

## Research Article

### A Taxonomy and Cultural Analysis of Intra-Hospital Patient Transfers<sup>1</sup>

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Key words: care transitions, patient transfers, quality improvement, ethnography, qualitative research

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## **A Taxonomy and Cultural Analysis of Intra-Hospital Patient Transfers**

## Abstract

Existing research on intra-hospital patient transitions focuses chiefly on *handoffs*, or exchanges of information, between clinicians. Less is known about patient *transfers* within hospitals, which include but extend beyond the exchange of information. Using participant observations and interviews at a 1,541-bed, academic, tertiary medical center, we explored the ways in which staff define and understand patient transfers between units. We conducted observations of staff (n=16) working in four hospital departments and interviewed staff (n=29) involved in transfers to general medicine floors from either the Emergency Department or the Medical Intensive Care Unit between February and September 2015. The collected data allowed us to understand transfers in the context of several hospital cultural microsystems. Decisions were made through the lens of the specific unit identity to which staff felt they belonged; staff actively strategized to manage workload; and empty beds were treated as a scarce commodity. Staff concepts informed the development of a taxonomy of intra-hospital transfers that includes five categories of activity: disposition, or determining the right floor and bed for the patient; notification to sending and receiving staff of patient assignment, departure and arrival; preparation to send and receive the patient; communication between sending and receiving units; and coordination to ensure that transfer components occur in a timely and seamless manner. This taxonomy widens the study of intra-hospital patient transfers from a communication activity to a complex cultural phenomenon with several categories of activity and views them as part of multidimensional hospital culture, as constructed and understood by staff.

Transfers of care in hospitals can be a threat to patient safety (Institute of Medicine, 2001; Joint Commission, 2016) placing patients at risk for delays in care (Horwitz, Moin,

Krumholz, Wang & Bradley, 2008), incorrect or missed medication administration (Bell, Rahimi-Darabad, & Orner, 2006; Gleason, et al. 2010; Lee et al. 2010) and admission to a unit unable to provide the care the patient needs (Horwitz et al., 2009). Transfers to inpatient floors from an Emergency Department (ED) are common events, with over 12 million such transfers occurring annually (Centers for Disease Control and Prevention, 2013). Additionally, more than 4 million patients are admitted to a medical intensive care unit (MICU) each year and most patients transfer to a general medicine floor during their hospital stay (Mullins, Goyal, & Pines, 2013). Clinical deterioration leading to MICU admission (or re-admission) within 24 hours of transfer to the floor and death have been used as safety metrics for intra-hospital transfers (Araujo, Rieder, Kutchak & Franco Filho, 2013; Brown, Ratcliffe, Kahn & Halpern, 2012). Despite the prevalence of such transfers and the risks they pose, there is a lack of scholarly attention to transfers, which are complex activities that involve several departments and teams, only some of which are engaged in direct patient care.

### **Background**

The most commonly studied aspect of transfers is the patient handoff. Cohen and Hilligoss (2010) provide a working definition of handoffs as “the exchange between health professionals of information about a patient accompanying either a transfer of control over, or of responsibility for, the patient” (p. 2). There is a growing body of literature from multiple disciplines on handoffs between clinicians within units at change of shift (Foster & Manser, 2012; Schouten, Caroline Burton, Jones, Newman, & Kashiwagi, 2015; Starmer et al., 2014) and on handoffs between clinicians across hospital units (Ong & Coiera, 2011), specifically from the ED (Apker, Mallak, & Gibson, 2007; Hilligoss & Cohen, 2013; Horwitz et al. 2009) and the ICU (Lyons, Arora, & Farnan, 2016) to other units. Handoff communication is typically uni-

professional, i.e., occurring between members of the same profession, and addressed as such in the literature (Li et al., 2013; Riesenber, Leisch, & Cunningham, 2010; Riesenber et al., 2009; Staggers & Blaz, 2013).

Studies on between-unit handoffs point to the connections between communication and structural challenges. For example, Beach et al. (2012) developed communication best practices, but also highlighted the different perspectives of ED physicians, who focused on triage, and general medicine physicians, who focused on longer-term goals, as well as the workload issues that lead individuals to prioritize self-preservation over teamwork. They acknowledged that “although we tend to focus on physician-to-physician hand-offs, the reality is that patients are transferred from one entire clinical microsystem to another” (Beach et al., 2012, p. 1190). In 2007, Horwitz et al. (2009) surveyed 139 staff of one ED via email about adverse events and near misses after ED-to-inpatient transfers. They found that communication failures were thought to be the result of several issues, including those related to the patient care environment, information technology, patient flow, and assignment of responsibility. Hilligoss and Cohen (2013), in studying transfers from the ED, acknowledged the larger cultural context in which handoffs occur, citing such factors as power dynamics and a lack of established relationships among those sending and receiving patients. That work is further developed into a conceptual framework that places handoff interactions into the larger context of negotiation, structural, and macro systems issues (Hilligoss, Mansfield, Patterson, & Moffatt-Bruce, 2015).

Handoff studies have provided valuable insights to guide quality improvement initiatives, increasingly incorporating systems issues into emerging frameworks and recommendations. Some recent studies have conceptualized transfers more broadly. Jennings, Sandelowski, and Higgins’ (2013) studied transfers in the context of nursing workload. Buchner et al. are studying

intensive care unit (ICU) to hospital ward transfers across 10 Canadian hospitals (2016). Yet most studies consider only handoff communication and not patient transfers as a whole.

Therefore, we sought to describe intra-hospital transfers as complex cultural phenomena that involve multiple professions and include communication but encompass other categories of activity. We explored the experiences and perceptions of staff from multiple professions regarding transfers to general medicine floors from either the ED or the MICU. By including multiple roles and analyzing the meanings that informants assigned to transfer activities, we sought to understand aspects of hospital culture that are relevant to transfers and develop a comprehensive taxonomy of transfers that includes, but is not limited to, communication activities. Such a taxonomy can be a useful guide for quality improvement initiatives designed to improve the transfer process, with the ultimate goal of increasing patient safety in hospitals.

## **Method**

### **Design**

This quality improvement project was implemented by staff who were affiliated with a multidisciplinary center focused on improving care transitions into, within, and out of the hospital. The center was funded by the Agency for Healthcare Research and Quality (AHRQ). Staff and team leaders at the center conducted three quality improvement projects that focused on different types of patient care transitions at the hospital in order to increase patient safety. As part of each project, a process analysis was conducted at the outset to thoroughly understand the patient transfer process the project aimed to improve. This paper reports on the process analysis of intra-hospital transfers, specifically, transfers from the ED or MICU to a general medicine unit. The Institutional Review Board overseeing the center exempted each project as quality

improvement, including the process analyses conducted at their onset. Participation was voluntary and did not affect the department's or individual informant's relationship with the hospital or the center. The teams conducting the analyses de-identified all data through removal of names and other identifying information in transcripts and observation notes.

We used techniques derived from ethnography, such as participant observation, interviews, and examination of artifacts, to analyze informants' understanding of intra-hospital transfers. These methods can generate rich, illustrative evidence about issues related to patient safety and health services (Dixon-Woods & Bosk, 2010; Dixon-Woods, Suokas, Pitchforth, & Tarrant, 2009; Hoff & Sutcliffe, 2006).

### **Setting, Sample, and Informants**

We conducted this project at a 1,541-bed urban, academic tertiary medical center in the northeastern United States. Hospital departments studied (n=4) were ED, MICU, General Medicine, and Bed Management. In 2013, out of 276 reports of inadequate hand-off related adverse events, 104 related to transfer to from the ED and 25 from the MICU. Hospital administration identified transfers to general medicine from these departments as the most problematic. In the hospital safety culture survey administered in 2015, general medicine personnel's rating of handoffs and transitions was in the 50<sup>th</sup> percentile of AHRQ benchmarks for the category. These concerns guided our selection of hospital departments for the project.

We included the ED (76 beds) and MICU (28 beds) as departments sending patients, and general medicine as the department receiving patients. We narrowed our inclusion of general medicine to one teaching service unit (28 beds) and one hospitalist unit (14 beds), to allow for an in-depth understanding of contexts: teaching service and hospitalist units operate with different

personnel and aims, which affect culture. While these differences were evident in the data collected, for the purpose of this analysis, we focused on their similarities as receiving units as part of the general medicine department of the hospital. We also studied the bed management department because of the staff's critical role in coordinating transfers. Bed management is a centralized administrative department of the hospital made up of both registered nurses and non-medically trained staff. Bed managers use a software program to manage hospital bed assignments according to detailed algorithms.

For both observations and interviews, informants were asked to participate based on their active involvement in or oversight of patient transfers (see Table 1). We used purposeful sampling to identify a range of these staff across hospital departments, including physicians, physician directors and advanced practice providers; staff nurses, nurse educators, nurse managers, and patient safety nurse leaders, all RNs; bed management personnel, unit clerks; a patient relations coordinator; and the director of the hospital handoff committee. Physicians, advanced practice providers, and nurses had a direct role in sending or receiving patients. Physician directors, nurse managers, and patient safety nurse leaders had a supervisory role developing, training, and ensuring adherence to transfer protocols. Bed managers and associates assigned patients to beds. Unit clerks coordinated the logistics of the transfer process. The patient relations coordinator and the director of the hospital handoff committee dealt directly with transfer quality improvement initiatives.

## **Data Generation**



The lead author served as the observer and interviewer, or ethnographer, for the project. She was employed as a research associate at the center. New to the hospital environment, she was studying the cultural scenes she encountered as an outsider. This was helpful in exploring informants' implicit assumptions. The ethnographic record for this project consisted of field notes from observations, corresponding analytic notes, textual artifacts collected in the field, and transcribed interviews.

**Participant observation.** From February through May 2015, the ethnographer visited four hospital departments sixteen times for a total of 31 hours for one to three hours per visit. During observations, multiple informants were sometimes shadowed during one observation session. Observations recorded various aspects of life on the unit including interactions of staff with other staff, patients, and family members; the physical environment; tasks and workflow; and the transfer of patients in and out of the unit. Hospital departments and examples of events observed are listed in Table 1. All observations took place during day shift hours, between 7:00am and 7:00pm. The ethnographer fully disclosed her identity and the purpose of the project, and obtained verbal permission to conduct participant observation before each session from the unit nurse manager and the individual informants that were shadowed. On the few occasions that she spoke with a patient during an observation, she introduced herself and described the project. Patient names or identifying information were not recorded in field notes. Condensed field notes were taken in a notebook, then transcribed and expanded after each session with additional analytic notes and emerging themes. Observations informed preliminary ideas about the categories of transfer activities and the cultural scenes in which transfers occur. These ideas were further explored through qualitative interviews.

**Qualitative interviews.** In-depth, open-ended interviews with 29 staff were conducted between April and September 2015. Informants were recruited in a variety of ways, including face-to-face conversations, telephone calls, and email messages. Informants were asked for verbal consent to conduct and record the interview before it began. As part of this process, informants were told that all identifying information would be removed from the transcript. None of the informants dropped out or declined to be interviewed.

Interview topics included the informant's role in the transfer process; perceptions of the process, including what worked well and what did not; examples of recent successful and unsuccessful transfers; and opportunities for improvement (see Table 2 for sample questions). As preliminary categories of transfer activities were discovered through observations and interviews, the ethnographer added probes related to these categories. Interviews were scheduled at the informant's convenience and held in private locations within the hospital, including staff offices and closed conference rooms. The average interview length was 35 minutes. The shortest interview was 13 minutes and the longest was 67 minutes. Interviews were audio-recorded, professionally transcribed, and proofread by a research assistant. The documents were then entered into Atlas.ti 7 qualitative software (Scientific Software, Berlin, Germany) for data organization and retrieval.

### **Data Analysis**

Spradley (1979) describes the core of ethnography as a "concern with the meaning of actions and events to the people we seek to understand" (p. 5). We sought to understand informants' meanings of their social world and use these meanings to develop a taxonomy of transfer processes at the hospital, using both observations and interviews. This involved understanding the different cultural microsystems, or hospital departments, in which transfers

were shaped. Our results are based on two forms of simultaneous analysis that Spradley delineates: the discovery of cultural themes, which he describes as charting “the broader features of the cultural landscape” (p. 185), and taxonomic analysis, to understand the domain of transfers and the categories that comprise transfers.

The analysis process was collaborative. During the observation period, the ethnographer and another author (GJ) met regularly to debrief. At the time of the project, GJ was the medical director of inpatient medical services, leader of the quality improvement project examining patient care transitions within the hospital, and a practicing physician at the hospital. Together, they discussed observations of intra-hospital transfers and hospital departments from the “insider” and “outsider” perspectives. The ethnographer also periodically reviewed the process and findings with center consultants who had extensive experience conducting observations in healthcare settings.

The interview data were coded by the ethnographer and two other authors (MCB, SF), both also affiliated with the center. Open coding of transcripts led to the development of a coding structure. The coders separately coded each interview, and then came together as a group to review the transcript. During these meetings, the ethnographer shared findings from the ongoing observations, which were often incorporated into the emerging coding structure. Consensus was reached in the assignment and definition of codes through discussion. Memos on codes and nascent themes were kept in Atlas.ti. The coding structure was shared with the larger project team at several points during the process to ensure face validity. Over time, specific codes, such as “bed cleaning” or “census” were placed into ever-widening codes that later became themes. For example, the code that we termed “individual twist,” captured discussion of how individuals’ unique identity, preferences, and experiences impacted their actions around transfers and

responses to their environment. This code informed the development of the theme “Individual Attempts to Manage Workload” described below. Additional codes that were developed into themes and included in the current analysis were “transfer process information” which included sub-codes that represent the categories of transfers below, “unit identity” with sub-codes for each hospital department studied, and “bed availability.” Further codes, such as “hospital relationships” and “role identity” helped us understand the emerging themes.

Once the coding structure was finalized, each transcript was reviewed and recoded. The coding structure also informed the analysis of observation data: the ethnographer revisited the observation field and analytic notes and wrote memos on themes emerging from both the interviews and observations. Different data sources, and the perspectives they represented, were constantly connected to and compared with each other to identify cultural themes and the categories of transfer discussed below.

Finally, themes emerging from the data were reviewed in a series of feedback sessions with leaders and staff from the hospital departments studied and hospital management (Creswell & Miller, 2000). Feedback sessions were attended by both informants and other staff within the hospital departments studied. During these sessions, the team shared findings and asked for feedback to ensure accurate interpretation of participant meanings.

## **Results**

From our ethnographic data collection and analysis process, we identified relevant cultural themes and developed a taxonomy of transfers. In the first part of the results, we focus on three cultural themes important in understanding the transfer process. In the second part of the

results, we present a taxonomy of transfers that is rooted in the informants' lived experience of transfers discovered in the analysis process.

### **Cultural Themes that Guide Staff Orientation to the Transfer Process**

Spradley defines culture as “the acquired knowledge that people use to interpret experience and generate social behavior” (p. 5). This definition, with its emphasis on interpretation, informed our analysis. Three major cultural themes that impacted staff orientation to the transfer process were discovered. First, informants saw their role in transfers, and the transfer process itself, through the lens of the unit identity of which they felt a part. Second, informants' work in the transfer process was guided by their desire to cope with workplace stress in a taxing environment. Finally, staff accomplished transfers in the context of bed scarcity, in which beds became a valuable and sought-after resource. Though not exhaustive, these cultural themes were identified as the major ones that guided staff actions throughout the transfer process.

**Unit identity.** Staff were deeply ingrained in the culture of their unit, which tended to preempt hospital identity. Informants' perceptions of their own unit were made apparent when they contrasted their unit to others. Those in the ED saw stabilizing the patient and deciding on disposition as their primary role. ED length of stay was viewed by informants as an important metric by which they and the hospital administration measured their success. An ED physician explained:

Here's how an emergency physician thinks. In sequence, is this person going to die in the next few minutes if I don't do something? ...in the next few hours? Does this person need to stay in the hospital? The fourth question is what is wrong with

this person? That's our fourth question. That's the internist's first question. We've already handled the other three things for them. They don't ... think that way.

General medicine staff saw themselves as providing patient-centered care. One hospitalist said:

[General] medicine is the default service...we train our staff to never say 'no.'

When asked to see a patient, you see the patient, make sure they're safe, and if you disagree with something...we'll address it at another forum. While the patient is in limbo, we are not to...fight over the service...other services ...will just...say, 'no,' and move on.

MICU staff expressed their desire to care for the hospital's sickest patients, seeing that as "what we are here for" (MICU attending). Their desire to care for the sickest patients was sometimes tempered with concern that others in the hospital were unable to care for acutely ill patients. MICU staff cited changes in medicine and the hospital that simultaneously allowed critically ill patients to live longer, while compartmentalizing the skills needed to care for these patients within the MICU. The MICU staff operated through a lens that emphasized the challenges of working in the unit and cohesion among unit staff.

Bed managers and associates placed patients throughout the hospital. They considered patient care needs, acuity, bed availability, and unit capabilities when making decisions about priorities in a resource-scarce environment. Unlike staff in patient care units, bed managers dealt with the hospital as a whole and had the complex job of negotiating multiple units' agendas. The identity of bed management was one of contested independence: management encouraged staff to resist pressures from units with specific agendas regarding patient placement. A sign displayed

in the bed management office explained much about bed management personnel's struggle regarding disposition decisions and the pressure they received from staff in patient care units. It said, "No More Explaining Our Rationales." Seen only by bed management personnel, the sign reminded them that when staff in patient care units questioned their decisions, they were not obligated to explain.

**Individual attempts to manage workload.** In order to care for patients adequately and thoroughly, and also to make their work life more manageable, staff sometimes actively sought to avoid patients or optimize the timing of patient arrival. In the ED, emphasis was placed on quickly sending patients that needed to be admitted up to the floor. A nurse stated, "We want to stabilize you and get you out of here," reflecting the ED nurses' constant struggle to best position themselves for the unknown severity of problems and volume of patients coming through the door. Once they knew which patients would be arriving on the floor, general medicine nurses were permitted to review patient's electronic health record (EHR) before arrival, and did so, to ensure they were appropriate for the level of care floor nurses could provide; in this way, they sought to exert some control over their workload while ensuring patient safety.

Physicians too engaged in activities that minimized workload and the number of patients under their care. An ED physician explained that booking a patient to a general medicine floor meant a shorter period of time until responsibility for the patient was transferred, as compared to when transferring to a specialty service or higher level of care (explained further below under disposition). He said, "I think sometimes that may influence decision-making" regarding disposition.

At the time of the project, ED and MICU providers could make the decision to send a patient to general medicine without any acceptance procedure. This led to stress and resentment

among hospitalists that felt some patients admitted to general medicine belonged on specialty floors. Workload management was also seen as residents “defended” their unit from patients that could be placed elsewhere; in an observation, the ethnographer heard an elaborate discussion between residents from the MICU and cardiology. A patient had just gone into distress after surgery and both residents were making the case that she best belonged in the others’ unit.

Administrative staff also worked to minimize their stress and workload. This was done in different ways by different individuals. To keep track of tasks in an elaborate procedure of notification to both sending and receiving providers, and to be prepared to show evidence of calls and other forms of notification, a MICU unit clerk had developed an extensive paper documentation system beyond the required electronic documentation. This minimized anxiety about the possibility that a notification would be missed and she would be blamed. Staff in bed management attempted increased efficiency and protocol adherence by centralizing phone calls with an automated system. This replaced an older system of giving out specific bed management staff numbers to personnel in patient care units.

**Beds as commodity.** Through observations, we came to see empty beds as a highly sought-after commodity, and the shifting of patients as a means to acquire these empty beds. The ultimate goal of hospital management was to place patients in beds to provide care, and to make room for new patients, there was pressure to empty beds. Some informants referenced a bothersome “push” rather than “pull” mentality within the patient care units studied: the ED wanted to push patients up to floors; the MICU was always trying to identify the least sick patient who could transfer out if another MICU bed was needed, and general medicine was constantly attempting to discharge patients each morning to make room for sicker patients. Due to demand, units did not need to actively seek to fill beds.



ED nurses expressed satisfaction with attending physicians that made fast disposition decisions, allowing timely transfers. A charge nurse used phrases such as “Did [bed number] roll?” And “Do you have any beds for me? You got nothing for me?” demonstrating the urgency of freeing scarce ED space and moving patients to floors as quickly as possible. MICU decisions were also impacted by the need to move patients and free beds. A MICU physician director said, “What we’re transferring out is the least sick person.” In the context of scarce beds, thoughts of safety meant weighing the acuity of different patients against each other. Another MICU physician said, “... I have to make a choice...if someone goes to the floor and something bad happens, are they going to die? ...If I don’t take that ED patient up he might die.” For general medicine, the push factor was revealed in discussions of discharging patients. Emphasis was placed on discharging patients by 11:00 a.m. to accommodate new patients throughout the day.

Each day was colored by the patient census. The hospital often operated at full capacity and the ED was often serving more patients than it had beds for, with patients in stretchers lined up in ED hallways. High census meant high tension: staff from different units had different priorities, and as they sought to make heavy workloads manageable, the complex transfer process became a scene of culture clash. Staff perceptions of priorities and patient care goals aligned with the culture of their own unit but conflicted with the culture of other units, and these underlying differences emerged and conflicted during the transfer process.

### **A Taxonomy of Transfers: Categories of Activity**

In this section, we describe a taxonomy of transfers that was developed from the analysis process and delineates five categories of intra-hospital transfers. The five key categories of activity identified by informants were: disposition, or patient, floor, and bed match; notification to sending and receiving staff of patient assignment, departure and arrival; preparation to send

and receive the patient; communication between sending and receiving units; and coordination of the transfer. Within each category, the cultural themes discussed above played into the degree of satisfaction staff had with the transfer process, as well as the potential for patient safety threats and adverse patient experiences.

**Disposition.** Observations revealed the importance of disposition, defined as the processes involved in determining the right floor and bed for a particular patient, to the transfer process. In the ED, residents worked to determine the most appropriate place for patients, taking into account patient factors, but also the varying processes of acceptance by different hospital units. During interviews, informants spoke about correct disposition as paramount to the success of transfers. At this hospital, ED physicians could request a general medicine bed directly through the electronic admission order, unlike specialty floors or the MICU, which required acceptance by the receiving physician. Several informants suggested that this created a power dynamic between units resulting in a feeling of lack of control within general medicine. A hospitalist noted:

That's been a problem...that the patients don't go to the right services, because they would call urology and urology would say, "No, I know the patient has kidney stones and kidney failure, but [he] also has bad COPD [chronic obstructive pulmonary disease], so book him to medicine, and we'll just consult." Then ED... just [books] them to medicine...they don't call you to say, 'Can I book them to medicine?'"

In an ED environment in which patients in stretchers are often lined up in hallways due to lack of ED treatment space, swiftness of the process mattered in choosing disposition.

While ED physicians were responsible for choosing a disposition, general medicine nurses served as a check to those decisions. In interviews, nurses discussed the different capabilities of each floor, patient needs that were inappropriate for particular units, and concerns in caring for unstable patients. A bed manager explained the practice of questioning disposition decisions:

The charge nurse usually calls if there's something wrong or ... to get more clarification on the patient...just to make sure that they're absolutely appropriate for the floor because sometimes we've had patients booked to the floor whose [vital signs] are really, really bad.

The charge nurses were informed by the floor nurses who consistently reviewed the EHR of incoming patients to make sure they were appropriate for the floor.

**Communication.** Informants' discussion of communication often centered on the utility of verbal and nonverbal modalities of handoff; at this hospital, the EHR review had replaced verbal handoff for patients transferring from the ED to general medicine floors. For MICU to general medicine transfers, verbal nursing handoff was optional, although MICU physicians were still required to call inpatient physicians accepting transferring patients. Many informants remembered when verbal handoffs were always mandatory, and this memory colored informants' opinions. An ED resident described receiver-initiated verbal communication:

We do sometimes talk directly to the floor teams but it's only when they call us.

Usually, they're calling us because they...have a question about whether it should go to...a higher level of care. It's not usually just for information gathering purposes.

Those in favor of the EHR review instead of verbal handoff suggested the level of detail in the EHR made the verbal handoff unnecessary and mentioned decreases in transfer times; previously, patients were not transferred until the verbal handoff was complete, a process often delayed by the availability of receiving staff. Those in favor of mandatory verbal handoff mentioned the lost ability to communicate or understand rationale for decisions, nuanced knowledge, or non-medical information, such as family or social issues. Verbal nursing handoffs from ED and MICU to general medicine were optional but appreciated by general medicine nurses when done. A general medicine nurse recounted: “you get all those little things that you don’t find out right away...like family dynamics, personality of the patient...” When verbal handoffs did occur, there were not clear guidelines on what they should include, and each person had their own style for giving or receiving information. Tensions sometimes emerged between clinicians with different expectations about appropriate levels of detail.

**Notification.** For nurses and physicians, being notified about their new patient assignments was important to adequately prepare and care for patients. Notification was done through a flawed, automated system that sometimes left receiving clinicians little or no time to prepare for arrivals to the floor. A particularly stressful care transition occurred when patients awaiting admission from the ED for more than four hours were assigned to a hospitalist for care. The hospitalists were expected to travel from their inpatient units to the ED to assess and care for these patients. Late notification left hospitalists scrambling to cover patients in different locations. Flawed notification exacerbated the loss of control that clinicians already felt given their lack of consultation in disposition decisions and lack of verbal handoff from ED clinicians.

Notification about new patient assignments was only one type of notification identified. Other forms of notification discussed in interviews included the notification informing the MICU

sending team of the patient's general medicine provider assignment, allowing for verbal handoff; notification to the general medicine team of patient arrival, and notification of patient departure to prompt final preparations by ED and MICU nurses. These notifications were essential to managing the transferring patient's care, as staff had to respond in a timely manner to these notifications to ensure successful transfer. While management was attempting to automate all forms of notifications to increase efficiency, many of these still relied on the unit clerk, whose ability to notify in a timely manner depended on fluctuating competing demands.

**Preparation.** Informants referred to preparation activities to both send and receive patients. Receiving physicians and nurses reviewed the EHR, nurses ensured room readiness, and clerks prepared information packets for new patients detailing what to expect during their stay. Preparation involved engagement with hospital housekeeping to ensure the room was ready for the patient. ED physicians and nurses finished a "care complete" checklist prior to the patient's departure, which included a vital sign check to ensure stability for transfer. Preparation on the sending side demonstrated the disconnect between the sender's process and the receiver's needs. An ED nurse said, "...the floor nurses probably have a lot of complaints about it, but from our part we just have to make sure that our chart is complete... vitals are up-to-date, and then the patient just goes up."

A receiving nurse notes the patient impact of transfers occurring before preparation steps are completed:

They were sending patients too early, because they were just so busy downstairs.

That makes [patients] even more angry because now they're waiting in the hallway [for the room to be cleaned] ... It's not private. It's out in the open.

**Coordination.** Informants were aware of the way each step in the transfer process was contingent upon the timely completion of previous tasks. Assessment of the patient, disposition negotiations and decisions; nurse and physician steps to prepare the patient for transfer; bed management identification of a bed within the receiving unit; cleaning the room and bed; transporting the patient; and receiving clinicians' preparation to care for the patient all needed to be coordinated. Poor coordination could cause many delays, and given the scarcity of beds, delays were problematic not only for individual patients but also for the hospital as a whole. For an individual patient, an uncoordinated transfer might mean time spent waiting in the hall for a clean bed, multiple transfers after landing on the wrong floor, or even missed medications if confusion or misunderstanding arose as to last dose given. For the hospital, uncoordinated transfers wasted valuable time and resources in a bed scarce environment.

Key coordinators were those in bed management and unit clerks. Coordination was facilitated by online systems, such as the online staff directory and the housekeeping system that tracked clean and dirty beds. Remarkably, because of the highly-specialized nature of work undertaken at the hospital, physicians and nurses were often unaware of the role of coordinating actors, and were unable to describe even their most general tasks. For example, in the sending units of the ED and MICU, the timeliness of the transfer process was contingent upon the unit clerk. They requested or ensured a bed assignment from bed management, arranged transport, and notified clinicians of patients' imminent departure so that they could complete care and charting prior to transfer. Yet clinicians were often unable to describe the role of the unit clerk in the transfer process when asked.

## **Discussion**

By analyzing data from observations and interviews with hospital staff about transfers from the ED and MICU to the general medicine floors, we identified cultural themes that affected transfers, including the centrality of unit identity for staff, staff actions to manage workload, and the ways in which staff reacted to an almost constant scarcity of empty beds at the hospital. In addition, we gained a broad understanding of the categories that comprise a transfer: disposition, notification, preparation, communication, and coordination. For this analysis, conducted as part of a process analysis at the onset of a quality improvement project, we used ethnographic methods to deeply explore the meaning of transfers to the staff engaged in them. Such methods, while not traditionally employed for quality improvement projects, can uncover entrenched cultural perceptions that are critical to understand if quality improvement efforts are to be successful. Likewise, with this analysis, we demonstrate that data collected as part of quality improvement efforts can contribute to our knowledge of health services.

While we highlight three cultural themes that affect transfers, these are not exhaustive. Other themes, such as professional training and identity, shaped staff perceptions of transfers, and themes intersected with one another. For example, unit identity was identified as a salient factor in shaping transfers, but training and professional identity also influenced transfer perceptions. The three cultural themes we highlighted were chosen for their importance in transfer perceptions, as well as their potential to conflict with a paradigm that posits patient safety as a shared goal, common in quality improvement initiatives. While patient safety was a shared goal of staff interviewed, viewed through the lens of unit identity, workload management, and beds as commodity, patient safety took on different interpretations. More research is needed to understand how culture influences transfers. In particular, our analysis points to the existence of microsystems at the hospital that are important to understand for conducting quality

improvement work. Further ethnographic exploration of the microsystems that exist within hospitals and how they interact with each other, both positively and negatively, would benefit quality improvement work, particularly for initiatives that affect more than one hospital unit or the transfer of patients between units.

The taxonomy developed can be a starting point to help characterize the categories of transfer activities at different hospitals and develop interventions to address specific aspects of transfers. Expanding from a focus on communication to include other actors and activities allows more numerous and plausible intervention possibilities, and enhances our potential to impact transfer outcomes. At this hospital, this taxonomy has laid the groundwork for intervention development in the five categories of transfers and led to a survey to quantify staff experience of transfers within these categories.

By using observations and interviews to understand the transfer process, we also gained insight into how elements of transfers impacted staff satisfaction. The analysis highlights the importance of staff experience as an outcome area to be explored in future studies of transfers, consistent with the growing scholarly emphasis on staff experience as important in its own right and as a requisite for patient safety (Lucian Leape Institute 2013, Weil 2016).

The comprehensive taxonomy of transfers developed here may be particularly important in the age of the EHR, as hospitals increasingly rely on it for the transmission of information. In many places, verbal communication may play a complementary role, rather than be the sole source of information. Considering its evolving nature, it is important to study the transfer process holistically to understand the role of communication in relation to the other categories, as well as the impact different forms of communication have on the process.



This project has several limitations. The scope of this analysis includes a taxonomy of transfers and some of the main cultural themes that impact transfers at a large academic tertiary medical center in the northeast. Ethnographic studies in hospitals with different characteristics (e.g. a smaller or rural) may reveal different cultural themes and categories of transfers in a taxonomic analysis. The reliance on the EHR as a communication tool for patients transferring from the ED to the general medicine floors may vary across hospitals. Future research should evaluate and compare the transfer process across multiple institutions. Informants were hospital staff and thus we did not capture the perspective of patients, an important area for future research. The project was also limited by a lack of observations between 7PM and 7AM and a lack of representation of other hospital departments involved in the transfer process, such as housekeeping and transport. Finally, our focus on culture and the development of a taxonomy does not preclude the need to examine other hospital-level factors, such as robustness of technology and hospital management priorities, for their impact on the transfer process.

### **Conclusion**

This analysis expands our understanding of intra-hospital transitions of care as well as the role that ethnography can play in quality improvement work. By creating a taxonomy of intra-hospital transfers from the perspective of multiple professions, we capture categories of transfer activities and some cultural themes that impact the transfer process. By using ethnographic methods, we developed a broad view of transfers that expands current concepts of activities involved in transfers beyond the realm of communication to include four other categories, namely disposition, notification, preparation, and coordination. Further, we posit that the culture of the hospital, and the cultural microsystems of different hospital departments, are central to transfers, not merely the context in which they occur. While the taxonomy developed needs to be

vetted for applicability to other settings and revised accordingly, it may serve as a useful tool to comprehensively evaluate and improve transfers, thus enhancing staff satisfaction, quality of care, and ultimately patient safety.

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Table 1 Data Collected by Hospital Department

Observations (n=16)	Interviews (n=29)
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Hospital Department	n	Examples of Events Observed	n	Informants Interviewed*
Emergency Department	4	<ul style="list-style-type: none"> <li>• Resident disposition decision making process</li> <li>• Unit clerk telephone communication</li> <li>• Transportation process for inpatient admissions</li> </ul>	6	<ul style="list-style-type: none"> <li>• Physician Director</li> <li>• Attending Physician</li> <li>• Resident Physician</li> <li>• Nurse Educator</li> <li>• Staff Nurse</li> <li>• Unit Clerk</li> </ul>
Medical Intensive Care Unit	3	<ul style="list-style-type: none"> <li>• Morning intra-professional rounds</li> <li>• Charge nurse management duties</li> <li>• Acceptance procedure for incoming patients</li> </ul>	6	<ul style="list-style-type: none"> <li>• Physician Director</li> <li>• Attending Physician</li> <li>• Resident Physician</li> <li>• Nurse Educator</li> <li>• Staff Nurse</li> <li>• Unit Clerk</li> </ul>
General Medicine (including a hospitalist unit and a teaching unit)	7	<ul style="list-style-type: none"> <li>• Nurse intake of new patient</li> <li>• Unit clerk procedure for “arriving” patients</li> <li>• Patient discharge process</li> <li>• Patient-staff communication about negative transfer experience</li> <li>• Room preparation for new patients</li> </ul>	13	<ul style="list-style-type: none"> <li>• Hospitalist Director</li> <li>• House Staff Director/Resident Program Director</li> <li>• Hospitalist Attending Physician</li> <li>• House Staff Attending Physician</li> <li>• Physician Assistant</li> <li>• Resident</li> <li>• Nurse Educator</li> <li>• Nurse Manager</li> <li>• Patient Safety Nurse Leader</li> <li>• Staff Nurse (2)</li> <li>• Unit Clerk (2)</li> </ul>
Bed Manage-	2	<ul style="list-style-type: none"> <li>• Bed assignment for ED patients</li> </ul>	2	<ul style="list-style-type: none"> <li>• Bed Associate</li> <li>• Bed Manager</li> </ul>



ment

- Telephone communication about contested disposition
- Hospitalist assignment process for new general medicine patient

NA

NA

NA

2

- Handoff Committee Director
- Patient Relations Coordinator

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*\*n=1 except where noted*

Table 2 *Sample Interview Questions for Hospital Staff Involved in Transfers from the Emergency Department or Medical Intensive Care Unit to General Medicine*

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Question	Probes
Let's start by having you briefly describe what you do at the hospital. Please describe your role and experiences with patient transfers within the hospital.	<ul style="list-style-type: none"><li>• What role did you play in transfers?</li><li>• What are your responsibilities?</li></ul>
Tell me about the process of navigating the transfer from X floor to X floor within the hospital.	<ul style="list-style-type: none"><li>• What is the process? Can you walk me through the process?</li><li>• What is your role in this process?</li><li>• Tell me about roles of other team members and how you coordinate with them.</li><li>• How does it get decided which unit a patient gets admitted to? Are their patient characteristics that play into the decision? What about hospital processes?</li><li>• How are you notified/how is the receiving team notified? When does notification happen?</li><li>• What do you need to know to take care of your patients? Could you give an example of a handoff or report you might give to a provider in another unit/floor? Tell me about your communication, if you have any, with the people who will care for the patient after he or she leaves your floor.</li></ul>

- How long does the process of transferring a patient take?
- What is expected of you as the sending provider/as the receiving provider?
- What do you expect as the sending provider/as the receiving provider?

What aspects of patient transfers work well?

- What types of transfers work well?
- Why? Who/What has contributed to that success?
- Can you give an example of a recent successful transfer?
- What makes a transfer successful?

What aspects of patient transfers don't work so well?

- What types of transfers are problematic?
- Why? What are the particular barriers to these patient transfers?
- Can you give an example of a recent problematic transfer?
- What makes a transfer problematic?
- Have you or any other team members addressed these concerns? How did you go about it? Who were the key players?
- If you have not addressed the issue, ideally, how would you go about fixing it?

Is there anything else you could share with me that might help me better understand these transitions of care?

- Do you see opportunities for improvement in the current process of transitioning care? If so, could you share them?

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