

THE NEED FOR STANDARDIZATION: INTRAPROFESSIONAL COMMUNICATION
AMONG PHYSICIANS DURING HANDOFFS IN HOSPITAL SETTINGS

BY

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THESIS

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ABSTRACT

Communication in any relationship is not a simple matter. The transference of a message to another person can become more of a problem than a solution.

Communication is often riddled with mistakes and errors. This can become especially problematic when someone's life is on the line. A study involving 28 hospitals reviewed the causes of adverse events and found that communication errors were the leading underlying cause, associated with twice as many deaths as was clinical inadequacy (Wilson, Runciman, Gibberd, Harrison, & Hamilton, 1995). Although there are multiple hospital scenarios where this may be the central issue at hand, one of these situations occurs thousands of times every day in the United States. This specific situation is called a handoff.

As astonishing as the procedure of a handoff is when the intricacy of today's complex patients is considered, this astonishment will intensify when the exact number of daily transfers is taken into account. In 2006, The Joint Commission added handoff communication to their list of National Patient Safety Goals. In academic teaching hospitals, the Accreditation Council on Graduate Medical Education set restrictions intended to reduce the resident's sleep deprivation. Although these time reductions and restrictions may alleviate the negative effects of sleep deprivation on physician health and patient safety, they have also resulted in increased number of handoffs.

Successful information flow during shift change has a vital influence on the provision of healthcare. It is of extreme importance that information is shared correctly during shift changes, such as during a handoff situation. This specific paper reviewed literature concerned with the complexities of handoffs as well as suggests a need for all

medical students to have the same systematic training on what a handoff must consist of in order to be effective. Also, third and fourth year medical students affiliated with an Illinois university medical school completed a handoff and communication survey. The results showed that 74 percent of students felt that poor communication between doctors was a significant problem in the clinical workplace. Seventy-seven percent of student respondents reported that they were not receiving feedback on their handoff communication.

The purpose of this study was to better understand handoff communication and to propose that all medical students have the same standardized training related to handoff communication. The lack of standardization in teaching communication skills during medical school allows the problem to persist. The Accreditation Council for Graduate Medical Education has recognized the importance of communication skills for a patient's care (Reid, Moorthy, & Forshaw, 2005). The Joint Commission has also recognized the importance of handoff communication, as their second goal requires all healthcare providers to "implement a standardized approach to handoff communications including an opportunity to ask and respond to questions," (The Joint Commission, 2006). Communication difficulties cannot be allowed to compromise patient care, especially as the health sector continually grows.

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Whatever you do, work at it with all your heart, as working for the Lord, not for men.

Colossians 3:23

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CHAPTER 1

INTRODUCTION

1.1 The Importance of the Handoff

When trying to grasp a visual image of a handoff situation, one does not only need to think in medical terms or healthcare settings. Instead, imagine a car race. At some point during the race, every car must stop to seek help from their pit crew. In fact, this happens multiple times during the race. The pit crew pays attention to the fueling of the car, the mechanical issues that arise in the car, they change the tires, and they speak with the driver as he comes to a skidding stop in the midst of his work. The pit crew must work seamlessly, effectively, and quickly. Not only does the possible victory depend on it, but the driver's life depends on it as well. Racing car pit crews often demonstrate excellent 'handoffs.'

In a healthcare setting, physicians must handover, or handoff, their patient(s) to another doctor who will take over for the time being. Handoffs involve the transfer of duties and obligations from one person to another, thus transferring the care of a life to another (Solet, Norvell, Rutan & Frankel, 2005). When a physician hands off their patient to another doctor, communication between the physicians can be life or death for the patient. If communication goes well and the message is received in the manner intended, this can be life saving for the patient.

Handoffs are defined by The Joint Commission on Accreditation of Healthcare Organizations as the "transfer of information, responsibility, and authority regarding a patient's care from one professional to another," (2005). Doctors often look at the handoff as a transfer of professional responsibility for a patient to another person. In the

review of literature, the text suggests that information and responsibility are two primary factors in a handoff situation (Arora et al., 2009). This may seem simple, but due to aspects of conflict and confusion in communication, the handoff is anything but simple.

In 2003, the Accreditation Council for Graduate Medical Education implemented duty-hour limits for resident education as well as the patient care related to it. Currently, in 2012, residents are limited to 80-hour weeks (Accreditation of Graduate Medical Education, 2006). This was adopted due to widespread concern that residents were jeopardizing patient care due to exhaustion and fatigue in the workplace. In this type of working environment, residents may not be at their full capacity if they are too tired or in need of sleep. The downside to this is that more handoffs occur in healthcare settings. Since there are an increased number of transfers of patient care as a result of the implementation, there is an increased chance for communication errors as well.

In-hospital handoffs are a very typical occurrence. One teaching hospital will have 4,000 handoffs daily for a total of 1.6 million handoffs a year (Vidyarthi, 2006). There are many types of handoffs that occur in hospital situations: handoffs that involve residents, handoffs with language barriers, handoffs with different types of doctors and nurses, handoffs in the emergency room or ambulatory setting, and handoffs which include discharge or releases, to name a few. All handoffs are important and critical to patient health, no matter the specifics of the situation. A system to standardize these handoffs is especially important when realizing the broad scope of handoffs that take place.

The Joint Commission has studied handoff communication through review of pertinent events received from providers nationwide and found that “communication

issues were a root cause of approximately 65 percent of the 2,996 events reported from 1995 to 2004 and close to 70 percent in 2005.” In 2006, The Joint Commission added handoff communication to their list of National Patient Safety Goals (The Joint Commission, 2006). The second goal is to improve effectiveness of communication among caregivers. A handoff situation is a daily occurrence for many physicians, and is a crucial point of care giving for the patient and the doctor. Every medical student, resident, and doctor, as well as many other types of healthcare providers, will be involved in many important handoff situations during their professional career.

1.2 The Importance of Communication

The communication process is a basic yet crucial element of life. Without the transfer and retrieval of messages, whether on an interpersonal or large group scale, information and knowledge cannot be shared. There is a large number of models or definitions of communication which in itself signifies that communication is a vast topic and difficult to explain simply. Some models are out-of-date and are no longer applicable in today’s world. Many communication scholars agree that communication is not only information exchange, but also the construction of meaning. Communication occurs whenever one person, in some way or another, transmits a message of some sort and someone else picks it up and interprets it. Communication involves having a goal in mind.

In healthcare, communication is an occurrence by which information is exchanged between members of a team so that all members are clear as to the patient’s diagnosis, that care that will be delivered, and more. There are many areas of society that benefit from successful, efficient, and clear communication: academic, familial,

relational, cultural, and professional relationships all demand clear communication. Unfortunately, miscommunication, or the failure to clearly send a message, can even lead to death. Ineffective communication among health care providers has been cited as a contributing factor to medical errors (Baker et al., 2005; National Academy Press, 1999). Communicators must be competent to meet goals.

A prominent form of communication in the medical profession is the consultation. A consultation is a “service type provided by a physician whose opinion or advice regarding evaluation and/or management of a specific problem is requested by another physician or appropriate source (National Academy Press, 1999). Physicians frequently contact other physicians for advice or intervention regarding patient care. Whether between patient and nurse, nurse and nurse, physician and nurse, or physician and physician, each interaction offers the challenges associated with any type of decision-making. Communication can be broken down into types of communication, such as formal and informal communication. In formal communication, information is transferred in a predefined outline. In informal communication, senders and receivers of the message(s) would set their own guidelines for communicating. Communication in a professional or life-dependant situation can greatly benefit from a formal, standardized structure.

The hypothesis of this research is that medical students don’t feel that they have sufficient and effective communication training before they enter their clinical years. The purpose of this research is to seek out opinions and observations from medical students as well as to form a research based foundation to suggest standardized methods for handoff communication. Typically, medical science and pathology are of greatest concern in the

first two years of medical school. In this medical school reality, communication training gets left behind and becomes trivial in comparison to scientific knowledge. Largely for this reason, students will feel that they don't have the adequate communication training to assist them in their clinical years.

1.3 Communication in a Healthcare Setting

The concern of clinician communication errors related to patient safety was elaborated on in the trademark report *To Err is Human*, published in 1999. In the report, the Institute of Medicine attributes the deaths of 98,000 hospital patients to medical errors, the associated cost for these errors is \$8 to 29 billion per year (Kohn, Corrigan, & Donaldson, 2000). Since the publication of the report, healthcare regulatory agencies and government policy makers have focused on efforts to prevent errors and to promote clinical quality and patient safety, including improved caregiver collaboration and communication. Ensuring consistency of information flow between health providers is one strategy of preventing adverse events and ensuring patient safety.

The quality of communication between physicians and patients is frequently identified as a critical factor in optimal medical care (Reason, 2000). The Joint Commission report notes that in a safe system, information is not lost, inaccessible, or forgotten in transitions (Joint Commission, 2005). In many instances, it seems second nature that improving the communication also improves the outcome of the situation, no matter the task at hand. Personal interaction and communication leads to improved problem solving and coordination (Delva, Jamieson, & Lemieux, 2008). Through research, it becomes more and more clear that poor communication makes nearly all processes (healthcare or otherwise) more susceptible to letdowns and failure.

Communication problems are one of the most frequent contributing causes of adverse outcomes, occurring in 30 percent of emergency care cases (White et al., 2004). Clinical handover is a fundamental practice in medical settings to transfer medical information across shifts and it is an essential aspect of health care delivery. Shift works relies heavily on effective information transfer to ensure patient safety. The information communicated during shift change influences the delivery of care for the entire shift and the overall quality of healthcare extended to patients (Tang & Carpendale, 2006). A literature survey report on patient safety and handoffs prepared by the Australian Council for Safety and Quality in Health Care in March 2005 described, “ineffective handover can lead to wrong treatment, delays in medical diagnosis, life threatening adverse events, patient complaints, increased health care expenditure, increased hospital length of stay and a range of other effects.”

Given that hospitals are one of the only workplaces in the world to stay open and provide a service 365 days a year, 24 hours a day, there is frequently changeover in care. Changeovers occur with all types of healthcare providers at the hospital, including medical students, residents, surgeons, and physicians. A consequence of a change in providers is the attrition of same-care providers in settings of frequent discontinuity across thousands of hospitals in the United States. The cost of this coordination, including information management and communication, increases. These “costs” refer to direct monetary costs but also to other types of costs, such as time. Not surprisingly, poor communication and coordination are evident in several studies, particularly during numerous other transition times between settings and specialists (Sutcliffe, Lewton, & Rosenthal, 2004).

1.4 Objectives

Effective communication is always the goal but seldom the reality. This is true in all professions, including the medical world of doctors, nurses, and other caretakers. In a hospital setting, communication is often blunt, interrupted, and rushed through due to the nature of the environment that messages take place in. The patient-provider relationship is often the focus of communication learning in medical school, but provider-provider relationship communication takes a backseat of importance. When medical students begin rotations and clinical work, they have already had two years of academic learning in a classroom. This information is not pure science, but a mixture of science and humanities. In other words, United States medical students are now learning more about the healthcare world they will enter into as a doctor from a social perspective. Proper communication is a topic that is part of this learning. Once the medical students enter hospital rotations, they have rarely, if at all, learned anything about how to properly handoff a patient to another doctor. The students will learn this from on-the-job observations of doctors who are communicating a message that may be fraught with errors in the way it is sent.

Students need to learn a standardized approach to this important task of handoffs. If students learn the same method, nationwide, and are trained and evaluated in how to turnover their patients as well as receive new patients, the outcome will be beneficial for all involved. Students, doctors, healthcare providers, and ultimately patients will benefit from an exchange that is learned, tested, and effective in the way that it handles their care. The purpose of this study is to strongly advocate and recommend a standardized

handoff, in the way that the students and doctors learn how to communicate this important message in their daily work routines. Researchers can further propose learning materials and assessments that will be used at all medical schools across the country.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Healthcare communication research has been a growing field for many years. This topic has been one of concern, and of possibilities, for researchers who have studied and experimented in the field of medical communication. Fortunately, literature is also growing in research related to handoff communication. Many experts, academics, and researchers are gaining interest in this area for the same reasons that research grows in any field, to look for ways to improve. An array of information and study experimentation has provided a diverse sample of literature to study for this research.

Communication and interpersonal skills are essential components of delivering good quality healthcare. Communication is identified as one of the essential skills medical students must acquire in order to make progress through their education and training to become qualified (Accreditation Council for Graduate Medical Education, 2006). When covering the broad topic of communication in healthcare, it is best to break up the subject area into separate divisions. Literature concerning the meaning of good communication in the area of healthcare was reviewed first for this research. When this study reviewed communication specific to the medical field, there was a large amount of research done on the issue of miscommunication, or communication mishaps, in the workplace. Following healthcare communication and mishaps, this research then focused on handoff complexities and handoff communication. Lastly, handoff communication

models, as well as previous experimental studies concerning handoffs, are discussed. The review of literature is intended to examine the purpose of handoff communication with a focus on medical student standardization of communication.

2.2 The Meaning of Good Communication in Provider Perspective Healthcare

The ability to communicate ideas effectively is increasingly recognized as critical to the success of the healthcare system (Reid, Morthy, & Forshaw, 2005). Effective communication is required not only for successful interactions between individuals and their health care providers, but also between health care providers themselves. Literature frequently explores the unique characteristics of communication between health care professionals. Many parts of the health care system require effective knowledge transfer between health care providers. Effective transfer of knowledge needs to occur between providers themselves in order to enable best outcomes for consumers, or patients.

In today's society, patients may be challenged to communicate with a large number of health care professionals depending on the issue at hand, and they will probably have to make difficult treatment decisions at some point in healthcare. These issues are compounded by shorter lengths of stay and increasing incidences of chronic disease (or multiple disorders) requiring patients to manage their own care at home, often with minimal support from health care providers (Solet et al., 2009). The need for health care providers to effectively communicate between each other has increasing and urgent importance.

Intraprofessional communication is critical to enabling the effectiveness of the health care system, as the costs associated with ineffective communication between health

care professionals are very high (Priest, Roberts, & Rhodes, 2005). For example, ineffective communication between providers has been linked to issues of patient safety, medical error, low patient satisfaction, and complaints by patients and caregivers (Varpio, Hall, Lingard, & Schryer, 2008). Skills that enable communication between health care professionals traditionally are not taught to students. Yet there is evidence that this is changing through the growth of interprofessional education efforts and the identification of interprofessional communication as a critical core competency needing to be addressed in health studies curricula (The Joint Commission, 2006).

Interprofessional education occurs when learners from two or more professions learn about, from, and with each other, to enable effective collaboration and improve health outcomes (Varpio et al., 2008). This type of education is crucial to high-quality working relationships in the healthcare system.

When it comes to communication in a healthcare setting, patients notice different things than physicians (Epstein, 2006). They notice when their physicians seem concerned, involved, courteous, and caring. The patient notices when the physician's tone of voice seems confident and when the physician answers their questions (Epstein, 2006). One of the most widely quoted studies on medical communication was an observational study of residents interacting with their primary care patients as the physicians interrupted them (Beckman, 1984). Naturally, the researchers found that the physicians, whom were actually trying to command authority, interrupted the patients quite frequently. Thus, patients were often upset by the care they received from their doctors before the treatment to their health had ever begun (Epstein, 2006).

Similar to the negative attitudes formed from disrespect in patient-provider care,

healthcare professionals also don't want to be in a communication situation where they are interrupted and feel disrespected. Despite communication behaviors and settings, humans value relationships with others on the basis of respect and trust (Frederickson & Bull, 1994). Although it sounds obvious, negative behaviors negatively impact the quality of the communication in an interaction. Health systems in particular, have a powerful influence on communication (as well as perception of communication) with patients as well as with each other professionally. This may be widely known and understood, but when it comes to the significance of the handoff for patient wellbeing, this knowledge and understanding needs to be acted upon in the form of standardization of care. A favorable medical interview is essential to creating a good interpersonal relationship, information exchange, and optimal medical decision-making (Beck, Daughtridge, & Sloane, 2001).

One of the purposes of communication research is to find ways to improve provider-patient communication as well as provider-provider communication. This research in turn, assists physicians with the understanding of effective communications. Simple choices in words, information depth, speech patterns, body posture, and facial expression can greatly affect the quality of one-to-one communication between the patient and physician (Travaline, Ruchinskas, & D'Alonzo, 2005). There is no reason that a similar outlook wouldn't have the same impact on a handoff situation between two healthcare providers.

2.3 Health Communication Mishaps Related to Handoffs

In today's healthcare complexity, patient care is delivered by multiple physicians with varying degrees of knowledge of the patient (Arora et al, 2006). Yet, few trainees

learn the potential risks of these transitions and the strategies to improve patient care during handoffs (Baker, Gustafson, Beaubie, Salas, & Barach, 2005). Compiling complete information about a patient and communicating that information in a manner that is clearly understood by the recipient are two crucial steps in any handoff. The health community can look to high-risk industries for comparison in handoff-type communication. In fact, the healthcare industry is a decade behind other high-risk industries (aviation, NASA, military, firefighting) in attention to basic safety during communication (National Academy Press, 1999). It is imperative to pay attention to communication in these specific industries because of their similar nature to the healthcare setting (circumstantial, adaptation, a quickly changing knowledge base, and highly trained professionals in difficult or life-threatening situations). In many high-risk contexts such as a relay race or handling air traffic, handoff skills are practiced repetitively to optimize precision and anticipate errors (Solet et al., 2005).

In the context of healthcare, unnecessary services take time and money, and when diagnostic tests need to be repeated or simple communication between doctors is at fault, patients lose trust in the system and have diminished contentment with their health care providers. In turn, medical providers become frustrated and uncomfortable. Additionally, ineffective communication skills between physicians are shown to negatively impact physician job satisfaction and increase burnout, distress, and psychiatric problems (Lasalvia, 2011). Patient handover is a process widely recognized as opportunities fraught with miscommunication. Poor communication during a handoff has been shown to be a problem in 14 to 24 percent of inpatient consultations and can lead to increased costs in the healthcare system as well as patient death (Ranji & Shojania,

2008).

Inaccurate medical documentation and unrecorded clinical data are often cited as major problems during important transition points, which could result in uncertainty during medical decision-making. This uncertainty can then lead to additional work, such as additional or repeat tests, and spending more time searching/obtaining information from other healthcare providers or the patient in an effort to compensate for this uncertainty (Solet et al., 2005). In some cases, this uncertainty can result in patient harm such as a delay in therapy, incorrect therapy, etc. At this point in care of the patient, physicians have work or re-work to counteract ineffective communication but also must worry about the potential for harm that results from these communication collapses.

The child's game of telephone can be a good illustration of the handoff process. When the first person involved in the game whispers words to another, who in turn whispers it to the next person and so on, the message is often poorly communicated as it goes down the line of people. The results of this game may be humorous, but in medicine, the results are simply disastrous and can end in unnecessary care, or worse, death. In the absence of a standardized method of handoffs, great variability is a common occurrence, which leads to variations in the outcomes.

2.4 Recognition of Vitality of Handoff Communication in Healthcare

It is increasingly recognized that despite the long-standing routine practice of the handoff, not enough attention and research has been directed at improving communication to promote patient safety (Kohn, Corrigan, & Donaldson, 2000). The dangers that occur to patient safety because of poor handoffs have been highlighted by

numerous organizations inside and outside the United States. Research is consistently expanding on this specific topic because it concerns both an inadequacy in our healthcare system as well as a great opportunity for growth and improvement in our provider's care. A critical moment of care occurs when a physician reports on a patient to another physician.

National studies of medical safety have found that health care teams have communication problems linked to patient safety, medical errors, and other adverse events (Baker, Gustafson, Beaubien, Salas, & Barach, 2005; Kohn, Corrigan & Donaldson, 2000). The Agency for Healthcare Research and Quality conducted a hospital safety survey in which 160,176 hospital staff responded; 49 percent said important patient care information is often lost during shift changes while 42 percent indicated that problems often occur in the exchange of information across hospital units (Dunn & Murphy, 2008). These numbers only strengthen the reasoning for standardization of communication used during handoffs.

In response to growing concerns surrounding lack of communication among health care workers and to emphasize the importance of clear, accurate, and timely exchange of patient information, The Joint Commission established the 2006 National Patient Safety Goal requiring healthcare organizations to implement a standardized approach to handoff communications. Best practices are often highlighted by the Joint Commission on Accreditation of Healthcare Organizations, which also made handoffs a focus of the National Patient Safety Goals that went into effect (Dracup & Morris, 2008). Written as a requirement of Goal 2 is to, "Improve the Effectiveness of Communication Among Caregivers," and the language of the goal requires all healthcare providers to

"implement a standardized approach to handoff communications including an opportunity to ask and respond to questions," (The Joint Commission, 2006). The Joint Commission even lists specific recommendations for the handoff including the exchange of accurate information, no interruptions, a process for verification, an opportunity to review relevant data, and interactive communication between communicators. The Joint Commission then states, "it is critical we adopt practices used religiously in high-risk settings," (The Joint Commission, 2006). The Accreditation Council for Graduate Medical Education (ACGME) requires that residency-training programs evaluate resident attainment of six competencies including Interpersonal and Communication Skills, or ICS (Leach, 2001). ACGME suggests that these evaluation processes should be 'dependable' which is a term that involves some degree of psychometric authority and validity.

A growing body of research suggests that the quality of health care can be improved when health professionals collaborate effectively across professional boundaries (Mason et al., 2001; Sidhom & Poulsen, 2006; Zwarenstein & Reeves, 2002). Handoffs are vulnerable moments for many reasons. There could be confusion over patient care, difference of opinions between physicians, physical noise, interruptions of other staff or patients, biases, and a limited window of time for interaction or discussion. These elements place stress on handoffs that occur between doctors. With the growth of hospital medicine and the increased acuity of inpatients, improving handoffs becomes an important part of ensuring patient safety (Arora et al., 2009).

2.5 Training Medical Students on Handoffs

Understandably, the public might assume that handoffs are an intense focus of our medical students' education given their frequency and importance. But, they would be assuming this incorrectly. Most medical educators have paid little or relatively no attention to communication in handoffs in particular. In a important research study and survey of 125 US medical schools, only eight percent taught students how to hand patients off in a formal didactic session while 86 percent did not teach this at all (Streitenberger, 2006). This example of an educational handoff, or lack thereof, frequently occurs at medical schools across the country.

Medical students frequently learn how to communicate in handoffs when they are observing and watching their clinical preceptors during rotations or residency programs. Medical students watch the attending, as well as other doctors, make their way through the various handoffs on a daily basis, while imitating these behaviors during their own professional handoffs in the future. Subsequently, the doctors-in-training have seen many a handoff go wrong with miscommunication errors and a poorly executed transfer of information. They may have even seen physicians jot down notes for patient care on a scrap of paper or index card before leaving work, assuming that this is an acceptable way to handoff a patient (Arora, Lovinger & Meltzer, 2005).

The importance of communication development programs, like a discussion based clinical workshop, is vital to the efficiency of the handoff. Instituting a 'handoff clinic' with simulation-based training to improve handoffs should be mandated nationwide in medical classrooms. Education concerning instruction on how to refer a patient appropriately, alongside how to handoff a patient, with clear and distinct markers, will

enable the doctors to work better together. The lack of education and standardization in teaching communication skills during medical training allows the communication problem to persist in handoffs. Hospitals do not have a systematic procedure that is used nationwide for the consultation process. This problem can be traced back to medical school training, where communication during consultations is not a focus of the curricula. Without a standard model, medical schools must take on the task of teaching handoffs themselves, or letting students learn by observation once they begin clinical training. With limited education, students and residents are expected to learn on the job, thus creating a wide variety in effective communicative skills.

The result of the lack of guidance and standardization leads to patient morbidity and mortality. Thousands of deaths in the United States are due to medical errors and poor communication (National Academy Press, 1999). Inadequate consultations increase physician stress and burnout, negatively influence patient care and satisfaction, and financially burden our healthcare system (Shilling, Jenkins & Fallowfield, 2003). Despite the consequences, little has been done to eradicate the problems and prevent medical errors. Devoting more time to educating consulting physicians on effective communication and consultation techniques could lead to less overcrowding, decreased response times, and improved physician communication (Rosen, 1986).

Although new technology can help in this specific area, individual healthcare providers will still need to assume responsibility for ensuring that information is accurate, updated, and received. Therefore, medical students must learn strategies to improve coordination, thereby minimizing any information losses that occur during handoffs. Ensuring that medical students master handoff skills will require standardized instruction

materials, provided by their medical schools. Eventually, all physicians will be held accountable because of regulated material learned in previous medical schooling.

Physicians can also hold each other accountable with this information.

Recommendations for handoffs are frequently designed to be consistent with literature reviews, which supports the use of a verbal handoff supplemented with written documentation or a technological solution in a structured format (Arora et al, 2009). The overarching recommendation in hospital groups or programs refers to the need for a formally recognized handoff plan at a shift change.

2.6 Previous Studies in Healthcare Communication Training

Fortunately, training sessions that have been conducted with medical students and handoff training are successful. Many of these are good examples of different ways in which communication has been studied in healthcare. Systematic guidelines and formal communication training demonstrate the success of teaching communication skills to prevent problems that occur. Studies done in the United Kingdom, as well as in states such as Oregon and Missouri (focused on over 250 physicians) all demonstrate the success of teaching communication skills (Fallowfield, Jenkins, Farewell, Duffy, & Eves, 2002; Levinson, Roter, 1993). The researchers found that once physicians went through a communication training course, key outcomes such as focused questions and expressions of empathy or concern were highly improved (Fallowfield et al., 2002; Levinson & Roter, 1993). In a study done at the Indiana University School of Medicine, the authors concluded that irrespective of local context, face-to-face communication is the best way to ensure effective handoffs of hospitalized patients and the process must be standardized

through teaching handoffs to students (Solet et al., 2005). This study is strong support for other studies in the importance of effective handoff communication.

In 2000, the Institute of Medicine reported that between 44,000 and 98,000 die every year in U.S. hospitals because of medical errors. The studies that the Institute of Medicine depended on for estimates were based on physicians' reviews of medical records and their judgment of adverse events in their hospitals (Sutcliffe et al., 2004). Often these errors come from a lack of training. Sutcliffe et al. examines how communication failures contributed to medical mishaps in a teaching hospital finding that faulty communication is an 'insidious' contributor to medical disasters (2004). Similarly to the aforementioned study that the Institute of Medicine carried out, a retrospective Australian study showed that communication problems were actually the most common cause of death and disability, all of which were preventable (Kohn, Corrigan, & Donaldson, 2000).

In 2002, Michael Leonard, M.D., physician leader for patient safety at Kaiser Permanente in Denver introduced a model of structured communication called SBAR- Situation, Background, Assessment, and Recommendation (Haig, Sutton, & Whittington, 2006). With this model, a caregiver would state the situation that is occurring, background of the circumstances leading up to the situation, assessment of what the problem may be, and a recommendation for correction of problem (Hohenhaus & Powell, 2006). Many medical centers implemented the use of this communication model due to the need of a standardized approach to handoff communication among caregivers. The use of methods such as SBAR can highly improve patient safety by providing clear,

accurate feedback of information between doctors (Haig et al., 2006). Some experts feel this method does not delve deeply enough into the level of information needed in a handoff, though a good model, many think it is incomplete (Runy, 2008). Overall, opinions differ greatly on the effectiveness and overall ease of use in relation to the SBAR model.

Another important communication method that is tedious and lengthier than SBAR but could be better suited for the complex situations many handoffs are a part of, is called I PASS the BATON. This acronym encompasses an introduction of oneself, the patient, an assessment, situation, safety concerns of the patient, background, actions, timing, ownership of the patient, and what will happen next (Runy, 2008). This technique is recommended by the Department of Defense's Patient Safety Program to provide an optimal structure to improve care in a handoff setting. This model is not as common in research as SBAR is. The goals of I PASS the BATON are altruistic and impressive, but often do not get carried out in a busy hospital environment, and details of the model aren't enforced.

A model currently under research and development is called the 5C's of a Consultation (Kessler, Ktka, & Badillo, 2011). This model focuses on the five C's which include contact, communicate, core question, collaborate, and closing the loop (see Appendix B). The model also takes into account the relationships between the two doctors as well as a 'relapse and recycle' aspect to each of the steps of the model. This aspect of the model is for the purpose(s) of using feedback in communication to make sure all participating individuals are in constant understanding of one another (see

Appendix B). The model also lists what might be a problem within each step (Nokes, Lavoie, Roney, & Davis, 2011). This model has been previously tested with 43 residents who were randomized into two groups stratified by post-graduate year level using a computer-generated random number list (Kessler et al., 2011). Residents trained with the 5 C's model communicated significantly better, regardless of assessment method, postgraduate year, and clinical case (Kessler et al, 2011). According to Kessler's study, the intervention group had significantly higher checklist scores (10.7 vs. 7.0) than the untrained residents during consultation phone calls. Raters had assessed the recorded phone calls using global rating scales and found that the trained residents scored, on average, 14 percent higher than the untrained residents (See Appendix C) (Kessler et al, 2011).

Models have been developed to assist and assess the communication process of a handoff. This is due to filling an apparent need for communication standardization. None of the models mentioned have been implemented nationally, and thus, lack of nationwide standardization continues to exist and perpetuate the handoff communication dilemma. A model should be all encompassing of the complexity of a handoff, but more importantly, it should be implemented and used from the beginning stages of medical education. In other words, students should be able to cite, discuss, and agree on what needs to occur during a handoff in a consistent manner by the time they are practicing medical care.

2.7 Summary

Although modern medicine seems to go over and beyond in many expectations, the reality is that it is a practice riddled with problems. These problems are vast and diverse, but one challenging area continually causes concern in all aspects of medicine. Often, poor communication turns out to be one of the most common causes of error in medical practice (Frederikson & Bull, 1995). Addressing barriers with an emphasis on standardizing the handoff process will reduce errors for both doctor and patient treatment. Training our medical students and residents is an essential key to this process.

The evidence is clear that effective handoff communication is important to a successful patient transfer. The handoff is a vital part of healthcare that lacks a standardized method used nationwide. It is also clear that the handoff is an aspect of care that cannot be avoided and this needs attention by medical schools. By understanding these shift change situations, we can understand their vitality to patient care (Shilling & Fallowfield, 2003).

Educators can prepare medical students to understand the handoff in a way that will lead to effective communication and thus, the best quality of life possible for the patient. The literature consistently points to a growing concern as well as frequent problems associated within the area of handoff communication. Researchers and scholars also understand the importance of education and communication training for medical students *before* they begin to practice medicine or acquire clinical practice during residency. However, the evidence shows no standardization of healthcare communication which physicians are consistently familiar with across the country. In most medical

schools across the country, there is no formal training even concerning the handoff (Arora et al., 2009). The hope for this study is that all medical students can understand the significance of the handoff and medical educators will then establish and implement a successful handoff method that all medical students learn during their academic training.

CHAPTER 3

METHODOLOGY

3.1 Research Methods

Participants in this study were recruited using email invitations. The email was sent from their specific medical school campus dean. All students were in medical school affiliated with the University of Illinois. This particular medical school spans across multiple campuses within the state of Illinois. The participants are students on three different Illinois campuses including Chicago, Urbana-Champaign, and Rockford. To achieve pertinent information, certain inclusion criteria were imposed. The participants who qualified had to be one of the following: a third year medical student, a fourth year medical student, a resident, or an intern. Deans specifically emailed these classes only. The deans were contacted two months ahead of time by the researcher. They were copied and sent a specified introduction and questionnaire link to include in the email that was sent to their students. In this particular study, only third and fourth year students participated although residents and interns were welcome to participate as well, and thus received the email invitation.

Most medical students don't begin rotations in a hospital setting until third year. This survey qualification ensured that the participants would understand the questionnaire survey and be able to answer questions based on their experiences in rotations and not just assumptions about clinical training. Their experience(s) made the survey items easier for them to relate to and have the ability to accomplish in a matter of eight to ten minutes

time. If a student did not qualify based on year in school or dropped out of the survey before finishing all of the questions, the student was not entered to win a gift card. Also, their answers were not a part of the results section if they did not complete the survey. A student must have completed the survey in order to be qualified for a gift card and in order to be included in the results. The survey was twenty-four questions.

In the instructions, every student was aware they could win one of two possible twenty-five dollar gift cards if they completed the survey. The email address of each student was confidential and not tied to their survey answers, as the survey was completely anonymous. All participants had an equal chance at winning one of the gift cards but they could only win one gift card at a maximum. The survey questionnaire was used as the main data-gathering instrument for this study (See Appendix A). The first question in the survey asked for consent of the participant. The consent form was approved by the Institutional Review Board and included information about the chance of winning the gift card. If the participant did not consent, they were let out of the survey immediately. The questionnaire then asked two demographic characteristics of the respondents including their year in school and amount of time spent in rotations by month. If the students had not yet begun rotations (first and second years have not begun rotations), they were kicked out of the survey, thus disallowing them to continue.

The survey then explored attitudes towards clinical rotations as well as assessed outlooks and thoughts towards communication in handoff specific situations. After the two demographic queries, questions three, four, and five focused on overall clinical experience attitudes (more positive then negative, more negative then positive, negative, positive).

These questions briefly touched on provider interactions to assess students' overall attitude towards rotations as a set of experiences in the workplace thus far.

Questions six through twenty-three were structured using the Likert format. In this type of survey format, five choices are provided for every question or statement. The choices represent the degree of agreement each respondent feels towards the question. The Likert survey was the selected questionnaire type as this enabled the respondents to answer the rest of the survey easily but effectively. These eighteen questions focused on the topic of communication between student and physician, the issue of respect between co-workers and patients, communication error, patient safety, and communication training. All survey questions are attached in Chapter 6 for more details (see Appendix A). These question topics were chosen as a way to better understand multiple aspects of interaction between physicians as well as specific provider-student communication in the clinical workplace. The questions were limited in number in order to effectively engage the student survey-participants within a short window of time. Students answered based on experiences thus far. After two months, the survey was shut down and total responses for each item were obtained and tabulated.

As this study required the participation of human respondents, certain ethical issues were addressed. The consideration of these ethical issues was necessary for the purpose of ensuring the privacy as well as the safety of the participants. Among the significant ethical issues that were considered in the research process include consent and confidentiality. In order to secure the consent of the selected participants all of the important details of the study, including its aim and purpose, were told in emails sent to

students. By explaining these central details, the respondents were able to understand the importance of their role in the completion of the research. The respondents were also advised that they could withdraw from the study even during the process. The participants were not forced to participate in the research. The Institutional Review Board at the University of Illinois reviewed all survey material, and students were given their contact information if they needed to discuss the survey with them.

3.2 Data Analysis

Quantitative data was analyzed using SPSS Version 20.0. Demographic data was analyzed to better understand the pre-survey experience the medical students had regarding rotations in a hospital or clinical setting. Data was collected using the questionnaire survey. Data was calculated using a one way Chi-squared distribution test. Specifically, a Chi-Square goodness of fit test was used to address observed and expected values. The goodness of fit test is commonly used to test the association of variables in two-way tables. Theoretically, when using the Likert Scale on a survey, this research would expect to see an even distribution across all of the possible answers.

CHAPTER 4

RESULTS

4.1 Results of Data Analysis

A total of 57 respondents answered and completed the questionnaire. In order to use the Likert-scale for interpretation, weighted mean to represent each question was computed. The results showed that 93.5 percent of the respondents had been involved in clinical rotations for over four months with 78.3 percent of the respondents involved in rotations over six months, so personal student experience with handoff situations was not an issue (see Table 2). Fifty-seven percent of respondents answered that they have already noticed poor or unsatisfactory communication between doctors at work. Sixty-eight percent of respondents say problems are usually surrounding the topic of miscommunication. Forty-eight percent of student respondents felt the problem is not taken care of or cleared up immediately.

Ninety-eight percent of students felt that they had a positive relationship with their attending and 82 percent are happy with the relationship between themselves and their superiors. Despite this, many of the respondents (76.8 percent) did not feel that their attending physician gave them feedback on handoffs. Fifty-six percent of this group answered that they were unsure if their physician gives them feedback (See Table 1). Twenty-one percent of respondents disagree that their attending physician gives feedback on the handoff whatsoever. Ninety-six percent of the respondents felt their physician could do better in the situation of giving feedback after a handoff. This is an

astonishingly high number to support this research.

Fifty-nine percent of student respondents felt that their communication training in medical schooling has not provided them with the knowledge and effective skills to succeed as a doctor. Eighty-three percent of the student respondents did not strongly agree that they have learned about provider-provider communication as much as they have learned about communicating to patients.

After conducting Chi-squared tests on ten of the survey questions most directly relevant to communication in the healthcare workplace, statistical significance was found and computed. In nine of the ten questions, the p-value was revealed to be statistically significant ($p < .05$). The nine questions surrounded the topic(s) of handoff communication, or physician communication observation, in the workplace, by the medical students. The first two questions concerning students' feelings towards efficient communication with their attending physician, as well as observation of efficient communication at the workplace, both had highly significant values ($p < .001$) (see Table 3).

The following two questions regarded students' observation of poor communication at work as well as a perception that miscommunication is a leading cause of problems in the workplace. The analysis for these questions were found to be statistically significant ($p < .001$). Results concerning student perspectives on follow-up of communication errors after a handoff situation mishap, were also statistically significant ($p = .023$). Similarly, students feelings towards physician feedback on handoffs and satisfaction towards a handoff were statistically significant in that many students did not

have positive feelings or positive satisfaction ($p < .001$).

The last three queries that were computed specifically concerned communication training in medical school. The student was asked if their training has provided them with effective communication skills to succeed as a doctor and if the student learned about provider communication as much as they learned about patient-provider communication in medical school. The analyses were both significant ($p = 1.5E-04$, and $p = 5.2E-04$ respectively). The question regarding if the students' communication training is as strong as it could be had insignificant results but was trending towards significant ($p = .011$) and thus can still be considered important.

4.2 Tables

Table 1: Medical Student Satisfaction with Handoff Communication During Rotations

	Almost 100% of the Time	Most of the Time-more than 75% of the time	Some of the Time-less than 50% of the time	Almost Never-Close to 10% of the Time	Total
Time In Clinical Rotations					
Less Than Four Months	0	3	2	1	6
Four to Six Months	0	5	6	0	11
Over Six Months	2	25	11	0	38
Total	2	33	19	1	55

Note: 2 respondents (one in the ‘four to six month’ group, one ‘over six month’ group) did not answer this question

Table 2: Characteristics of Study Participants

	Participant Group (n=57)	Total Percentage
Year in Residency		
Third	28	49.2
Fourth	29	50.8
<u>Total</u>	57	100
Time in Clinical Rotations		
Less than four months	6	10.6
Four to six months	12	21.0
Over six months	39	68.4
<u>Total</u>	57	100

Table 3: Ten Study-Selected Survey Questions Concerning Handoff Communication

	SWD	SD	N	SWA	SA	P-Value
Survey Question						
I feel my attending communicates efficiently when discussing patients.	6	5	5	27	14	2.22E-06*
I observe physicians communicating effectively to achieve the highest patient outcomes.	12	2	7	27	9	2.62E-06*
I have noticed unsatisfactory communication between doctors	5	5	11	30	6	4.12E-08*
When a problem occurs in the workplace it is a problem with miscommunication.	3	1	11	30	12	2.38E-09*
When a handoff miscommunication occurs, it is taken care of.	11	4	17	17	8	0.023*
My attending physician gives feedback on handoffs.	14	3	29	9	2	1.51E-08*
My communication training provided me with the knowledge/ skills to succeed as a doctor.	10	3	5	22	17	1.55E-04*
I feel my communication training is strong.	13	4	10	16	14	0.11
I learned about doctor-patient communication as much as provider communication.	18	2	10	20	7	5.00E-04*

* denotes a significant value (p<0.05)

Note: The expected amount for all values is 11.4

Note: Full questions are listed in Appendix A.

CHAPTER 5

DISCUSSION

5.1 Introduction

The purpose of this study was to determine if students felt or observed the need for provider-provider communication training before beginning clinical rotations. Overall, the findings were very consistent with the hypothesis previously stated in Chapter 1 of the research. Students feel ill prepared, and readily admit to their communication shortcomings, in the anonymous survey. Students frequently notice communication mishaps, handoff communication inadequacies, and agree that doctors and caregivers are at fault. This can be traced back not necessarily to their own personal faults, but to their training in the first two years of medical school. Communication proficiency is indispensable to optimal patient care, particularly during hospital consultations amongst physicians. There is no standardized model for consultation consistently used, and when looking at the data from this research study, the majority of students feel unprepared for successful communication; both from the training in medical schooling and from communication with their attending physicians.

5.2 Discussion of Data

Communication proficiency is indispensable to optimal patient care, particularly during hospital consultations amongst physicians. There is no standardized model for consultation consistently used, and when looking at the data from this particular survey, it seems as though the majority of students feel unprepared for successful communication;

both from the training in medical schooling and from communication with their attending physicians. Many of the respondents (76.8 percent) did not feel that their attending physician gave them feedback on handoffs. This is consistent with other recent literature research on handoff communication (Arora et al., 2009 & Solet et al., 2009). Even though the mutual respect between doctors may be present, students are not receiving critiques or encouragement in the area of handoffs.

Over half (57 percent) of respondents answered that they have already noticed poor or unsatisfactory communication between doctors at work, which is unsurprising due to other findings in similar studies found in Chapter 2. Sixty-eight percent of respondents agree that when any problem arises occurs in the medical workplace, it is a problem with miscommunication while 47.6 percent of students responded that the problem is not taken care of or cleared up. Once again, this research supports existing research, as well as national recognition, that miscommunication is a large contributor to problems in the workplace (Delva et al., 2008).

When questions shifted to the topic of feedback from the attending physician(s), 76.8 percent of students felt that their attending physician does not give them feedback on handoffs. Fifty-six percent weren't even sure if the doctor talks to them about the handoff at all. They are also unsure what recommendations concerning a handoff even look like. Twenty-one percent of respondents disagree that their attending physician gives feedback on the handoff whatsoever. Ninety-six percent of the respondents felt their physician could do better in the situation of giving feedback after a handoff. This is an astonishingly high number to support this research.

According to this specific survey, 60 percent of medical students are entering hospitals and practices unprepared for efficient communication. The result, 83 percent of the student respondents did not strongly agree they learned about doctor-to-doctor communication as much as they have learned about communicating to patients, is typical when it comes to students learning about provider-provider communication. Often times, patient-provider communication is more of a focus in communication training than provider-provider communication.

When students answered questions based on their experiences thus far in medical school, many of the results were statistically significant, resulting in outcomes that can not happen by chance but have statistical relevance to them. The first two questions concerning students' feelings towards efficient communication with their attending physician, as well as observation of efficient communication at the workplace, had significant values meaning that students had skewed viewpoints on the ability of their supervisor's communication skills. This was expected partially due to lack of communication training in medical school and physician pressure to learn communication skills on the job (Dunn & Murphy, 2008).

The significant values concerning miscommunication as a considerable contributor to workplace problems also support the literature review research. Similarly, students feelings towards physician feedback on handoffs and satisfaction towards a handoff were statistically significant in that many students did not have positive feelings or positive satisfaction and the strong significance of these values further display the lack of approval students have after a handoff.

The last three queries specifically concerned communication training in the first two years of medical school, as well as experience(s) with communication ability in the workplace. The student was asked if their training has provided them with effective communication skills to succeed as a doctor, if their communication training is as strong as it could be, and if the student learned about provider-provider communication as much as they learned about patient-provider communication in medical school. Again, the analyses revealed all were significant, as the hypothesis recognized it would be. In this study, medical students do not feel they are learning all they should be when it comes to standardized communication training.

5.3 Strengths and Limitations

This specific study focused on students only in the University of Illinois medical school system. Fifty-seven students responded to the survey and specific demographics such as gender or race were not taken into account. In this case, the results cannot be generalized to the greater medical student community based on the issue of diversity and a small number of respondents. A study with a considerably greater number of respondents, as well as questions directed towards diversity of a population, is recommended for future studies. Multiple residency programs were affiliated with the respondents, which is a strength of the study.

This study did not include other groups of healthcare workers or other types of caregivers besides medical students (studying to become physicians), such as someone in the nursing profession. The idea that healthcare providers such as nurses should be included in handoff standardization and training is essential to patient care considering

the large impact nurses can have on standards of care as well as patient involvement. Ideally, nurses would be included in communication training by RN's and medical educators prior to the nursing student's clinical rotations. As Nussbaum and Fisher point out, "communication is particularly important in health care teams given the complex nature of medical care," (2009). The critical aspect of healthcare teamwork in reference to handoffs is important when looking at further research on the subject.

There are many challenges inherent to health communication contributing to difficulties, including, low health literacy, cultural diversity, contradicting or confusing health information, and lack of training for health care professionals. These aspects of communication were not a part of the study. Identity, work processes, status, tensions, and patient safety are constructed in ways that generate particular meaning to members of health care teams (Eisenberg et al., 2005). Similarly, barriers to an effective handoff, such as lack of time, language barriers, different modes of communication, or problems with the physical setting (including interruptions and other physical noise) are not included in this paper or in the questionnaire study done with medical students. After all, communication does not take place in a vacuum but is influenced by the context in which it takes place. Communication failures are complex and take multiple aspects of relationships into account. A clearer understanding of these facets could help in developing materials for students to assist them in handoff communication. Also, communication modes are diverse and complex in this age of technological advances. This is important to the idea of a changeover because of the inclusion of other communication methods to establish a handoff, such as email or recent additions to healthcare technology (electronic medical records, for instance). These barriers and

enablers are important to address and understand when looking at handoff standardization. Overall, standardized training still is a topic that needs to be developed despite barriers that can occur during the handoff.

5.4 Future Directions

An adequate, if not overwhelming, amount of research has been done on communication in the healthcare workplace. Much of this research focuses on intraprofessional communication between doctors, especially in the event of a handoff or handover. Standardization could also be applied to consultations between doctors, but further research may be needed to see if this situation could benefit as well.

Communication is studied extensively to determine where in the process failures are made and how the failures negatively impact outcome. While medicine is unique, there are other professions and industries where error-free operation is a high priority and standardization of handoffs has led to improved performance outcomes (Solet et al., 2005).

In the specific situation of handoffs, standardized skills will require the creation of materials and development of a strong assessment system to document capability to perform handoffs. Just as clinical practice principles can assist practitioners in making medical decisions for the patient, communication practice principles can serve a similar purpose. While research in use of assessment tools to evaluate handoffs is still in its early stages, much literature exists to guide the creation and use of such tools during medical training. Literature needs to expand on the complexities of training medical students in the subject area of communication by looking at existing models and developing handoff

communication training from there. Personalities of medical students, intricacies of the healthcare environment, and internal technology uses should be considered with further research in the topic of handoff communication, as well as when developing student training materials for handoff communication.

Existing methods to document clinical competence in the doctor–patient encounter can be modified to assess competence during handoffs for the doctor-doctor encounter. To drive the creation and dissemination of tools for education and assessment, this study advises educators and accreditation or certification bodies to invest in resources. These resources would guide and assist initiatives designed to produce standardized educational programs as well as a strong assessment system for these critical skills of both doctor and student to ensure safe patient care during times of discontinuity.

The handoff itself represents as a vehicle with which to teach and apply principles of professionalism in a setting of discontinuity (Arora et al., 2008). This responsibility includes the commitment to care for patients despite the lack of a longstanding relationship or a prior knowledge of a patient. Infusing this sense of responsibility in medical trainees is challenging. High-performance team members are expected to share a vision, or common goal. Promoting the idea that ‘every patient is your patient’ is an important concept when it comes to looking at the responsibility medical students and residents have for each individual they see in a hospital room (Memoir, 2007).

5.5 Conclusions

Many medical students not only lack training but also struggle to learn how to perform a consultation on the job. Effective communication skills can be taught, and

should be taught in a standardized form, to medical students. The need for a systematic approach to training medical students how to effectively handoff a patient to another physician, is apparent. A standardized model of handoff communication would not only be appropriate, but could save patient lives. Models have begun developing because of this knowledge (see Appendix B). Simulation-based training could be beneficial for students entering into their clinical years. Dedicated educators with a focus on creating materials designed to evaluate and teach standard handoff communication is necessary. The materials will need to be developed by medical educators and this will require nationwide compliance.

The elements of a safe handoff are known. Although some of the elements will be challenging to address because of chaotic physical environments and the lack of time physicians have, it is critical that we adopt practices used consistently in other similar high-risk settings. It is time for educators to use this information to teach students what they need to conduct safe handoffs before they begin to practice or train in a clinical situation. It is also time for hospitals to agree on a standardized format for handoffs.

Improving the education of medical students and residents is likely to improve consultations among physicians, especially in high intensity healthcare situations, where it is highly valuable. This will then lessen physician burden and improve patient care. The result will be an efficient and effective healthcare system with less of a financial burden. A standardization of handoff communication is vitally needed for all medical students to learn in their first and second years of medical school. With communication workshops and a method that every doctor at every healthcare facility is familiar with, healthcare

providers can work towards better patient outcomes. Allowing for face-to-face handoffs whenever possible, ensuring two-way communication during the process, utilizing both verbal and written means of communication, and using available technology, are all aspects of obligatory training for our medical students in relation to handoffs (Runy, 2008). Errors in medicine are frequent, as they are in every profession. While most mistakes only hurt the person who erred, inaccuracies in medicine have the potential for greater injury or death. The life of a patient is not something that should be risked when it can be avoided with education and training. The proposed solution to faulty communication in medical settings is to encourage and advance better information transfer.

APPENDIX A

Medical Student Survey Questions are as follows:

1. What is your current year in medical school?

Third year
Fourth year
Resident or Intern

2. How long have you been doing rotations in the current healthcare facility you are located in?

less than 2 months
2-4 months
4-6 months
more than 6 months

3. Has your experience with rotations met your previous idea(s) of how challenging rotations might be?

Yes, as challenging as I expected
More challenging
Less challenging than I expected

4. Has your overall experience with rotations been positive or negative?

More positive than negative
More negative than positive
Very negative
Very positive

5. Have your interactions with practitioners' (during rotations) been positive or negative?

More positive than negative
More negative than positive
Very negative
Very positive

The next questions are on a scale of 1 to 5 from 'strongly disagree' to 'strongly agree.'

6. I feel my attending physician/supervisor communicates efficiently with me when discussing patients.

1-strongly disagree

2- somewhat disagree

3-neutral

4-somewhat agree

5-strongly agree

7. When I don't understand the information a provider gives to me at the hospital, I speak up and let them know.

8. I am proud or happy of the relationship with my attending physician at work.

9. I am satisfied with the availability of clinical leadership during my rotations.

10. I feel that my coworkers (other medical students and residents) respect me.

11. I feel that my attending physician respects me.

12. I feel that my patients respect me.

13. During rotations, I observe physicians communicating effectively to achieve the highest patient outcomes.

14. I have noticed poor or unsatisfactory communication between doctors at work.

15. When a problem occurs in the workplace, it is a problem with miscommunication.

16. My supervisor/residing physician gives me feedback on consults.

17. My supervisor/residing physician gives me feedback on handoffs (when shift changes are occurring).

18. When a communication error occurs in a consult or handoff, it is *immediately* taken care of or cleared up.

19. Patient safety is reinforced as a priority in my clinical area.

20. I would feel safe being treated here as a patient.

21. I think my communication training in medical school thus far as provided me with the knowledge and effective skills to succeed as a doctor.

22. I feel my communication training is as strong as it could be at this point in training.

23. I learned about doctor to patient communication as much as I learned about doctor-to-doctor communication.

24. When a handoff occurs with another doctor, I leave the handoff feeling *completely* satisfied with the information I have.

almost never-close to 10% of the time

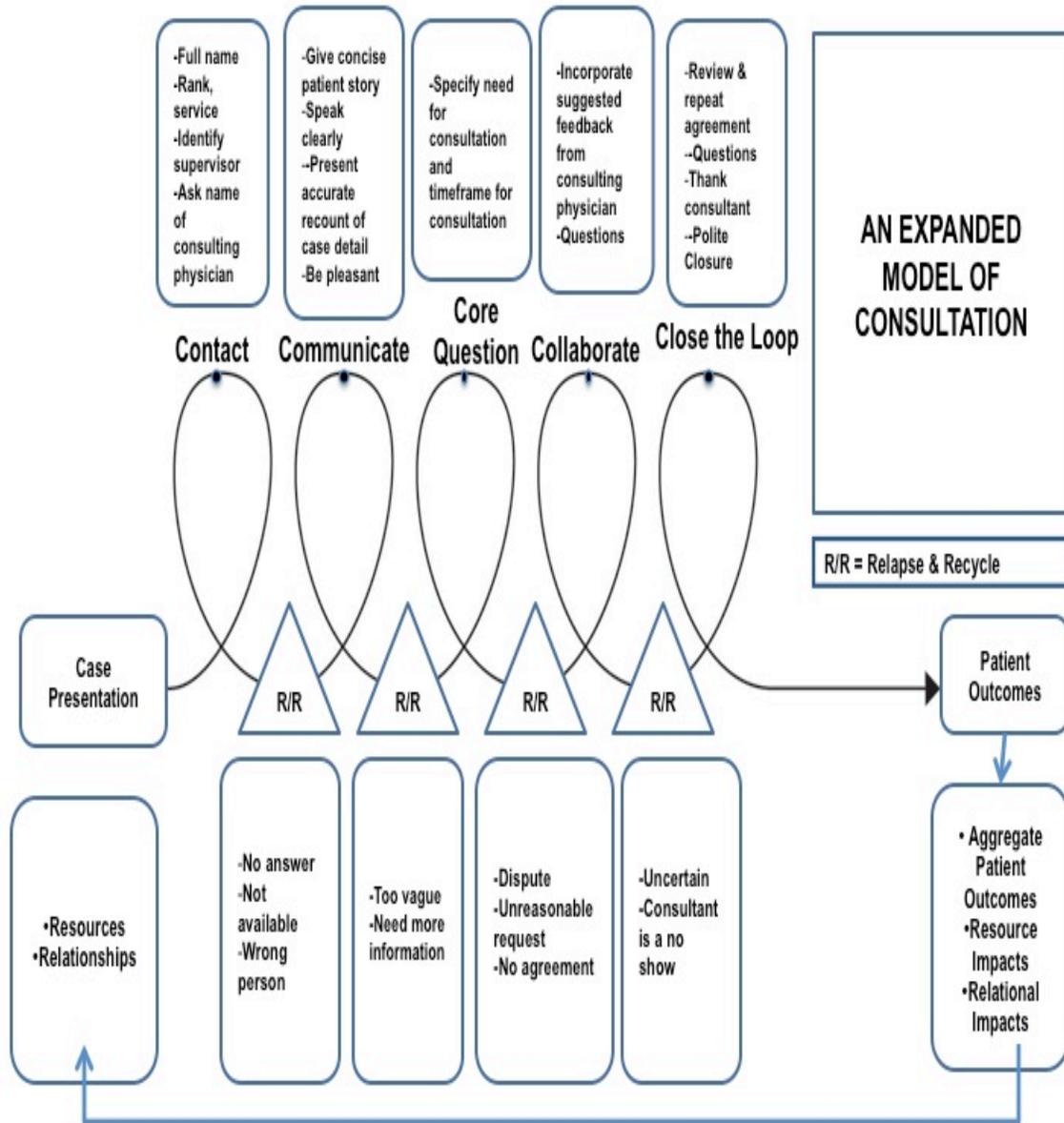
some of the time-less than 50% of the time

most of the time- more than 75% of the time

almost 100% of the time

APPENDIX B

The 5C Communication Model for Consultations



The model depicts communication between a physician who initiates a consultation with a specialist, and a consultant who responds. The consult is based on a patient's initial diagnosis/arising questions. Initial diagnosis and the opportunity for a consultation are based on existing resources/relationships in the hospital. The consultation may be seen as progressing through five cycles, each of which may relapse and need to be repeated. The result of the process is enhanced patient care, which are measured in terms of resources (time, procedures) and relationships, forming the basis of the resources/relationships that underlie ongoing consultations.

APPENDIX C

Global Rating Scale-Assessment used in Kessler et al. study

Performance Characteristic

Introduction of involved parties	1 Not Effective	2 Somewhat Effective	3 Effective	4 Very Effective	5 Extremely Effective
Patient case presentation	1 Not Effective	2 Somewhat Effective	3 Effective	4 Very Effective	5 Extremely Effective
Specified consultation objective	1 Not Effective	2 Somewhat Effective	3 Effective	4 Very Effective	5 Extremely Effective
Case discussion	1 Not Effective	2 Somewhat Effective	3 Effective	4 Very Effective	5 Extremely Effective
Confirmation and closing	1 Not Effective	2 Somewhat Effective	3 Effective	4 Very Effective	5 Extremely Effective
Interpersonal skills	1 Not Effective	2 Somewhat Effective	3 Effective	4 Very Effective	5 Extremely Effective
Global Rating	1 Not Effective	2 Somewhat Effective	3 Effective	4 Very Effective	5 Extremely Effective

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