairs - Jeddah
(٢٠٢/٢٧٥)

Department: Medical Research and Studies

Subject: Initial Approval

IRB Registration Number with KACST , KSA : H-02-J-002

Date: 23/01/1438H

Research Number: 00711

Initial Approval with Conditional

To: Principal Investigator : ABEER ABDULLAH A. MOHAMMAD
Supervisor: DR. Camilla Vásquez
Submission date: 26/12/1437H
Study Title: The Discourse of Nursing Handoff: Exploring Nurse-to-nurse Interactions through Discourse Perspectives.

The adove titled research / study proposal has been examined with the following end closures:

- **The study Protocol.**
- **Questionnaire.**

The IRP recommended granting permission of approval to conduct the project along the following terms:.

1. The PI and investigators are responsible to get permission from the head of department or unit in the institution to commence data collection.
2. The Investigator will conduct the study under the direct supervision by **DR. Camilla Vásquez**.
3. Provide IRB " Continuing Review Progress Report" every **6 month**.
4. Any amendments to the Approved Protocol or any element of the submitted documents should NOT be under taken without prior re-submission to , and approval of the IRB for prior approval.
5. Monitoring: The Project may be subject to audit or any other form of monitoring by the IRB.
6. The PI is responsible for the storage and retention of original data of the study for a minimum period of five years.
7. The PI is expected to submit a final report at the end of the study.
8. The PI must provide to IRB a conclusion abstract and the manuscript before Published.
9. The PI and researchers are required to have current and valid certificate on protective human research subjects.
10. To follow all regulation issued by the National Committee of bio med ethics – king Abdul Aziz city for science and technology.

The organization and operating procedures of the research and study Administration – Directorate of health Affairs – Jeddah – Institutional review board (IRB) are based on the good clinical Practice , (*GCP*) Guidelines.

- *PLEASE NOTE THAT THIS APPROVAL IS VALID FOR **ONE YEAR** COMMENCING FROM THE DATE OF THIS LETTER.*

Best Regard.

Dr / Mohammed Abdoul Raouf Tawfiq
Chairman of Institute Review Board

الرقم: ٤١٢٢٩٩٨٨٤/ع/٤٧ التاريخ: ٢٤ / ١ / ١٤٣٨هـ المشفوعات: ١١٢

هاتف: ٠٢-٦٩٧٠٠٠٦ / ٠٢-٦٨٣١٣٧٧ فاكس: ٠٢-٦٦٢٢٩٦١ ص.ب: ١٢٤٩٣ جدة: ٢١١٧٦
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Appendix D: Nursing Handoff Samples (NGH and KFGH)

NURSING HANDOFF SAMPLE 1: NGH-INTENSIVE CARE UNIT

(34) (0.00.00 – 0.15.04) **ICU (Night Shift) Record #261110_002** **Nurse: Female – Saudi** **IN Nurse: Female - Filipino**		
1	Nurse	Okay, good evening
2	IN-N	[crosstalk] Yes, hi
3	Nurse	Um, Bed 21. <Patient's Name> MRN <File Number>
4		Uh:: She is female patient, 59 years old
5	IN-N	Okay
6	Nurse	Under neurosurgery, Dr. <Doctor's Name> She's letter of acception,
7		limited only for neurosurgery.
8		Um, this patient is uh:: admitted, accepted transferred
9		from uh Al-Hada hospital.
10		He uh admitted, uh:: um, to ICU on third of November for
11		embolization and (clotting)
12		So, then, this is done on third of uh:: November.
13		So, she came intubated ..
14		Case of rupture in, um, aneurism, right posterior
15		(communicated) arteries hemorrhage, intraventricular hemorrhage,
16		acute hydrocephalus .
17		She is uh post EVD inserted on 28 of- [
18	IN-N	So she came with EVD?
19	Nurse	Yeah. Inserted- this is on 28 of October from other hospital
20		So, she came with uh:: right subclavian CV line,
21		right radial arterial line Folly catheter all was changed
22		at here in our hospital.
23	IN-N	She came, um, ventilated, also?
24	Nurse	Ventilated already, yeah
25	IN-N	And then they extubate?

26	Nurse	Yeah. They managed to extubate this patient like uh five days uh:: back
27		No, more than five days , And then, um, she is post
28		embolization and (clotting) done on third of November [
29	IN-N	November
30	Nurse	Yes, here in our hospital. With past medical history,
31		the um hypertension, chronic liver disease, HCV positive.
32		They did for her MRI for this right posterior communicated artery
33		aneurism,
34		and then after six hour of admission here to our ICU,
35		patient deteriorated because she came with JCS fif [
36	IN-N	fifteen?
37	Nurse	Fifteen. And then deteriorated,
38		so JCS uh:: came thirteenth,
39		and then brought it to OR for urgent EVD uh:: insertion
40	IN-N	okay
41	Nurse	So::o, GCS (1.0) by the time it was ten to 11,
42		but currently it's 15 over 15 now
43	IN-N	She dropped the GCS that's why
44	Nurse	They .. yeah
45	IN-N	I think they just changed the EVD the EVD drain
46	Nurse	umm .That's it. Okay. And the::n flow sheet for today.
47		uh Blood pressure, uh they want acceptable blood pressure
48		from her from 100-
49		they want to keep systolic blood pressure from 130 to 150
50		So, it was maintained up to like 9:30.
51		Blood pressure start to elevate up, so Doctor was informed,
52		and then he order to give the hydralazine 2.5
53		So, after that's come down. And then, again, up at un uh 12, uh in the
54		afternoon, it was . the systolic blood pressure was 177.
55		So, Dr. <NAME> ordered to start (lapitoral) infusion for her,
56		so we start that 0.2
57	IN-N	0.1

58	Nurse	Milligram per minutes. [Crosstalk]
59		Then he want to titrate it up, BUT it was only for two::o hours,
60		and then we ordered the <inaudible> because [crosstalk]
61	IN-N	We are titrating [crosstalk] systolic
62	Nurse	According to the systolic because they want to maintain it from 150 to-
63	IN-N	One hundred thirty
64	Nurse	From 130 to 150. Okay [crosstalk]
65	IN-N	For the systolic blood pressure.
66	Nurse	Yes, systolic blood pressure.
67		And then NOW, uh they want to, uh,
68		to follow only the non-invasive blood pressure. Okay?
69	IN-N	She had arterial line?
70	Nurse	She has, yes. There is an arterial line.
71		And the <inaudible> for the whole shift, sinus rhythm,
72		she is on room air since like three days back, room air.
73		Saturation is fine. Blood sugar is maintained
74		She is on sliding scale every six hours.
75		She go to, uh, vent <inaudible> the referral on the right hand,
76		on the right arm [
77	IN-N	No central line?
78	Nurse	Gauge 20, and then gauge 22.
79		There is no central line. Uh she is on, uh::, forty care feeding.
80		This is 40 per hour. She is on maximum already. Urine is fine.
81		Only here it's 200, 200 after we give hydralazine,
82		and the he was informed -
83		about that. [background noise] So, after that, she is- [
84	IN-N	They did not, uh
85	Nurse	No. Because [crosstalk]
86	IN-N	They did not order the urine nothing?
87	Nurse	Nothing. Because only for this two hours
88		after the stopped uh because we give her hydralazine, I think.
89		Uh:::h, um feeding, she is tolerating fine

90		There is no . skin pressure areas is intact. [Phone ringing]
91		There is no pressure also. She is on pneumatic compression
92		And then uh::, she is with left radial arterial line. It's in situ CGS
93		It's ranging now from 14 to 15, sometimes she is very drowsy and sleepy
94	IN-N	Confused?
95	Nurse	But, yeah. Yeah. But, you know to talk to her loudly
96		so she can communicate with you
97	IN-N	She can talk already? [Crosstalk] Because before only
98	Nurse	No, she can talk alr-. in the morning,
99		She . she is requesting to talk to her daughter,
100		actually, but uh:: on the:: afternoon, all of them, they came,
101		and then she's communicating with them
102		She recognize is then her daughters.
103		So, (pupil) two with reacting to the light. Uh::
104		she can move the upper arm more stronger than the left arm.
105		Both legs with uh:: severe weakness.
106		Seen today by physiotherapy. She did for her only uh
107		passive exercise on the bed
108	IN-N	She is not for transfer? [background noise]
109	Nurse	No, she is not. Uh, seen today by Dr. <Name>
110		the neurosurgeon.
111		According to him, he wants to give her <inaudible> on Sunday
112	IN-N	Sunday?
113	Nurse	Sunday
114	IN-N	So, for neuro observation?
115	Nurse	For neuro observation, and then to also stabilize the blood pressure,
116		because always on higher side. Uh- [
117	IN-N	So, they still have monitoring the CPB?
118	Nurse	CBB and ICB hourly, yes, still.
119		And then they want to keep the:::e
120		EVD let 10 centimeter above the (aditry mitris)

121		Let's go to medication sheet.(2.0) Okay.
122		She is on Lactulose, okay?
123	IN-N	Fifty ml?
124	Nurse	Fifty ml three times a day. It's given already.
125		Acetaminophen BRN, uh, for fever, but she doesn't require with me
126		<inaudible> 2 gram.
127		This is, uh:: yeah. <inaudible> two gram q 8. Zue R
128		20 to 100.nepodumin 60 mg. Uh, this is every 4 hour,
129		and then there is holding barometer.
130		They want to hold it. If uh:: blood pressure more than-
131		less than 120 over 80. Okay?
132		[visit end announcement- background noise]
133	IN-N	So umm, you did umm did not- umm 1800 given?
134	Nurse	Yeah. Given. 1800 given already. Uh, (2.0)
135		vancomycin, uh, it is every 8 hour, okay?
136		And then, they want, uh::, level it was due at 1400,
137		so because the order is late, so- [
138	IN-N	So, how much then?
139	Nurse	It was 18. Uh:: It was 16.8, and then he want to give, so we give already,
140		and then no need to send the level unless ordered by clinical . [crosstalk]
141	IN-N	It's not every third dose? So, just waiting for the order pharmacy
142	Nurse	For the order from the pharmacy, yes. [Crosstalk]
143		According to <Name> today, don't do it until we request it
144	IN-N	okay
145	Nurse	Potassium chloride, this is was 20 mg in 50
146		Because potassium in the morning [phone ringing] was 3.7.
147		So::o, patient doesn't have central line,
148		so I asked Dr. <Name> to change the order
149		He didn't change it.
150		After that, I cal- I want to confirm with Dr. < NAME>
151		He said 3.7 no need to replace it, so he's fine with it
152	IN-N	This was given

153	Nurse	So we [crosstalk]
154	IN-N	Should give this one [crosstalk]
155	Nurse	even,, I ask him if he want to give DLX
156	IN-N	Yeah, <inaudible>
157	Nurse	He said no need. 3.7 still okay.
158		And then, magnesium, it was 0.85,
159		SO he want to replace with 2.0 gram magnesium in 100 ml.
160		Replaced already.
161	IN-N	Okay
162	Nurse	Umm she is on insulin, sliding scale, a high dose sliding scale.
163		This is every four hours, given.
164		It's due at 2100. [inaudible] uh this is 5.0 mg oral.
165	IN-N	Discontinued
166	Nurse	Actually:::y, they changed the order from uh:: 5.0 to 10 mg
167		So he supposed to order 10 mg, but this one it was received by resident,
168		okay, Dr. <Name> And then, I just remind Dr. <Name> to reorder it,
169		so he will order 10 because they increased the dose to:: [
170	IN-N	did not yet order it, yeah?
171	Nurse	But he didn't yet order it. I give it [crosstalk]
172		And then she was on (celpetemol), which received
173		already after the round Okay? (2.0)
174		For the lab works- (2.0) lab works, (2.0) this is 16.9 [crosstalk]
175		Magnesium 0.85 [crosstalk] replaced already, yeah.
176		And then, this is uh <inaudible> was send in the morning lab, 53.80.
177		Alkaline was (80), sodium 132. Potassium 3.7. Uh::
178		No need to replace this one, and then Phosphate 0.80 uh:: [
179	IN-N	No replacement, huh?
180	Nurse	Uh:: no replacement [crosstalk] NO, this one
181	IN-N	okay
182	Nurse	Okay? This is 0.80, so-

183	IN-N	WBC?
184	Nurse	yeah
185	IN-N	10.1
186	Nurse	And then WBC (2.1) hemoglobin 10.4, platelet 431, INR 1.1.
187		That's it (1.0)
188	IN-N	INR 1.1? PT? PTT?
189	Nurse	PTT.. is 25 [a nurse asking them a question]
190	IN-N	<inaudible> is morning [responding to the other nurse's question]
191	Nurse	morning [responding to the other nurse's question]
192	IN-N	And then (1.0) we'll go to reminders.
193		Any reminders?
194	Nurse	YES, okay. Uh:: this is- it was by MRB she wants to do the chest x-ray,
195		[crosstalk] only prn, but this is new
196	IN-N	Prn, so not everyday
197	Nurse	But they are doing every day since the patient is on NG tube feeding
198		[crosstalk]
199		They are doing every day, actually.
200		And then uh:: this is, uh,- [
201	IN-N	Still to do serum electrolytes?
202	Nurse	No, no need for this one, but we cannot edit it.
203		We need to erase everything
204		So, systolic blood pressure still they want it from 130 to 150,
205		and then they are doing alternative, uh- [
206	IN-N	CSF?
207	Nurse	CSF culture. Latest was on eight of November,
208		so it's supposed to be to be done today,
209		but nobody come to do it.
210		So, according to <Name> who endorsed to me sometime they are
211		doing as needed only, okay? [Crosstalk]
212		But there is no fever, and there is no positive culture for CSF uh--
213		[crosstalk] so far. Yeah. All negative.
214		there is:::s they want to avoid nasopharyngeal suctioning

215		because they want to avoid the strider and- [
216	IN-N	So, no more strider?
217	Nurse	No more. No more. So far, she is fine. Umm:: [
218	IN-N	CPT?
219	Nurse	No more for this one because she is doing fi::nne.
220		Uh, to keep EVD 10cm- [
221	IN-N	Still <inaudible> therapy. EBB, it's at 10 meters
222	Nurse	<inaudible> alternative CCF, um::
223	IN-N	So, no CT brain for uh [crosstalk]
224	Nurse	Uh:: according to Dr. <Name> today, the MRB after he see the patient,
225		he said he might brought her for-
226		he might bring her to CT brain on Sunday.
227	IN-N	Sunday?
228	Nurse	After that, they will decide .
229		And then, so, they will keep her over the weekend.
230		And then:::n, (1.0) that's it. That's it [
231	IN-N	Okay. So, she was fine [crosstalk] day shift?
232	Nurse	Yeah, she's fine, communicating
233	IN-N	That's good
234	Nurse	Yeah. Uh:: she's requesting for sips of water,
235		according to Dr. <Name>, if she can swallow,
236		and there's no cough you can give [crosstalk]
237		So, I'm giving like every hour like 10 ml,
238		and then she's tolerating so far. (1.0) Okay
239	INnurse	Okay
240	Nurse	That's it
241	INnurse	That's it
242	Nurse	ANYTHING?
243	INnurse	Nothing left

NURSING HANDOFF SAMPLE 2: NGH-ONCOLOGY-PALLIATIVE CARE

(54) (0.27.30 – 0.31.17) **Nurse: Male – Filipino** **IN-Nurse: Female – Filipino** **IN-Nurse2: Female - Saudi**		
1	Nurse	15-1, <Patient's Name>, <File Number> ,
2		30 years old. Source of admission, came from ER for supportive care
3		This is uh he is no code ha?
4		uh history, Past history,
5		he had Dysphagia for four months and weight loss
6		uh Esophageal CA with mets to liver and renal
7		so, actually, when I received him his <inaudible> status
8		was not completed yesterday
9		It was signed but I asked Dr. <Name>,
10		now it's completed already
11		So, he's no code
12		Pain management for him, Hydromorphone 1 mg every 6 hours,
13		subcath. Hydration also, normal saline, initially it was 120,
14		now it's 85 mils per hour
15	IN-N	<inaudible>
16	Nurse	Yes, (bury) on 35
17		According to ER he was investigated in Fakeeh Hospital,
18		upper GI scope done, esophageal lesion and biopsy with adenocarcinoma
19		Today, his potassium is 5.5
20	IN-N2	He's not admitted there in Fakeeh?

21	Nurse	This is the investigation only
22		Uh and uh His potassium today, 5.5. I I::I informed Dr. <Name>,
23		I gave him calcium gluconate IV plus sodium polystyrene
24		I gave him ha BID. (Cher Fast)
25		this patient, with lower limb edema. (Cher Fast) What else? uh (1.0)
26		Symptom control and uh as endorsed by ER - because
27		at that time he was still full code that time;
28		thoracic surgery for surgical opinion
29		but I don't think they are uh they are particular with this team,
30		because now he's still on uh subcath only
31		plus, to rule out if he needs surgical intervention
32		Staging on workup after correcting kidney function (1.0)
33		and uh ultrasound abdomen to rule out obstructive jaundice because [
34	IN-N	<inaudible>
35	Nurse	No no no, this is the plan only
36		This is the endorsement from ER to me,
37		but uh you know, the plan is not uh permanent; they are changing.
38		Whenever uh they check the patient through the blood works,
39		then they will decide under Dr. <Name> huh?
40	IN-N2	<inaudible> skin infect?
41	Nurse	Skin - uh Yeah, with uh edema from the lower limb uh
42		Just check the:: the rectal side because I cannot
43		understand if it's uh abscess or uh skin breakdown
44		He said /*shwayah*/ [i.e., 'little']- when I ask him, "Is there -"
45		[Background noise- Patient's relative interference]
46		[Long Pause, +1 minute]
47	Nurse	okay, Kindly check because when I received him,
48		he came from wheelchair <inaudible> he was sitting. He like to sit.
49		He didn't like to lie flat. Okay?
50		In the:: sitter's uh: you know, the couch for the sitter,
51		he was there.
52		But he she can go to the bathroom together with the - okay?

53		and uh he was this one, 15-2
54	IN-N2	that's his brother [referring to the patient's relative]
55	Nurse	15-2 or 15-1?
56	IN-N2	15-1
57	Nurse	15-1. uh:: regular diet, I think palliative supportive care,
58		this patient, and pain management

NURSING HANDOFF SAMPLE 3: KFGH-UROLOGY

(78) (00.00.00 - 00.57.01) Nurse: Female – Saudi		
1	Nurse	This is uh <File Number>, <Patient's Name>, under Dr. <Name>
2		TB patient uh admission in 1 uh 4 uh 30
3		Patient (2.0) 39 years
4		Admission in 14 uh 38
5		Patient in uh no allergy
6		[sigh] (1.0) Low risk for fall
7		Uh:: a (quitty) uh C2
8		Umm this is the police case also
9		For today no uh uh seen by group (2.0)
10		CT abdominal done
11		Uh patient vitally stable, no complaine umm
12		IV fluid going for the patient
13		Just
14		[end of handoff]

NURSING HANDOFF SAMPLE 4: KFGH-GENERAL-ADULT

(60) (00.00.00 -00.01.23) Record# 161204_0045 Nurse: Female – Indian IN-Nurse: Female - Indian		
1	Nurse	<inaudible> under Dr. <Name> (test) infection uh of unconta::,
2		uncontrolled<inaudible>
3		And uncontrolled epilepsy <inaudible>
4		20, two twelve admission <inaudible>
5		[background noise- nurses chatting] (6.0)
6		stat, sputum umm culture, (1.0)
7		but sputum uh:: was not taken
8		Patient have no food umm (2.0)
9	IN-N	So why they ask for a sputum culture if no sputum? (2.0)
10		Complains of cough? anything? (2.0)
11		Why they want sputum culture?
12	Nurse	They talked to the doctor, patient not cough uh well <inaudible>
13		Sodium 3.8, sorry, sodium <inaudible> potassium 3.82.
14		[crosstalk] Today's four? huh Four of three. Okay.
15	IN-N	Five of three aha [inaudible]
16	Nurse	Doctor <inaudible: heavy accent>
17		<inaudible> normal also
18		[End of handoff]

Appendix E: Participants' Background questionnaires

Instructions: Please complete the survey by filling in the blank or checking the appropriate boxes for each of the following questions.

This survey is confidential. All results will be kept confidential.		
1	What is your age?	_____
2	What is your gender?	□ Female □ Male
3	What is your nationality?	_____
4	What is your first language?	_____
5	What other languages do you speak? How often do you use it and with whom?	(1)_____ _____ (2)_____ _____ (3)_____
6	What is your competency level in Arabic? If you use Arabic, when and with whom do you use it?	□ None □ Poor _____ □ Intermediate _____

		□ Advanced _____
7	How long have you been working as a nurse?	_____
8	How long have you been working as a nurse in Saudi Arabia? What region in Saudi Arabia?	_____
9	How long have you been working as a nurse in this hospital?	_____

**** Thank you for your participation****

Appendix F: Glossary of Transcription Conventions

Convention	Description
.	A period indicates a brief pause accompanied by an utterance final (falling intonation contour; not used in a syntactic sense to indicate complete sentences.
…	Ellipses indicate a pause 2-3 seconds.
::	Colons indicate prolongation of the immediately prior sound. The longer the colon row, the longer the prolongation.
-	A dash indicates a sharp cut-off
(1.0)	A pause in number of seconds.
[	A Left bracket indicates the point of overlap onset.
]	A Right bracket indicates the point at which two overlapping utterances end.
'word'	Single quote marks enclose instances of reported speech.
< >	Angle brackets indicate contextual information (e.g. <patient's name>) or non-speech events (e.g. <LAUGH>).
WORD	Upper case indicates especially loud sounds relative to the surrounding talk.
↑↓	Arrows indicate shifts into especially high or low pitch.
<inaudible>	Inaudible or unclear text.
[ ]	Square brackets indicate researcher's field notes/observations
( )	Words surrounded by parentheses indicate transcriber's guess.