



Improving Physician Hand-offs

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THE SCOPE OF THE PROBLEM

In 2003, the Accreditation Council for Graduate Medical Education (ACGME) required residency programs to abide by new work hour regulations, limiting physician work hours to 80 per week. In order to accommodate these changes, residency programs had to rethink how they provided 24-hour care to patients. The use of night floats and coverage shifts increased, and in the process, the number of hand-offs (transfer of patient care responsibilities) also increased. With each hand-off, there exists the potential for medical error and a threat to patient safety. Patients are worried: in one study,¹ 28% of patients reported concerns about how often hand-offs of care occurred. In this same study, patients' "worries about fatigue/discontinuity" were significantly associated with trust in and satisfaction with the health care provider. Patient worries are compounded by the fact that physicians have difficulty gauging the effectiveness of their own communication. A study of the sign-out process² noted that "the most important piece of information about a patient was not successfully communicated 60% of the time," while in a survey of pediatrics residents,³ 73% noted uncertainty regarding care plans due to incomplete verbal hand-offs, and only 19% reported that written sign-outs were accurate with respect to patient information and care plans. Due to these concerns, The Joint Commission implemented a National Patient Safety Goal (NPSG) in 2006 that encouraged health care organizations to adopt standardized hand-offs. In 2010, this NPSG became a requirement for accreditation. Despite this requirement, hand-offs still remain a source for error and a threat to patient safety, as an estimated 80% of serious medical errors involve miscommunication between caregivers during patient hand-offs.⁴

POTENTIAL SOLUTIONS

Several themes emerge in the literature about hand-offs. The first, unfortunately, is that better quality studies are needed. A recent review⁵ of the literature attempted to identify effective features of handoffs, but was limited by the small number of research studies including measures of effectiveness (only six of the 18 studies reviewed included effectiveness measures). However, the information available suggests some common strategies that may improve hand-off communications: two-way/two-level communication, standardization, and computerization.

One common strategy is that successful hand-offs require two-level, two-way communication. Receiving physicians prefer two levels of information—written and verbal sign-out. While one study⁶ reported that residents felt the number of data items in formal, written data summaries may obscure the critical information necessary for actual patient management,

and found that the use of data summaries was associated with an increased odds ratio for errors, it was also noted that data summaries improved efficiency. This study also noted that while resident physicians preferred verbal, interactive hand-offs, the number of asynchronous hand-offs (written sign-outs without face-to-face interaction) was increasing. The opportunity for the recipient of sign-out to ask questions and obtain clarifications, particularly regarding "to-do lists" or responses to unexpected events, enhances the hand-off process, and is integral to ensuring a safe transfer of responsibility.

The second common strategy is the standardization of hand-off information. There is a variety of available tools (and mnemonics) to help with this process. The best studied is the SBAR (Situation-Background-Assessment-Recommendation) technique,⁷ which standardizes critical patient information into an organized summary that is conveyed in the same order, every time. Given its brevity, SBAR is particularly useful for the verbal component of the hand-off—clinical information distilled to key points. The written hand-off component often includes more detailed information, but should be standardized as well. One proposed mnemonic for written hand-off standardization is ANTICIPATE (Addministrative data-New information-Tasks-Illness-Contingency planning),⁸ which includes only the pertinent information for the safe transfer of patient care. In fact, the creators of this mnemonic specifically note that certain information—initial history and physical exam, completed tasks, discharge summary information—are *not* essential to the sign-out process and need not be included in the written sign-out document. Another studied mnemonic is SIGNOUT? (Sick or DNR-Identifying data-General hospital course-New events-Overall health-Upcoming possibilities-Tasks to complete-?Questions),⁹ a brief, structured tool modeled after the SBAR, which may be flexible enough to be used as either a written or verbal hand-off guide. The goal of both of these tools is to convey the critical patient care information necessary for safe, effective hand-offs in an organized and accessible format.

The final common strategy is computerization of hand-off information, which works in three ways. First, the use of templates allows for standardization of the information contained in hand-offs. Standardized fields for input (either resident-supplied or auto-populated information from a connected hospital information system) ensure that key components are always communicated (identifying data, code status, hospital course, etc.). Second, computerization can allow for more accurate, up-to-date information, particularly if the hand-off tool is linked to an electronic medical record. Third, computerization allows for improved efficiency, as saved or auto-populated information reduces the need for resi-

dents to recopy information. A recent study¹⁰ of a computerized rounding and sign-out system showed that the system reduced rounding time and decreased repetitive information-handling tasks by residents without increasing deviations from expected care, resident-reported overnight events, or adverse drug events.

FUTURE DIRECTIONS

Given the many areas in need of improvement in physician hand-offs, the multitude of potential strategies available, and the ever-changing landscape of medical education, there are several future areas of study for improving safety in hand-offs. The Joint Commission Center for Transforming Healthcare released their strategies for Improving Hand-off Communications in 2010.⁴ This package contains targeted solutions for specific causes of ineffective hand-offs, and has shown a 52% reduction in “defective” hand-offs at the project programs that have fully implemented these solutions. This project is currently in the pilot testing phase at other hospital systems.

Another area of future study is physician training in hand-off communications. There has been a lack of formal instruction for medical students and residents in the skill of hand-off communication. In the last few years, some progress has been made in developing curricula and training exercises. One study piloted a simulated hand-off experience for medical students, which was well-received by the students.¹¹ Another program created a hand-off curriculum for interns which resulted in improved spoken and written sign-out skills.¹² These are just a few areas of active study on the national scene. Locally, Rhode Island Hospital and Hasbro Children’s Hospital are in the early phases of a study investigating resident physician sign-out.

A recent commentary¹³ suggests that making sign-out part of the official medical record, particularly in systems with electronic health records, would improve patient safety. First, it would help encourage standardization of hand-off information, and allow for more up-to-date clinical information to be universally available to other providers (nurses, respiratory therapists, etc.) caring for the patient. Second, it would encourage electronic health record vendors to create support tools for sign-out, which may enhance clinical decision making, acting as additional protection for the patient. This remains an area of ongoing study.

Physician hand-offs remain an important potential source for medical errors and potential threat to patient safety. Through training of physicians, standardization and computerization of hand-offs, and improvement in communication skills, the physician community can improve patient hand-offs, and create a safer climate for patient care.

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