ORIGINAL ARTICLE

Organisational factors underpinning intra-hospital transfers: a guide for evaluating context in quality improvement

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ABSTRACT

During intra-hospital transfers, multiple clinicians perform coordinated tasks that leave patients vulnerable to undesirable outcomes. Communication has been established as a challenge to care transitions, but less is known about the organisational complexities within which transfers take place. We performed a qualitative assessment that included various professions to capture a multi-faceted understanding of intra-hospital transfers. Ethnographic observations and semi-structured interviews were conducted with clinicians and staff from the Medical Intensive Care Unit, Emergency Department, and general medicine units at a large, urban, academic, tertiary medical centre. Results highlight the organisational factors that stakeholders view as important for successful transfers: the development, dissemination, and application of protocols; robustness of technology; degree of teamwork; hospital capacity; and the ways in which competing hospital priorities are managed. These factors broaden our understanding of the organisational context of intra-hospital transfers and informed the development of a practical guide that can be used prior to embarking on quality improvement efforts around transitions of care.

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1. Introduction

Intra-hospital transfers, or the movement of patients between hospital units, include a change in physical location and the teams responsible for patient care. These transfers occur frequently and may put patient safety at risk by leading to delays in care (Johnson et al., 2013), interruptions in treatment (Papson et al., 2007), medication errors (Detsky et al., 2015), increased infections (Blay, Roche, Duffield, & Xu, 2017), and inappropriate unit placement (Blay Roche, Duffield, & Gallagher, 2017). Adverse events related to intra-hospital transfers can be used as markers of system failures but may not be reported or, when reported, descriptions often lack depth about underlying systems-level processes that caused the event to occur. Contributing to the complexity of patient transfers are the heterogeneous teams of care providers involved, as variety of disciplines and levels of staff experience may further hinder safe patient transitions. Prior work has shown that patient transfers within the hospital require multiple steps and staff to adjust their workflow to meet competing and complex demands (Haque et al., 2017). Circumstances that also impact patient transfers include the coordination of resources between hospital departments for bed assignments as well as an electronic medical record (EMR) that optimises patient information (Abraham & Reddy, 2010).

Hospitals leverage traditional quality improvement initiatives to improve work processes and promote patient safety, quality of care and staff satisfaction

(American Hospital Association, 2012; Studeny et al., 2017). Increasingly, qualitative methodologies such as interviews, focus groups, and ethnographic observations are utilised as data collection methods in health-care (Pope et al., 2002). These methods provide insightful data from staff perspectives that can help to form hypotheses, shape interventions, and highlight areas of opportunity based on participants' candid and specific work experiences. Furthermore, involving staff in quality improvement is more likely to foster ownership and acceptance of change in the workplace (Yazici et al., 2013).

We engaged hospital clinicians and staff from various backgrounds as key stakeholders to gain an understanding of intra-hospital transfers to general medicine units from either the Medical Intensive Care Unit (MICU) or the Emergency Department (ED). This strategy optimised our understanding of the hospital environment and organisational complexities that impact the intra-hospital patient transfer process beyond communication challenges between providers (Beach et al., 2012; Horwitz et al., 2009; Knight et al., 2015). Our prior work identified a comprehensive taxonomy that defined five categories of transfer activity: disposition (or patient, floor, and bed match); notification to enable planning; preparation to send and receive the patient; communication between sending and receiving units; and coordination (Rosenberg et al., 2018). The purpose of this paper is to expand the previously identified taxonomy to incorporate

organisational factors that impact patient transfers and create a practical guide for assessing hospital context and change readiness prior to and during work to improve transitions of care.

2. Methods

The project was conducted at a large, urban, academic, tertiary medical centre in the northeastern United States. Funding was provided by the Agency for Healthcare Research and Quality (AHRQ). The Institutional Review Board overseeing research at the project site reviewed and classified this work as quality improvement. Methods and results are reported in accordance with the Consolidated Criteria for Reporting Qualitative Research (Tong et al., 2007).

2.1. Data collection

A research associate (RA) experienced in qualitative methods conducted 31 hours of ethnographic observations, accomplished by visiting hospital units and shadowing a physician, nurse, or unit clerk for one to three hours each visit and taking open-ended field notes. Observations focused on the clinicians, staff, and work processes that supported the transition of patients arriving on or leaving the units. These findings informed the development of interview questions that were vetted and approved by team members.

Interviews were completed by the RA between April and September 2015. We used purposive sampling to reach hospital clinicians and staff ($n = 29$) involved in patient transfers, until thematic saturation was achieved and all individuals involved in the transfer process were represented. Participants were clinicians and staff actively involved in conducting or overseeing transfers from the ED and MICU to general medicine floors and included: physicians, advanced practice providers and leaders from the hospitalist and teaching services ($n = 13$); nurses and nurse leaders ($n = 10$); and administrative staff ($n = 6$). Participants' roles and service categories are listed in Table 1. Participants were asked to describe their role in the transfer process; perceptions of the process, including facilitators and barriers; examples of recent successful and unsuccessful transfers; and opportunities for improvement. Interviews averaged 35 minutes. Sample interview questions are listed in Table 2.

2.2. Context

Several dimensions of context were identified during observations, and were important in framing data collected during interviews. The hospital units were in separate areas of the hospital, and did not share staff between them. Most patients admitted from the ED to

Table 1. Participants.

Unit	Positions of Participants*
Emergency Department	Medical Director Attending Physician Resident Physician Nurse Educator Nurse Unit Clerk
Medical Intensive Care Unit	Medical Director Attending Physician Resident Physician Nurse Educator Nurse Unit Clerk
General Medicine Service	Hospitalist Leader House Staff Leader/Resident Programme Director Hospitalist Attending Physician House Staff Attending Physician Physician Assistant Resident Nurse Educator Nurse Manager Patient Safety Nurse Leader Nurse (2) Unit Clerk (2)
Hospital Administration	Handoff Committee Director Patient Relations Coordinator Bed Associate Bed Manager

* $n = 1$ except where noted

the general medicine floors required no specific verbal handoff between providers. Similarly, general medicine providers did not need to formally "accept" a patient from the ED provider, and patients were assigned a bed via a central bed booking team. Most information sharing between units was accomplished by way of an EMR that had been implemented two years prior.

Prior quality improvement work related to transfers was under the purview of a provider-run cross-unit committee, and did not include nursing or ancillary staff. This prior quality improvement work had addressed handoffs, but data focused on handoff thoroughness and process adherence, rather than hospital context, other transfer activities, or patient outcomes. The hospital had recently embarked on a process of assuring High Reliability Organisation training (Chassin & Loeb, 2013) for all staff, resulting in increased conversations about error prevention and quality improvement work. Aside from a few managers, staff had no formal training in quality improvement science.

2.3. Data analysis

Interviews were audio recorded, transcribed and entered into Atlas.ti 7 qualitative software (Scientific Software, Berlin, Germany) for data organisation and analysis. The constant comparative method (Patton, 2015) was used for data analysis. Three team members from the disciplines of social work, nursing, and public health developed and refined the coding structure,

Table 2. Sample interview questions for hospital staff involved in transfers from the emergency department or medical intensive care unit to general medicine.

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"> • What role do you play in transfers? • What are your responsibilities?
Tell me about the process of navigating the transfer from X floor to X floor within the hospital.	<ul style="list-style-type: none"> • What is the process? Can you walk me through the process? • What is your role in this process? • Tell me about roles of other team members and how you coordinate with them. • 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? • How are you notified/how is the receiving team notified? When does notification happen? • 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. • 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?	<ul style="list-style-type: none"> • 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?	<ul style="list-style-type: none"> • 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?	<ul style="list-style-type: none"> • Do you see opportunities for improvement in the current process of transitioning care? If so, could you share them?

separately coded each interview, and discussed each transcript during meetings. The entire research team reviewed the coding structure for face validity. Memos on themes and codes were saved in Atlas.ti. Once all

transcripts were coded, team members met to discuss emerging themes and organise findings. Meetings were then held with unit leaders, staff, and hospital management to discuss the interview results and get their input on data interpretations. These sessions were also instrumental to engage clinicians and staff as active participants in developing solutions for quality improvements affecting their work.

Following thematic coding, the study team met to translate the coding structure and findings into thematic organisation. The barriers and facilitators to process improvement work that were identified by interviewees were organised by theme (Table 3). This taxonomy was then validated with staff. Subsequently, the study team restated the taxonomy components as positive drivers and organised them for ease of reference. The drivers for quality improvement readiness in each taxonomic subcategory are available in checklist form in Table 4.

3. Results

Building upon previous work that defined transfer categories and explored relevant cultural themes (Rosenberg et al., 2018), the current results add several organisational factors of the hospital environment that participants viewed as important for successful intra-hospital transfers. These organisational factors include: protocol development, dissemination, and application; robustness of technology; teamwork; hospital capacity; and competing hospital priorities. Table 3 outlines the five organisational factors within the context of the previously published taxonomy of transfer categories. The transfer activities included in the taxonomy were: disposition (determining the right floor and bed for the patient), preparation (to send and receive the patient), communication (between sending and receiving units), notification (to sending and receiving staff of patient assignment), and coordination (ensuring that the transfer components occur in a timely and seamless manner). (Rosenberg et al., 2018) These tasks are dynamic and may occur in sequence or may overlap, depending on the processes adopted locally, and may impact/be impacted by each of the organisational factors described. Table 3 provides suggestions for improvement opportunities within each category of transfer activity, related to each organisational factor.

3.1. Organisational factors affecting the transfer process

Participants viewed transfers as complex, comprised of multiple processes, and identified several facilitators and barriers of successful transfers. Five distinct organisational factors that impact transfer success were identified.

Table 3. Examples of facilitators* and barriers at the intersection of transfer categories and organisational factors.

	Disposition	Preparation	Communication	Notification	Coordination
Protocol Development, Dissemination, Application	When a speciality service attending refuses a patient in the ED, the issue is usually not escalated to the leadership on duty, despite protocols dictating this process. Rather, the patient is often transferred to general medicine, as it represents the path of least resistance.	There is disagreement among providers about whether a care checklist in the EMR is a sufficient closure process to use before transferring patients.	A written, nonverbal nursing handoff tool was built into the EMR. Staff identified challenges with the new tool but were discouraged from addressing any concerns that would re-examine the decision to use verbal or nonverbal handoffs.	Each service line has a unique workflow for alerting the sending and receiving units about a bed assignment. Bed management must keep track of and apply these differing protocols when notifying teams about specific patient populations. The variations can be confusing and may contribute to mistakes.	The protocols for transfer timing are not aligned to ensure common understanding across departments: bed managers hold off on physician assignment as long as possible to try and balance the patient load among service lines, while the hospitalist providers request earlier assignment to help prepare for patient care.
Robust Technology	The admission order has fields that highlight specific patient needs, like isolation and telemetry. When the order is fully completed, the bed manager can assign the patient to the right unit the first time.	If the treatment team fills out the care complete checklist too early, patients may be transferred before the preparation process is complete. Patients can miss their last doses of medication or may not have their vital signs checked before leaving the unit.	The transfer summary is buried three to four pages into the daily nursing note. Those preceding pages are automatically populated by the EMR and contain information of varying utility.	Consistent notification is hampered by the range of devices in use, including a single admissions pager, individual cell phones, and automatic alerts within the EMR.	The nurse expeditor can use the care complete checklist in the EMR to determine when patients can be transferred, which facilitates patient flow.
Culture of Teamwork	Residents and interns rotate through different departments, which gives them an understanding about which types of patients are appropriate for each unit.	The receiving team has an understanding of the patients they will receive because the medical director participates in interdisciplinary rounds on the sending unit.	Each hospital team views the patient through a different framework, whether it be trauma care, general medicine, and speciality services. Recognising and reconciling these differences is an enormous concern for providers.	Unit clerks from sending units call bed management to share pertinent information that may not be included in the admission order.	There is an erroneous belief that sending staff wait until change of shift to transfer patients to delay receipt of new patients. This perception fuels tension between departments.
Capacity	When MICU census is high, the least sick patient is transferred to General Medicine to free up a bed for a more critically ill patient.	The patient is transferred to an appropriate location that has the supplies and equipment needed for care. These can include isolation rooms for patients on contact precautions or bariatric beds and lifts for obese patients.	Transfer reports from residents often require more time and effort from receiving providers, as the residents have less experience and are still learning how to present cases and triage patient care.	Late or missed notifications about General Medicine patients boarding in the ED can lead to delays in care.	There are more admissions on the evening shift, which is also when there are fewer staff scheduled and less resources available to those staff.
Hospital Priorities	The hospital has prioritised reducing length of stay in the ED, by giving ED the authority to book a patient to general medicine without approval, leaving general medicine providers unable to question admissions or patient dispositions.	Sending teams focus on triaging patients and managing acute crises; these priorities are often in conflict with receiving teams' emphasis on a deeper understanding of patient needs, and their desire for more diagnostic work in preparation for the transfer to the floor.	The hospital has eliminated many verbal handoffs to increase efficiency and improve patient flow. Nonverbal handoffs, which are completed through the EMR, often impede questioning from receiving teams.	Geographic localisation of staff is prioritised over continuity of care. Patients transferred to other units for speciality services or brief escalations of care are often returned to different general medicine floors.	Patient transport is coordinated through prompts from sending units. Receiving teams can be assigned multiple admissions at the same time, which increases the risk of safety events.

*Facilitators are in bold.

Table 4. Quality improvement guide to assess hospital context for transitions of care.

Healthcare professionals developing quality improvement efforts can use the following checklist to assess the organisation's context prior to designing and implementing projects around transitions of care. Comparing the organisation's current context to the items in the checklist can help determine priority areas for quality improvement.

Protocol Development, Dissemination, Application

- A protocol defines the work process for staff.
- Sufficiently detailed information in the protocol ensures common understanding across users.
- Staff who use the protocol receive training that provides a comprehensive overview of the protocol and any amendments.
- Input from all involved departments is reflected in the protocol.
- Protocols are updated on a regular basis and representative stakeholders participate in new protocol development.
- Checks are in place to ensure protocol compliance.
- One consistent process across departments supports team coordination.

Robust Technology

- Technology exists to support the protocol.
- Technology addresses specific patient needs.
- Technology complements staff workflow and communication.
- Technology development and rollout involves representative stakeholders.
- A staff champion helps ensure technology is adopted and sustained.
- A process is followed to review staff feedback pertaining to the technology and to make relevant changes.

Culture of Teamwork

- Medical directors participate in interdisciplinary unit rounds.
- Staff shadow on other units to learn about other unit challenges and priorities.
- A forum exists for staff to review and discuss adverse patient care events. Staff are familiar with this forum and encouraged to use it.
- Resources support staff to work on quality improvements to their workflow.

Capacity

- Staff resources and hospital policies are optimised to accommodate patient flow.
- Resources and policies are adjusted to help staff manage workload.
- Staff are incentivised to provide creative ways to solve capacity issues.

Hospital Priorities

- Tracking systems detect unintended negative consequences of hospital policies.
- Staff feel empowered to raise concerns about hospital priorities.
- Hospital and unit leadership regularly communicate to staff the importance of safe patient care and positive staff experience.

3.1.1. Protocol development, dissemination, application

Transfer protocols with adequate detail, collaborative staff development, and dissemination were seen as key, but lacking. The complexity of the transfer process coupled with the multi-departmental setting made protocols less effective if not crafted from multiple perspectives. For example, a protocol existed where general medicine hospitalists were responsible for assuming care of ED patients four hours after the admission order was entered. Although this protocol was designed to optimise patient flow in a busy ED, the hospitalists felt that this four-hour requirement was problematic because it did not provide them with sufficient time to be alerted about the patient and assume care.

Even when transfer protocols were developed and adequate, participants described a lack of knowledge about the details, such as the role of the unit clerk in the process or the nursing capabilities on general medicine floors. Ineffective protocol dissemination, staff training, and protocol enforcement within the hospital environment were cited as reasons that staff did not follow protocols. An ED physician and quality improvement leader said, "I think what's important ... is when you want to make a change somebody's got to be out there 24/7 making sure people understand how to do it and are doing it ... I like to think of it as octopus management. Somebody from the management team always around to see how are things going. Making sure people follow decisions that were made, but also listen to feedback."

3.1.2. Robust technology

The scope of technology available to individuals involved in the intra-hospital transfer process was viewed as a strength and challenge for effective patient transitions. The shared EMR replaced verbal handoff for many non-critical patient transitions in this institution, and the availability of the full patient chart was a handoff facilitator that allowed multiple providers to have access to detailed patient history and treatment plans. Still, the EMR was not always described as a useful transfer tool. For example, one physician thought nursing transfer notes written in narrative form were a repetition of information easily found in other parts of the EMR, and others acknowledged that the EMR workflow was not optimised or standardised for communicating psychosocial issues.

Participants described other challenges with technology, including connecting the key people involved in patient transfers; variation in EMR workflows between units; the need to create technology that supported transfers across multiple sites; and finding the balance between maximising the uses of technology while acknowledging its limitations. Information from the EMR was seen as an untapped resource for driving effective change. Yet an ED physician cautioned against an over-reliance on technology, such as when ED residents waited for diagnostic imaging results before making disposition decisions, unnecessarily slowing transfers down.

3.1.3. Culture of teamwork

Transfers were seen as facilitated by teamwork and empathy across units. Teamwork was linked to the degree of familiarity with other units, competing priorities between units and specialties, and hospital management. Participants with experience or knowledge of daily life in other units expressed compassion for their colleagues. On the other hand, participants noted that some staff lacked awareness of intra-hospital transfers from the perspective of other departments. An ED nurse educator described the ED nurse perspective, “They’re stuck in the ED. They’re not thinking about what that medicine nurse is dealing with . . . They almost are like, “ . . . I’m in my groove. I do my thing. The patient’s supposed to go upstairs. You got to take the patient. I don’t care what your day is like.” Those are the kinds of things where you just get frustrated, because you’re like, and “It’s another person! It’s another nurse! They’re just like you!” Another nurse discussed a particular change in hospital context, where verbal report ceased and initial empathy was demonstrated by avoiding transferring patients at change of shift, but later deteriorated. The nurse stated, “They just sent the patient up and that was a hard period of time. I mean there was a time when they wouldn’t send a patient up at change of shift, and then there was just, “No, we’re sending them up whenever.”

In the highly departmentalised structure of the hospital, each unit had distinct priorities that differed with the priorities of other units, and misaligned priorities played out during transfers. For example, ED staff viewed their primary task as lifesaving rather than diagnostic. General medicine physicians were sometimes frustrated when patients were not thoroughly evaluated in the ED. The sense of teamwork across the hospital was viewed as influenced by structural forces, including financial pressures, incentives, and management decisions. Feelings of fear, disempowerment, or disrespect sometimes prevented the teamwork needed for successful transfers.

3.1.4. Capacity

Participants viewed the capacity of the hospital to carry out its mission to care for patients as fundamentally tied to the resources available, including physical capacity and number of beds, and human resources, in terms of both personnel numbers and skill. Participants emphasised that the rising specialisation of medicine brought an increased capacity to care for patients clinically, but resulted in more transfers, disrupting continuity of care for patients. In discussing why general medicine nurses are sometimes quick to transfer patients to the intensive care unit, a MICU physician explained, “the comfort level with anybody who is remotely ill has gone down. I think in the older days . . . people were used to taking care of those next

level of sick. Now that they’re all in the MICU I think the comfort has gone down.”

There was a feeling among nurse and non-nurse respondents that nurses were always operating at maximum capacity since staffing is based on census. The same MICU physician noted, “Often times . . . you’re sending somebody to a very busy service. You know that you’re adding a fair burden of work. I think the things that go wrong with transfers . . . people are sort of at their max. If you push them over that max it goes bad quickly.”

3.1.5. Competing hospital priorities

Finally, transitions of care made apparent many conflicting priorities of different staff members at the hospital, and the way these were resolved or contested. First, individual patient safety was the goal for providers and the language of most hospital quality improvement initiatives. Yet providers and hospital administrators were sometimes forced to make decisions that affected multiple patients simultaneously even when the patients’ individual needs were not the same. For example, a MICU physician may have had to send a more stable patient to the floor to make room for a more critically ill patient recently admitted from the ED. Second, the decision to provide continuity of care was tempered with the need to localise hospitalists so they could feasibly manage heavy patient loads. Participants shared a successful example of incorporating both priorities into protocols for the hospitalist service, giving staff clarity in their daily work. Third, participants expressed a tension between initiatives that were driven by hospital administration versus frontline staff. These initiatives were sometimes complementary but often conflicted, leaving frontline staff feeling stifled. For example, changes to the EMR had to be approved for relevancy across several hospitals within an overarching health system, and then given a priority level within the queue of change requests, making it cumbersome for unit staff to design features to maximise the EMR’s utility. An ED nurse comment summarised the impact of competing priorities, “Ultimately, it’s the patients who are the ones who are sorta stuck in the middle of this, the decision-making of clinical course and clinical care. It’s unfortunate that they are.”

3.1.5.1. Quality improvement. These organisational factors provide a way to examine the intra-hospital transfer process. Table 3 provides staff examples of facilitators and barriers related to the organisational factors we identified. Creating a list of facilitators and barriers within each transfer category offers a comprehensive view of the transfer process and helps to identify areas to focus quality improvement efforts. Building from the organisational framework

identified during analysis, we developed a practical guide to help hospitals design successful transfer improvement projects. The guide includes organisational context items to consider and address prior to implementing quality improvement efforts (Table 4). A hospital could implement the guide before starting a transfer improvement project to assess the current organisational context and help prioritise focus areas for improvement opportunities.

At the project's host centre, results of the current project led to an inventory of feasible opportunities to improve intra-hospital transfers. These opportunities represented many of the key drivers utilised in creating specific improvement intervention plans. Delivering this guide to stakeholder staff engaged in the desire to improve transitions of care provided clear ideas around needs for cultural preparedness and actionable interventions. For example, in review of our quality improvement guide, staff identified a gap in "protocol development, dissemination and application" related to "sufficiently detailed information in the protocol ensures common understanding across users". A general medicine nurse commented that "We don't always ... if your care is escalating to a higher level, usually that's when you kind of get report. If they're kind of down escalating, you don't usually get report", demonstrating the variability in practice. Nursing staff developed a project to improve nurse readiness to receive MICU patients with high acuity or complex social needs (e.g., complicated gastro-intestinal bleeds, patients in restraints). To address the identified cultural concerns, MICU nurses, general medicine nurses, and nurse leaders jointly developed and implemented a verbal handoff. A new protocol was implemented that mandates a three-minute phone call from the MICU nurse that consists of a brief alert to the patient's special circumstances and allows the receiving nurse to ask questions. General medicine nurses reported increased preparedness to receive patients after the intervention.

4. Discussion

Results of the current work led to the creation of a guide to help equip intra-hospital transfer quality improvement efforts to enhance patient safety and staff experience of work processes. Context is an important element in planning and reporting quality improvement interventions according to the widely accepted Standards for Quality Improvement Reporting Excellence (SQUIRE) (Ogrinc et al., 2016). An important consideration in evaluating organisational context prior to quality improvement is determining the facilitators and barriers of processes. Based on the current work and the taxonomy of intra-hospital transfers published previously (Rosenberg et al., 2018), the practical guide we present here can

serve as a resource to evaluate context as a hospital develops a transfer improvement project. Although the guide was created from a quality improvement project around patient transfers, it provides a structure to identify opportunities for improvement and offers elements to consider and address when developing sustainable quality improvements in hospitals.

We identified characteristics of the hospital context that hospital leaders, physicians, nurses and ancillary staff viewed as important for patient transfer success: the development, dissemination and application of protocols; robustness of technology; degree of teamwork; capacity; and the ways in which competing hospital priorities were managed. The results expand upon previous findings as these organisational factors impact the effectiveness and efficiency of the five categories of intra-hospital transfers and have important implications for patient safety (Rosenberg et al., 2018). Previous research on patient transfers has examined the communication aspects of handoffs at change of shift within units (Foster & Manser, 2012; Schouten et al., 2015; Starmer et al., 2014) or between units by providers of the same role (e.g., physician to physician) (Detsky et al., 2015; Li et al., 2013; Riesenberget al., 2010, 2009; Smith et al., 2015; Staggers & Blaz, 2013). Our findings support and build upon the findings of Abraham and Reddy (2010), who identified ineffective inter-department interactions, lack of information pertaining to handoffs, and information technology as barriers to successful transfers. Similarly, their emphasis on coordination in transitions of care highlights the need to capture the complexity of context across multiple units to drive improvement (Abraham & Reddy, 2008). Hilligoss and Cohen (2013) expand on this complexity, describing the differences seen in inter-unit care and communication, inclusive of power differentials and lack of established relationships. Clearly, transitions of care are an area of quality improvement unlike those limited to a single unit.

To better understand the context of intra-hospital transfers, we incorporated the views of hospital leaders, physicians, nurses and ancillary staff from various specialties within the scope of intra-hospital patient transfers. This multi-faceted approach to studying transfers offered insights directly from the staff who experience the processes in their daily work. As described by Haque et al. (2017) transfer of care processes involve not just those making policies, but those at the front lines. Understanding the context of standard practice is an important aspect of process analysis. The quality improvement guide we propose may be used to advocate for improvement in contextual factors that affect safety during transitions of care.

Mannion and Smith (2017) posited that efforts to improve hospital culture can contribute to the success

of quality initiatives that aim to improve patient outcomes. In a mixed methods intervention study spanning ten hospitals, Curry et al. (2017) found that hospitals with improved organisational culture survey scores also had better mortality rates for patients with acute myocardial infarction. Contextual factors associated with hospital culture improvements were senior management support, fostering a learning environment, and staff perceptions of safety. Despite the acknowledgement of context in influencing the success rates of quality improvement projects in healthcare, a systematic review found that the reporting of contextual factors was lacking in the literature (Kringos et al., 2015). The authors conclude that future quality improvement interventions should track contextual factors to better understand how these unique variables impact success.

In direct relation to this need to understand context prior to initiating quality improvement work, several universal context assessment guides have been developed. Ideally, practical tools based on evidence can help to achieve assessment of “readiness for change”, as recommended by the Agency for Healthcare Research and Quality (Knox, 2010). For example, the Model for Understanding Success in Quality (MUSIQ) is a universal, consensus-derived approach to evaluating the complex webs of context in quality improvement work (Kaplan et al., 2012), but it was not developed with multiple unit transfers in focus. Other implementation guides (Damschroder & Lowery, 2013) have been developed that consider context, but have occasionally been rated as complex by users, or are focused on traditional implementation science (Rycroft-Malone, 2004) rather than quality improvement. Fulop and Robert (2013) reviewed the literature surrounding context in quality improvement, identifying common themes of supportive culture, quality and coherence of policy, and environmental pressures. They identified gaps in science around the modification of contextual factors in the evaluation of project success. Our work adds an evidence-generated guide that could make this possible. While there are existing guides available to assess context, we sought to create a guide with a specific focus on the improvement of transfers, that is both simple to use and focused on quality improvement rather than implementation science. Grassroots quality improvement work done by frontline stakeholders may be different in needs from traditional implementation science (Lane-Fall & Fleisher, 2018). Our quality improvement guide offers frontline project leadership staff access to a context assessment tool in their everyday improvement work.

Our findings have implications for hospital administrators, clinicians, and staff who are leading initiatives designed to improve the quality of patient care at their organisation. Developing a quality improvement

project involves identifying the appropriate team composition with representative roles and stakeholders, choosing the improvement model and project objectives, and defining the outcomes that will demonstrate success (Silver, Harel, et al., 2016). Based on our findings we developed a practical guide that takes context into account when designing and implementing quality improvement projects, particularly in the complex area of inter-unit transfers of care. This straightforward guide helps to identify priority areas to focus improvement efforts within the contextual hospital framework that emerged from our analyses. Applying a context assessment guide developed from evidence and specific to the quality improvement challenge in question aided in the rapid generation of improvement ideas and encouraged participation from non-quality trained frontline stakeholder staff.

Used prospectively, this guide has possibility to evaluate transition quality in a variety of settings. Reviewing specific transitions of care (for example, between the intensive care unit and each receiving medicine unit) may identify cultural variation in transitional care. These differences may highlight the need for improvement work to be done, or shine light on cultural/contextual strengths that may be adopted in other care transitions. While our examples provide insight into how this guide was utilised in our setting, hospitals may find other ways to operationalise it. For example, it may be utilised by existing improvement teams to optimise their approach to transitions, or adopted to assess and initiate cultural changes before initiation of improvement work.

Although our data represent the perspectives of multiple staff roles supporting intra-hospital transfers, the findings may not generalise to other institutions. To engage ancillary support staff and broaden the scope, bed management staff were interviewed. Future research should capture data from other hospital departments who support patient transfers, such as housekeeping and transport. Staff experience of intra-hospital transfers was the study focus; therefore, all participants were hospital staff by design. Feedback from patients on their experiences of transferring within the hospital would likely offer additional, invaluable insights.

5. Conclusion

Intra-hospital patient transfers pose challenges to multiple hospital clinicians and staff and can put patients' safety at risk. The qualitative methods used in this study provided clinician and staff insights into the hospital context they deemed important to successful transfers. Incorporating this input and creating ways in which staff from multiple departments can work together are key to quality improvement success and can drive effective efforts towards patient safety.

Results led to the development of a practical guide for quality improvement projects aimed at improving staff experience and patient safety around transitions of care. It is our hope that future projects focused on improving transitions of care will apply our proposed guide for further refinement and testing.

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