The Challenges of Collaboratively Managing Patient Information in a Hospital’s In-Patient Unit

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Abstract
Due to the highly collaborative and information-intensive environment of hospitals, interdisciplinary patient-care teams must have a clear and accurate understanding of their shared patient in order to provide comprehensive and consistent care. However, there are a number of challenges that these collaborative teams face. One challenge involves unclear or conflicting perceptions of what patient information means to the staff involved in treating the patients. This challenge can result in frustration and tension between members of the team, as well as negative impacts to patient care. Therefore, this study seeks to explore these collaborative challenges and recommend system design and training implications.

Introduction
Patient-care teams rely on the availability, accuracy, and completeness of patient information to do their work. These teams are composed of highly collaborative, interdisciplinary staff who are collectively responsible for documenting and sharing information. At the same time, these teams face a variety of challenges, including managing the mobile and distributed nature of patient-care teams,\(^1\text{-}\,^3\) as well as the time-sensitive nature of hospital work.\(^4,\,^5,\,^6\) In addition, inaccurate patient information can lead to ambiguity about what treatments or procedures were done to a patient, medical decisions being made based on wrong or outdated information\(^7\), and even the occurrence of medical errors that could harm patients.\(^7\) Therefore, this study seeks to better understand how these challenges of working in a collaborative, interdisciplinary environment impacts the accuracy and understanding of patient information that is documented and shared across the team.

Background
Bardram & Bossen (2005) discuss the challenging nature of mobility work when studying environments where hospital staff are frequently moving throughout a physical space and among other people.\(^1\) Mobility is an inherent and necessary characteristic of hospital work because of the continuous need to access information, resources, people, and places.\(^2\) Hospital teams must also manage the distributed nature of their work. This includes being aware of where patients, information, and resources are located in relation to the other members of the hospital team, since distribution can impact communication and collaboration activities.\(^3\) In addition, researchers have discussed how understanding the time-sensitive nature of patient care, and the temporal rhythms of hospital work can result in decreased issues with task coordination,\(^4\) more effective planning or scheduling of patients,\(^5\) and identification of the most appropriate time to share information (e.g., shift change).\(^6\) However, there is still limited research on how the collaborative nature of hospital work affects the accuracy and understanding of the co-managed information. Therefore, this study seeks to extend this existing research by discussing how the challenges of co-managing patient information within a collaborative team can impact the accuracy and shared understanding of the information.

Methodology
We are currently conducting a 3-month qualitative field study in a large, academic teaching hospital in northeastern United States. The first author has conducted 155 hours of direct observations in the in-patient unit of the hospital by shadowing Internal Medicine physician teams during their morning rounds. The observations include interactions between the team of physicians and other members of the patient-care team, such as: physician consultants from specialty areas (e.g., Cardiology, Neurology, Surgery), nurses, care coordinators, social workers, therapists, and pharmacists. Detailed field notes were taken about the workflow and use of information technology, with a specific focus on the collaboration challenges and information accuracy issues that the team faced during their work. The field notes were then transcribed into an electronic document for analysis. The first author analyzed the data using Braun & Clarke’s six-phase thematic analysis approach.\(^9\)
Findings

Due to space constraints, we provide a brief example of one type of information challenge that patient care teams must deal with—unclear or conflicting perceptions of information.

One collaborative challenge is that different roles have different opinions on the meaning or intention of certain patient information. These unclear, or at times conflicting, perceptions can lead to different members of the patient-care team interpreting patient information in different ways. The inconsistent understanding of information can result in inaccuracies or negative impacts to patient care. For example, during the field study, a resident and a nurse had conflicting perceptions of what the term “PRN” meant:

In a patient’s room, a medical resident asks the nurse why the patient did not receive a suppository [procedure to help impacted bowels] that morning. The nurse says, “It wasn’t on the list.” The resident looks confused, opens the electronic medical record (EMR) on his laptop and says “Yes, it’s scheduled daily.” The nurse exits the patient room, goes to her EMR in the hallway, and looks up the order. She points to the screen and tells me, “See, it’s listed as PRN.” I ask the nurse what this means to her and she responds: “It means it’s as needed or as requested. So if the doctors want it done, then I do it as needed.” The nurse goes back into the patient’s room and tells the resident, “It’s not scheduled daily, it’s listed as PRN. But I can do it daily if that’s what you want.” I later ask the resident what “PRN” means to him, and he says: “It means as needed, so they should give it if the patient is stopped up. It’s obvious that the patient needed it done…She doesn’t need us to tell her to do it.”

This conflicting perception of what the term “PRN” means led to different views of patient information and also resulted in the patient not receiving a needed procedure. Additionally, there was another time when the physician team did not understand a surgeon’s note in the EMR:

The attending physician asks the team, “There’s a recommendation for ‘CLO’? What does ‘CLO’ mean? I’ll go into the surgery note.” The two medical residents do not know. One resident looks it up on her iPhone and after a few minutes says, “Oh it means ‘clear liquid diet.’ I’ve never seen that used as an acronym before.” The others agree and discuss how they are confused about why surgery still wants the patient on a clear liquid diet. The attending says, “I don’t see why she still needs to be on a ‘CLO’ as they call it. [Sighs, implying frustration] I guess we’ll have to figure out who this was and follow-up with them.”

In this scenario, there was an unclear perception of what the term ‘CLO’ means, as well as why the surgeons recommended this for the patient. This unclear perception of information led to frustration and additional work for the team to track down the surgeon to clarify the request.

Discussion

The findings of our study have design implications for the EMR, as well as general staff training implications.

**EMR Design Implications:** The findings discuss how the patient-care team may have unclear or conflicting perceptions of patient information found in the EMR system. The EMR could provide a mechanism that allows users to request verification or clarification of certain information if necessary, or easily provide the phone or pager number for the user who entered the information by linking to a contact directory. Therefore, if team members question the accuracy or meaning of the patient information, they can immediately communicate with the person or group to discuss it. Additionally, the EMR system could also provide users the ability to quickly annotate the high-level summary of orders or recommendations to include a reason so that other members of the team have a shared understanding of the request (if it is not apparently obvious). Although this information is sometimes found in longer progress notes or interdisciplinary narratives, these notes are usually not posted in the system until after the clinicians have seen a number of patients over the course of the day. Putting a simple, concise annotated note within the high-level summary of orders would make it easier for the primary care team to understand the reason for these decisions at a quick glance during rounds.

**Training Implications:** Constant communication between roles is an important part of ensuring accuracy and shared understanding of patient information. However, the EMR system is only one method for the team to communicate information to each other. One primary method of communication within the in-patient area is talking face-to-face or on the phone. Therefore, because of the prevalence of verbal communication, patient-care teams should be continuously trained and encouraged to explicitly communicate responsibilities and questions about information between roles. This can avoid unclear or conflicting perceptions of information, as well as prevent frustration or tension between these roles. After all, organizational frustration or tensions can result in decreased communication, which could further perpetuate accuracy issues of patient information.
References