Reducing Hemolysis—from the Emergency Department to Hospitalwide

Features

Performance Improvement
- Using Lean-Six Sigma to Reduce Hemolysis in the Emergency Care Center in a Collaborative Quality Improvement Project with the Hospital Laboratory

Adverse Events
- Monitoring the Harm Associated with Use of Anticoagulants in Pediatric Populations Through Trigger-Based Automated Adverse-Event Detection

Teamwork and Communication
- Enhancing the Effectiveness of Team Debriefings in Medical Simulation: More Best Practices

Methods, Tools, and Strategies
- Development and Evaluation of an Electronic Health Record–Based Best-Practice Discharge Checklist for Hospital Patients

Departments

Forum
- Editorial: Crawling Before Walking: Beginning to Understand How Clinicians Communicate and Behave During Interunit Handoffs
- Collaborating—or “Selling” Patients? A Conceptual Framework for Emergency Department–to-Inpatient Handoff Negotiations
Handoffs that occur between units—such as admission handoffs between an emergency department (ED) and an inpatient unit—have received little attention in the burgeoning literature on patient handoffs. Yet such transitions are consequential in the care of vast numbers of patients. For example, despite the fact that half of all non-obstetric hospital admissions in the United States come through an ED, an extensive study of the handoff literature found that ED admissions were the subject of only 9 of more than 640 published items. Studies of within-unit handoffs, including shift and rotation changes, have dominated handoff research efforts, but there are limits to the applicability of such studies for improving between-unit transitions. Because between-unit handoffs entail the interaction of different specializations; the coordination of care across unit boundaries; and, typically, the physical movement of the patient, such transitions encounter a host of unique social and organizational factors not frequently involved in within-unit handoffs. For example, different medical or surgical specialists use different terminologies and orientations toward illness and treatment plans, thereby hindering communication efforts. Further complicating interactions are tensions, power imbalances, and stereotyping among health care specializations or patient care units and the infrequency of existing established relationships. In addition, organizational structures—such as routines, physical and communication infrastructures, and divisions of labor—feature prominently in such transitions, and yet the influence of such structures has not been fully investigated.

If we are to make progress on between-unit handoff research, however, we must enrich the conceptual frame through which we examine such transitions. The tendency to frame handoff as an information transmission activity alone has led to a focus on identifying “essential” information, measuring the accuracy and completeness of information transfer, and instituting information standardization protocols, including mnemonics and checklists, which become hardwired patient safety tools. Consequently, other possible framings of handoff have been underexplored. It is not surprising, then, that the influence of larger organizational structures and social factors has received little attention.

One potentially useful framing is negotiation. Authors of a small number of studies have noted that handoffs between ED and inpatient services can involve negotiations regarding the admitting and placing of patients within hospitals. For example, in a report of ED admissions work at two Australian hospitals, Nugus and colleagues found that ED physicians were pressured to “sell” admissions in the sense that they had to persuade inpatient staff to accept patients onto their services. Nugus et al. argue that effective selling involves minimizing or maximizing aspects of the patient’s case and sometimes emphasizing organ-specific concerns of particular specialties. In research in which we used automated natural language processing of handoff transcripts, we found that handoffs between the ED and inpatient setting had different communication content and strategies than ICU resident physician sign-outs. Regarding content, there was less discussion of prognosis and the plan of care in the ED as compared to the ICU handoff. These elements are likely less important when the focus of the discussion is on negotiating placement in the ICU rather than supporting continuity of care provision. Regarding strategies, there was more critical questioning of the accuracy of diagnoses and prognoses in the ED than in the ICU handoff. This is consistent with the notion that ED physicians need to “sell” admissions and with ICU personnel responding with a critical inspection of the justification for the need for ICU placement. To highlight new avenues for handoff coordination improvement, further research is needed to examine the dynamics of handoff negotiations between ED and inpatient units and to identify the range of social and organizational factors that shape the dynamic and complex nature of these transitions of care.

When the goal is to explore underdescribed phenomena, generate conceptual frameworks, and identify areas for further research, qualitative methods are particularly advantageous.
One author [B.H.] conducted a two-year (January 2009–March 2011) ethnographic study of physicians’ admissions work at “Memorial Hospital” (pseudonym), an adult acute care, tertiary teaching facility located in the United States. That study entailed interviews (N = 48) with and observations (349 hours) of resident and attending physicians in the ED and general internal medicine residency and hospitalist services, as well as, recorded handoff conversations (N = 48) between ED and general medicine physicians.22 Elsewhere, we have reported a discourse analysis of the metaphors that physicians used to make sense of handoff interactions.18 Underlying these metaphors were four interpretive or conceptual frames: handoff as persuasion, handoff as competition, handoff as expectation matching, and handoff as collaboration. Each of these interpretive frames draws attention to the complex, socially interactive nature of handoff, highlighting the fact that such transitions are embedded within and shaped by a variety of organizational and social structures and processes. In short, physicians’ metaphors suggested that between-unit transitions are plagued by far more than information-transmission challenges and that improving those transitions would require expanding and enriching our conceptual framing of handoffs to incorporate the influence of organizational and social factors.

In this article, we build on the implications of the discourse analysis by proposing a conceptual framework of ED admission handoffs that highlights the myriad social and organizational factors that can shape these interactions. The framework is intended to deepen our understanding of such between-unit transitions and to serve as a tool to guide thinking about handoffs and stimulate new improvement efforts.

**Conceptual Framework of Handoff Negotiations**

A discourse analysis of the metaphors that physicians used to make sense of handoff interactions revealed two alternative perspectives on negotiations.18 On the one hand, these negotiations are competitive zero-sum games. Physicians described some interactions as fraught with conflict, characterized by discord stemming from competing goals of the involved parties. ED physicians were said to “sell” patient admissions: “spinning” stories or “overselling” patients, to persuade inpatient units that particular admissions were appropriate for those units. In response, inpatient physicians were said to “push back” against such selling by “punting” those admissions to other services or simply by “blocking” the admission from their service. From this perspective, involved parties, typically lacking established relationships, distrusted one another and relied on stereotypes to interpret each other’s motives or competence. Participants believed that the competitive nature of these interactions, combined with pressures to argue persuasively, could at times produce environments in which data anomalies were downplayed, confidence overstated, and patient cases misrepresented. In zero-sum handoff negotiations, the winner is the one who either argues the most persuasively or who effectively mobilizes institutional power to achieve a desired outcome. As one ED attending stated, “It doesn’t necessarily mean the patient goes to the best service, but maybe just the weakest personality caves.”

Alternatively, admission handoff negotiations were also characterized as collaborations. In this view, handoff parties were described as cooperating, bringing their various experiences and expertise to bear on the patient’s case to arrive at a shared understanding and a mutually agreeable disposition plan. These interactions approach negotiation as win-win scenarios, focused on providing patient-centered care. Physicians reported that in these handoffs, ambiguity may be acknowledged as a normal, unavoidable aspect of a case. Involved parties know it may not be possible to answer all questions or resolve all uncertainties before transition occurs. Thus, parties in these interactions did not necessarily see ambiguity as evidence of cases being “under-worked-up.” From this perspective, an honest, open exchange of information creates a situation in which ambiguity can be safely managed and responsibility appropriately handed over in a way that ensures high-quality care and efficient use of resources. In short, these interactions involve a “meeting of minds,” in which, by reason of the differences of training and daily experiences, parties are able to share alternative perspectives and promote learning.

These two views of admission handoff negotiations should be thought of as extremes on a continuum. Many admission handoffs may lie somewhere in between, displaying some characteristics of each extreme. The goal, then, is to identify and address those factors that will move the average handoff in the direction of collaborative, patient-centered exchanges. Toward that end, we propose a conceptual framework (Figure 1, page 136), constructed from our analysis of empirical data. The framework demonstrates the organizational embeddedness of between-unit handoffs, thereby drawing attention to the myriad contextual factors—the macro, structural, and negotiation contexts—that shape those interactions.

**Actions**

Action is the micro level of the framework: what people say and do. This level includes the transfer of data and information about the patient, which has been the primary focus of re-
search that has analyzed handoffs as information transmissions. However, because our intent is to identify the influence of social and organizational factors, we highlight interpersonal interactions and the larger trajectories of action in which those interactions are embedded.

**Handoff Interaction.** Handoff negotiations are accomplished through chains of actions and responses as the involved parties work out the transition of responsibility and control. Although an analysis of roles (that is, the party handing off and the receiving party) provides some insight into the dynamics of interaction, to appreciate the situatedness and contributors to variation in interactions due to social and organizational factors, attention must be paid to the ways in which individuals position themselves in those interactions. Through language, individuals consciously and unconsciously position themselves, each other, and third parties, including patients and staff on other services of the hospital, in terms of intentions, power, identity, or other social relations. In so doing, they define the situation in particular ways, implying what actions are possible (or not), appropriate (or not), and what structures enable or constrain actions. They accentuate certain features of the situation or patient case while deemphasizing others. Through language, parties also position themselves as more or less open to collaboration and different perspectives, as more or less willing to consider alternative approaches to disposition.

In addition, how the parties handle ambiguities in the patient’s case, including anomalies in data, can shape the interaction. When parties focus on information that supports their interpretation and downplay or omit information contradicting that interpretation, they contribute to the production of situations in which others are under- or misinformed and, therefore, potentially less able to bring their own expertise to bear. On the other hand, when parties acknowledge that aspects of time is required to confidently diagnose or know the severity of the case, they open up handoff conversations to more interactive exchanges. When they invite other perspectives and present, rather than obscure conflicting evidence, handoff parties invite a “meeting of minds” and encourage the use of the full intellectual resources at hand. Such an approach to interaction is consistent with high reliability organizations, in which actors eschew simplistic explanations of complex phenomena and actively solicit divergent opinions.

**Action Trajectories.** Trajectory, a sociological concept, refers to the course of any experienced phenomenon (for example, an illness, a project, a shift or rotation) as it evolves over time. The concept is useful for guarding against static views of phenomena that are in fact temporal and unfold in ways that are neither fully predictable nor fully manageable because other processes and actions can intersect and alter an evolving trajectory.

By incorporating action trajectories, the framework calls attention to the fact that handoffs are situated in ongoing flows of action, in which previous, as well as anticipated subsequent,
events and other intersecting hospital work processes influence the handoff interaction. These events and processes may be related to the handoff or may pertain to other activities happening simultaneously. The point at which a given handoff occurs within an action trajectory can shape interaction quality, exerting greater or lesser pressures to engage in selling and pushback. For example, as a consequence of pushback, some initial attempts to hand off a patient were unsuccessful, and additional attempts had to be made to other services. Each subsequent attempted handoff was, to some extent, influenced by the previous attempt(s). For example, ED physicians sometimes became frustrated and, therefore, apparently more likely to engage in selling or, inadvertently, to retell patient stories in less detail. Similarly, the number and nature of previous within-unit shift handoffs of the patient and the various care and diagnostic efforts already attempted appeared to shape how well the party handing off understood the case and was able to answer questions or articulate concerns. Likewise, anticipating future events, such as shift change, often motivated parties to sell or push back more forcibly than otherwise to avoid delays or conclude work before leaving.

Negotiation Context

Much of the positioning work in the handoff interaction can be understood as efforts to address the highly variable properties of the negotiation context in which that interaction occurs. The data suggest six variable properties that shape this context: (1) the relative acuity and complexity of the patient’s case, (2) the nature and quality of the relationship among handoff parties, (3) the relative distribution of power among handoff parties, (4) the disciplinary perspectives represented in the handoff, (5) the nature of the communication media, and (6) the influence of third parties.

1. The relative acuity and complexity of the patient’s case influences the ease with which the party handing off can compress and convey it and the receiving party can process and comprehend it in order to compare it to the needs of patients currently in the unit.22,27,28 With greater complexity, such as comorbidities and ongoing treatment regimens, comes increased ambiguity. This, in turn, opens up a greater number of interpretations of the case, and thus, potentially increases opposition to the disposition plan. Access to patient medical history enabled by electronic health records can help parties on both ends of the handoff assess the acuity and complexity of the case collaboratively. However, the complexity of many patient cases makes it challenging to review extensive notes and assimilate information into a shared understanding of the patient’s case, particularly given competing work demands.22 Furthermore, determining the relative acuity of any given patient case may entail consideration of current or anticipated unit conditions and available resources, as well as the needs, acuities, and complexities of other patients. For example, the extent to which a particular ICU patient may be deemed “bumpable”—that is, ready to be moved out of the unit to make room for a new admission from the ED—is shaped by a host of considerations beyond characteristics inherent to the patient case.27 Thus, when patient care units are full, or nearly so, negotiations over admissions are likely to be further complicated by the decision making required to sort through case complexity, determine relative acuity, and allocate limited resources. Consequently, pressures to sell and push back likely increase as patient complexity increases. This suggests a troubling possibility: Handoffs that could most benefit from collaboration are the very interactions that are most likely to involve noncollaborative behaviors.

2. The nature and quality of the relationship among handoff parties can vary immensely, influencing the interpersonal aspects of interaction and the social resources available. The nature of these relationships can range from nonexistent to known-by-reputation-only to well-established on the basis of previous personal interactions. The quality of these relationships can also vary from highly positive to neutral to highly negative. Positive, well-established relationships provide invaluable resources for overcoming many of the other potential challenges to effective handoff. Such relationships automatically endow the interaction with a considerable degree of trust, respect, and friendly rapport, fostering collaboration. In such situations, parties have vested interests in protecting reputations and the quality of these established relationships. On the other hand, when relationships are nonexistent, parties do not have the resources of trust and mutual respect—at least not beyond what their professional roles might provide. In such instances, parties must “read between the lines” to get a sense of the thoroughness, competence, and motives of handoff partners. Similarly, when personal relationships are neutral in quality (for example based on only a few, vaguely recalled interactions), the influence of relationship on the handoff is likely to be minimal. Finally, where previous unpleasant interactions have resulted in negative relationships, not only will parties lack social resources, they will also likely be predisposed to presume the worst about their handoff partner’s motives or competence. Consequently, we may expect the parties to begin their interactions from offensive or defensive positions, increasing the potential for turning negotiation into a zero-sum game.

3. The relative distribution of power among handoff
parties can vary from one interaction to the next. In simplest terms, three distributions are possible: (1) asymmetrical in favor of the party handing off, (2) symmetrical, and (3) asymmetrical in favor of the receiving party. The variations in distributions of power are seen in the different possible mixes of hierarchical statuses. The balance is further affected by the relative distribution of power among the units represented. For example, a handoff between the ED and an inpatient service, such as Surgery, that has the formal authority to refuse an admission has a different power dynamic than one between the ED and an inpatient service, such as General Medicine, that does not have such authority. The former is asymmetrical in favor of the inpatient service, while the latter is asymmetrical in favor of the ED. The exact distribution of power in any given handoff will entail interplay of hierarchical status and unit prestige. Furthermore, how the power distribution actually influences interaction may depend on how parties position themselves, including the extent to which they exert whatever power they have or yield to any power to which they perceive themselves subject.

4. The disciplinary perspectives represented in the handoff can vary from one instance to the next, influencing attention and communication.\(^5\)\(^-\)\(^7\) For example, emergency medicine clinicians tend to be focused on identifying and addressing urgent and life-threatening acute conditions, whereas internal medicine clinicians tend to be focused on the more expansive longer-term work of identifying and treating the underlying causes of both the acute as well as chronic illnesses.\(^5\) Similarly, subspecialists are often oriented toward single disease states, while generalists may not be.\(^7\) This is not to say that clinicians of one specialty or profession do not understand or attend to matters beyond their specialty or profession, but rather that by virtue of their training and daily work, clinicians of different professions and specialties possess perspectives and expertise that can cause them to approach illness, treatment, and communication about patients in different ways. Thus, the involvement in the handoff of different specializations can complicate communication processes, and assumptions that members of one specialty may hold of another can predispose them to anticipate selling or pushback and, thus, to enter the handoff already on the defensive or offensive. On the other hand, when parties are appreciative of the perspectives of other specializations, the mix should lead to richer collaboration and foster resilience as those different perspectives are brought to bear on the case.

5. The nature of the communication media used to coordinate the transition may vary among handoffs,\(^29\) so media may also be considered part of the negotiation context. Most of the admission handoffs we observed were heavily dependent on telephone-mediated conversations, as is common at many institutions\(^8\); however, alphanumeric paging systems and electronic health records were also regularly used. In a small minority of cases, parties actually communicated face-to-face. The media used in an interaction affect the abilities of parties to communicate complicated information clearly, to establish common ground, and to resolve interpersonal differences.\(^30\)-\(^33\)

6. The influence of third parties can also shape the interaction, even though handoff conversations frequently involve direct interaction between two parties. Intentionally or not, third parties, who typically are not present for the handoff itself, are sometimes inserted into interactions, potentially complicating negotiations. For example, residents on either end of the handoff occasionally felt pressured to represent the wishes of their attending physicians, even when they themselves did not fully agree with them. Similarly, patients’ and families’ wishes, such as wanting a hospital admission, entered into decisions and provided part of the rationale behind some admissions.

In some cases, it is the perspective of a “generalized” third party, rather than of a specific individual, that is introduced into the negotiation. For example, internal medicine physicians sometimes introduced concerns that certain admissions (for example, a patient receiving high dosages of a benzodiazepine drug intravenously) would place undue strain on nursing resources. Typically, these third parties are directly available to only one handoff participant, which creates asymmetries of information and relative power. Interactions may be further complicated when the actions of third parties, such as nursing supervisors, charge nurses, and bed placement or patient transfer center staff, are involved in decision processes. If the third parties’ role in shaping the disposition is not made explicit in the handoff, the potential for ambiguity increases, as clinicians may have more difficulty defending a decision of which they are not personally convicted. However, declaring that a particular disposition is “what the attending wants,” for example, can have the effect of shutting down further collaborations, given that the party whose will is being upheld is not present in the conversation.

**Structural Context**

The structural context is composed of organizational structures that shape the contours of the negotiation context; however, whereas the negotiation context properties can vary considerably from one handoff to the next, the structural context is more stable. We describe five properties: (1) the divisions of labor by specialty, profession, and department or service; (2) the hierarchies of the professions; (3) the organization’s policies;
that place attending physicians above fellows, fellows above residents, residents above interns and so on. The mix of involved parties varies from one handoff to the next, resulting in variable distributions of power at the level of the organization plays a role in shaping the complexity and variability of between-unit handoffs by producing more or fewer options for interaction and disposition.

2. The hierarchies of the professions are structural features that place attending physicians above fellows, fellows above residents, residents above interns and so on.

3. The organization’s policies regarding admissions, disposition, and handoffs also play roles in distributing power among the various units of the hospital, such as by giving some units—but not others—the formal authority to make admission decisions. The mix of involved parties varies from one handoff to the next, resulting in variable distributions of power at the level of the organization; however, hierarchies and policies are stable organizational structures that shape the possibilities of that variability.

4. Organizational routines shape the timing and sequence of action. The point at which the handoff occurs within the larger admission routine can shape the nature and quality of interaction. For example, admission routines at Memorial entail ED staff engaging in considerable diagnostic work and committing to a disposition plan before engaging inpatient staff. This routine potentially set up different kinds of negotiation contexts than would a routine that involved inpatient staff earlier in the process. One would expect that the former sequence is more likely to place ED personnel on the defensive, while the latter sequence, in which the ED physician has not committed to a particular disposition, is more likely to be conducive to collaboration.

Furthermore, the interaction of multiple organizational routines also shapes the between-unit handoff by influencing when the handoff happens in larger action trajectories. For example, the practice of inpatient services not taking handoff from the ED during morning rounds produced a structural feature in some admissions that parties had to work around, including sometimes handing off prematurely, when the case was less well understood.

5. Organizational culture shapes negotiations. Shared assumptions about the purpose of handoff, the mission of the organization or unit, how staff should interact, and values related to patient-centeredness and safety, among others, guide handoff interactions. For example, handoff negotiations are likely shaped by the extent to which a hospital has a widely shared cultural norm regarding diversion of patients to other hospitals during times of near capacity. If, for example, a hospital has a strong norm of not diverting, possibilities for negotiation on the grounds of capacity constraints will be diminished. On the other hand, if a hospital has no such widely shared norm, handoff parties will have greater latitude to use arguments about capacity to shape disposition decisions. Similarly, norms pertaining to managing overcrowding, including the emerging practice of boarding patients in inpatient hallways rather than in the ED, constrain the possible actions that parties can easily negotiate during handoff. Furthermore, cultures that value one specialty above another or specialists above generalists may serve to reinforce stereotypes and biases of various specializations or units.

MACRO CONTEXT

Although it is typically beyond the direct control of hospitals, the broader environment in which a hospital is situated potentially exerts indirect influence on handoffs. In health care, salient features of the macro context would include national or local policies; reimbursement practices; performance incentives; accreditation requirements; regulations; labor and training issues; and legal concerns, including malpractice. Quality performance metrics established at the national level, such as those promulgated by the Centers for Medicare & Medicaid Services that tie ED throughput to meaningful use, offer a specific example of macro-context factors that have the potential to add additional time pressures to ED admission handoff negotiations. Another potential influence of the macro context on handoff stems from recent Medicare policy reforms that seek to reduce hospital readmissions by curbing reimbursements. While hospitals are attempting a variety of efforts to reduce readmissions, such as improving discharge practices and care management in the community setting, the ED admission handoff is a crucial juncture at which many decisions to readmit are made. But placing such macro-level concerns on the shoulders of parties engaged in day-to-day microactions such as handoff requires associated adjustments to organizational structures such as routines and organizational policies to properly equip parties to act appropriately without further complicating interactions.
Outcomes, and Feedback and Learning

Ultimately, we pay attention to handoffs because we believe they shape important outcomes, although little conclusive data confirm this. In Figure 1, outcomes are placed outside the nested features of the framework, indicating the combined influence on outcomes of actions and contexts. This conceptual framework, which is meant to stimulate thinking about the myriad levels of factors that can shape handoffs, suggests that outcomes are affected, but it does not predict those outcomes or suggest direct causation.

Because every action and subsequent reaction present actors with feedback—for example, a surprise that contradicts expectations or evidence that confirms them—there is always potential for learning. Repeated experiences of similar feedback from similar actions have the greatest potential to stimulate learning and alter future practices. The framework shows feedback and learning looping back to influence ongoing flows of action, suggesting that how parties act in one handoff will be influenced by previous interactions. This learning process has the potential to solidify certain beliefs and practices and to deeply shape impressions, stereotypes, expectations, and future interactions.

Implications and Conclusion

In this article we propose an empirically grounded conceptual framework of ED admission handoff negotiations that represents handoffs as situated within ongoing flows of action, variable negotiation contexts, stable organizational structures, and macro environments. The framework should not be interpreted as structurally deterministic. The properties of contexts do not determine behavior; they shape it by enabling and constraining possibilities for action. Importantly, positioning highlights the active role that people play in defining circumstances. In other words, power asymmetries do not automatically make handoffs less collaborative, but, depending on how clinicians use their power, such asymmetries can play a role in creating zero-sum games. Also consequential are other properties of the negotiation context, such as the relationship among the parties, patient complexity, and when handoff happens within various action trajectories. In other words, the framework should be understood as a complex system of moving parts that can produce any number of different scenarios, and efforts to improve handoffs should attend to the interactions of multiple components.

The purpose of the framework, then, is to raise awareness of potential opportunities to intervene and improve the contexts in which admission handoffs occur in order to foster greater collaboration and improve resilience. The framework can serve as a means to stimulate discussions and guide thinking within hospitals where there are concerns about the quality and effectiveness of between-unit handoffs. For example, a task force charged with evaluating opportunities to improve between-unit transitions within a given hospital might use the framework to guide its analyses, ensuring that it is considering the full range of organizational and social factors that might be affecting handoffs. The task force could work systematically through each factor in the framework (that is, each dimension of each contextual layer), stimulating a discussion of and collecting input and data about the ways and extent to which each factor influences handoffs within the organization. The framework might also be useful for developing an internal survey of clinical staff to gather their perceptions of the extent to which the various factors identified in the framework shape handoff practice and outcomes.

The framework is thus intended to systematize and extend the thinking of clinicians and administrators tasked with handoff quality and safety improvement. Table 1 (page 141) provides a set of questions derived from the framework, as examples that provide a starting point for practical efforts to analyze and improve between-unit handoff practice in hospitals. The suggested interventions are feasible in that each intervention has already been implemented in at least one hospital, according to the literature or authors’ knowledge or experience. They range in cost and effort, from changes in policies, to training, to instituting additional meetings. In general, these interventions are not typical interventions to improve handoffs, as they focus on improved engagement and communication across organizational boundaries and professions and reducing power imbalances rather than standardizing information content.

Similarly, the framework might be used to conduct an ex-post evaluation of a particular handoff; for example, as part of an adverse event or near miss analysis. Each layer of the framework might serve as a causal category in an Ishikawa or root cause analysis diagram. Each identified social and organizational factor from each layer would then serve as a causal subcategory on the diagram. Analysts could then systematically look for root causes pertaining to each of these subcategories (social and organizational factors). Along these same lines, future work might involve developing a standardized tool that could be used to analyze ED admission handoff–related adverse events and near misses.

An additional benefit of the framework is to identify potential high-risk handoff scenarios for targeted improvement efforts. The convergence of an undesirable arrangement of social and organizational factors (for example, high level of patient complexity, negative interpersonal or interunit relationships, previous unsuccessful attempts to admit a particular patient)
### Table 1. Guiding Questions for Handoff Practice Improvement

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<th>Social or Organizational Factor</th>
<th>Guiding Questions</th>
<th>Examples of Possible Interventions</th>
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| **Handoff Interaction**        | • Are there best practices for inviting others’ insights and suggestions during handoffs?  
• Are there best practices for addressing ambiguities and acknowledging and dealing with uncertainties during handoffs? | • Institute hardwired safety tools, such as the practices of Crew Resource Management, which encourages team engagement and shared mental models.*  
• Reduce waste and effectively manage the efficiency/flexibility tradeoff by implementing the Toyota Production System methodology.† |
| **Action Trajectories**        | • Are within-unit sign-outs, rounds, or other processes interfering with or complicating between-unit handoffs?  
• Can work processes be redesigned to provide “early notification” of potential admissions so that handoffs are not viewed as one-time events but rather a continuous collaboration for evolving or complex cases? | • Use handoff tools or checklists to ensure standardized transfer of basic information essential for continuity of care among clinicians, particularly between staff shift changes and other care provider transitions.  
• Give out personal contact information (for example, mobile phone numbers) to reduce barriers to communication between departing and incoming clinicians. |
| **Negotiation Context**        | • Using the factors from the negotiation context, can the most challenging types of handoffs that clinicians typically experience be identified?  
• Should handoffs for more challenging situations be required to be conducted face-to-face?  
• Are handoffs frequently occurring between individuals with significantly different amounts of power, and, if so, is this causing problems?  
• Are practices in place, or could they be implemented, to foster collaborative behaviors where parties lack the resources of positive relationships?  
• Are the perspectives of third parties shaping handoff interactions, and, if so, are there good practices for including these perspectives in a way that encourages collaboration? | • Use daily huddles between the ED staff and the trauma teams.  
• Use daily patient placement huddles involving physicians, nursing, and triage nurses.  
• Use telemedicine (for example, for stroke and burn patients) to allow for face-to-face interactions between treating physicians.  
• Establish professionalism standards as part of the ACGME core competencies and medical staff bylaws.  
• Use daily rounding by physicians and nurses to encourage stakeholder engagement and clarity.  
• Provide social and interprofessional educational opportunities to encourage the development of positive professional relationships. |
| **Structural Context**         | • Can the hospital’s organizational structures be modified to reduce power imbalances between units or otherwise improve between-unit collaborative interactions?  
• Is the hospital’s culture sufficiently collaborative, or could leadership take steps to model and encourage more of a collaborative approach to care? | • Adapt admissions policies and procedures to reduce power imbalances between units.  
• Modify divisions of labor by unit to reduce barriers to collaborative interactions.  
• Regularly share patient throughput data and case examples of patient experiences that were compromised by power imbalances.  
• Establish policies to minimize power imbalances (for example, handoffs occur from attending to attending physician, resident to resident physician)  
• Establish clear admission/discharge criteria for step-down and critical care specialty units.  
• Minimize over/under utilization of specialty nursing units and/or staffing resources.  
• Establish a “bed director” as an impartial mediator and empower this position to make appropriate patient disposition decisions.‡ |
| **Macro Context**              | • Can policies or practices be implemented that will reduce the effects on handoffs of legal, regulatory, and reimbursement concerns? | • Standardize documentation template in the electronic medical record.  
• Provide clear and timely communication to physicians and staff concerning admission criteria and requirements.  
• Establish shared responsibility among departments for shared between-unit service metrics (for example, door-to-balloon time for STEMI patients, ED admission disposition time to departure, rapid response team [RRT] activations within 24 hours of admission). |

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ED, emergency department; ACGME, Accreditation Council for Graduate Medical Education; STEMI, ST-segment elevation myocardial infarction.

can set up handoff negotiations as zero-sum games. On the other hand, the convergence of a desirable arrangement of social and organizational factors (for example, low patient complexity, good working relationships, alignment of routines in the involved units) is anticipated to foster collaboration. The framework thus provides guidance for factors to consider in handoff quality improvement efforts.

Finally, the framework has implications for additional research. Table 2 (above) provides research questions suggested by the framework; many others are also possible as one identifies various combinations of factors.

The conceptual framework we have proposed is constructed from observations at one academic tertiary teaching and referral hospital. To the extent that social norms and organizational structures vary among types of hospitals, it is possible that the framework will prove more applicable to some settings than others. This potential limitation is mitigated in part by presenting the factors of the framework at an abstract level, allowing practitioners to adapt each factor to the specifics of their respective settings. Furthermore, the framework was developed to aid improvement of between-unit handoffs in the inpatient setting. Its applicability to and usefulness for other settings (for example, outpatient\(^4\)) and other types of handoffs (emergency medical service to ED\(^5\)) and clinical communication activities (consultation\(^6\)) is unknown.

The conceptual framework characterizes ED admission handoffs as much more than information transmission activities.\(^{10,12}\) The failure to transfer information effectively during handoff may be a consequence of more than simply forgetting details, and improvements that rely on mnemonics, checklists, or computerized systems will likely achieve limited results.\(^{9,10,12}\)

The contribution of the framework, then, is to raise awareness of potential levers for encouraging the collaborative potentialities of handoff. Furthermore, many of the factors that influence handoff negotiations and with which frontline clinicians must deal lie beyond their direct control. Leaders and administrators must be involved in efforts to examine and reshape larger organizational structures and social processes that are implicated.\(^7\)

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<th>Framework Element</th>
<th>Research Questions</th>
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| Handoff Interaction | • What discursive positioning practices foster collaborative interaction and how might clinicians be trained in these practices?  
• What are the effects on handoff collaboration of different approaches to handling ambiguities? |
| Action Trajectories | • How is handoff quality (or other outcomes) influenced by when it occurs within larger action trajectories? |
| Negotiation Context | • What constellations of negotiation context properties tend to produce the highest-risk handoffs?  
• Are different handoff practices needed for more complex patient cases?  
• What practices foster collaborative behaviors where parties lack the resources of positive relationships?  
• How do power asymmetries affect collaboration? What handoff practices will counterbalance these asymmetries?  
• Under what conditions are different communication media most effective for ensuring collaborative behaviors? (For example, are face-to-face interactions needed in high-risk handoff scenarios?)  
• What are the best strategies for incorporating the perspectives of third parties? |
| Structural Context | • How might organizational structures (for example, policies, routines) be realigned to improve handoffs (for example, to ensure handoffs occur at optimal points in action trajectories, and to reduce power asymmetries among units)?  
• What can be done to foster a more collaborative culture? |
| Macro Context | • Are aspects of the larger health care environment influencing admission handoffs?  
• How are concerns about and efforts to address readmission rates shaping ED admission handoffs? |

ED, emergency department.

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**Table 2. Questions for Further Research**

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