Template for Success: Using a Resident-Designed Sign-out Template in the Handover of Patient Care

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OBJECTIVE: Report our implementation of a standardized handover process in a general surgery residency program.

DESIGN: The standardized handover process, sign-out template, method of implementation, and continuous quality improvement process were designed by general surgery residents with support of faculty and senior hospital administration using standard work principles and business models of the Virginia Mason Production System and the Toyota Production System.

SETTING: Nonprofit, tertiary referral teaching hospital.

PARTICIPANTS: General surgery residents, residency faculty, patient care providers, and hospital administration.

RESULTS: After instruction in quality improvement initiatives, a team of general surgery residents designed a sign-out process using an electronic template and standard procedures. The initial implementation phase resulted in 73% compliance. Using resident-driven continuous quality improvement processes, real-time feedback enabled residents to modify and improve this process, eventually attaining 100% compliance and acceptance by residents.

CONCLUSIONS: The creation of a standardized template and protocol for patient handovers might eliminate communication failures. Encouraging residents to participate in this process can establish the groundwork for successful implementation of a standardized handover process. Integrating a continuous quality-improvement process into such an initiative can promote active participation of busy general surgery residents and lead to successful implementation of standard procedures. (J Surg 68:52-57. © 2011 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEY WORDS: Accreditation Council for Graduate Medical Education, communication, Core Competencies, curriculum, education, handoff, handover, internship and residency, patient safety, process assessment, program development, sign-out

COMPETENCIES: Interpersonal and Communication Skills, Practice Based Learning and Improvement, and Systems Based Practice

BACKGROUND

In 2003, the American Council for Graduate Medical Education (ACGME) adopted rules limiting the weekly duty hours for resident physicians. Although implementation of these rules was intended to improve patient outcomes, it has failed to demonstrate significant improvement.[1-5] One clear change that occurred with the adoption of work-hour restrictions was an increase in the number of patient handovers, or transfer of care between residents.[3,6-9] Multiple handovers create an opportunity for communication breakdown that may lead to increased medical errors, longer hospital stay, and unnecessary laboratory studies.[7,10-15] Complicating the increased frequency of patient handovers is the lack of standardized sign-out processes and curricula in residency programs focused on physician-to-physician communication.[8,16-18]

The Joint Commission recognized the handover process as an area for improvement in patient care and highlighted the subject of handovers in its 2006 National Patient Safety Goals.[19] Current 2009 National Patient Safety Goals state, "NPSG.02.05.01 The [organization] implements a standardized approach to handover communications, including an opportunity to ask and respond to questions."[20]

To comply with ACGME work-hour regulations, our general surgery residency program uses a "night float" system. Fifteen surgical services are covered by 1 intern and 1 second-year general surgery resident from the hours of 6 p.m.to 6 a.m. The handover of these patients historically was service specific but not standardized. In 2006, general surgery residents proposed the implementation of a computer-based handover system after using the University of Washington computerized rounding and sign-out system (Computerized Round and Sign-Out) during off-site rotations.[21,22] This resident-initiated, or "bottom-up"

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approach to implementing a standardized handover process was not successfully adopted. In late 2007, our medical center's senior administration and Internal Medicine faculty developed and attempted implementation of a standardized handover process for the surgical services. This "top-down" approach was unsuccessful because of the failure to understand the perceived differences and positive aspects of the existing surgical residency sign-out process.

Given the mutual desire for an efficient, accurate, and standardized handover process, general surgery residents, faculty, providers, and administration met and agreed to integrate the positive aspects of both of these "top-down" and "bottom-up" approaches to this quality-improvement initiative.

The goal of this initiative was to reduce the inaccuracies and failures in communication involved in the transition of patient care and, thus, potentially reduce any medical errors that might occur because of communication failures. We present our experience with implementing this quality-improvement initiative.

METHODS

The standard process improvement method used for this project integrated senior administration, faculty, nursing, information systems, and senior and junior general surgery residents (Fig. 1). The basic components of the transfer of care process were outlined by a senior administrator based on guidance from the Institute of Medicine, the Joint Commission, and the Alliance of Independent Academic Medical Centers.[20,23-25] Throughout the initiative, technical support was provided by an independent clinical quality improvement manager.

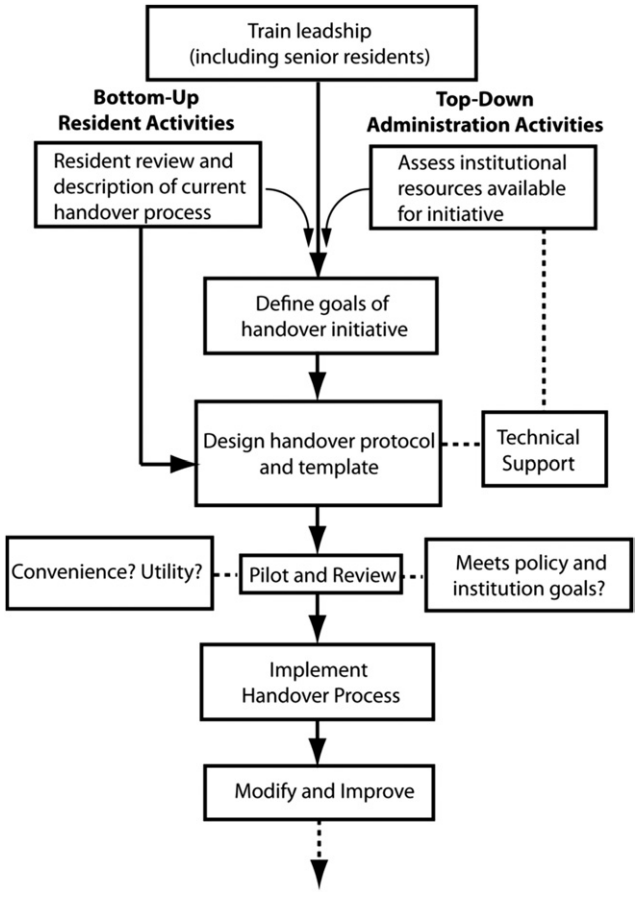

FIGURE 1. Handover implementation process.

Medical System

This quality-improvement initiative was implemented in a 336-bed, nonprofit, tertiary referral teaching hospital. The health care system has a main campus with 7 regional clinics, 440 physicians, and more than 5,000 employees. The general surgery residency program currently has 33 residents and graduates 5 chief residents per year. An average of 16,000 surgical procedures are performed per year.

The night float service is comprised of an intern and second-year general surgery resident. The night float service cares for all floor and intensive care unit surgical patients from 6 p.m. to 6 a.m. Junior residents are supported by the senior resident for each of the 15 surgical services. All senior residents take home call for their surgical service. Additionally, each senior resident is supported by their respective attending.

Training in Process Improvement and the Virginia Mason Production System

Since 2002, faculty and administrative staff at our medical center have undergone formal instruction as part of the Virginia Mason Production System (VMPS) in standard work, process improvement, root cause analysis, and principles of the Toyota Production System.[26-29] Over the last 8 years since the implementation of VMPS, staff at our hospital have performed more than 600 quality and process improvement projects or workshops with a goal of streamlining processes, eliminating waste, and improving patient care and workflow. To broaden our institution's knowledge base on quality-improvement initiatives, faculty in the Graduate Medical Education Department have also received training through the Institute of Healthcare Improvement. Similarly, senior residents have undergone training on health care quality improvement sponsored by the Alliance of Independent Academic Medical Centers. All residents receive lectures specific to standard work and quality improvement initiatives during their first-year orientation.

Needs Assessment

Six months before implementing the standardized handover process, a team was formed that included a senior resident, junior resident, thoracic surgery attending, general surgery program director, medical director of GME, and project manager from the department of clinical improvement. Involvement in this process was voluntary. A timeline, financial support, and goals for this initiative were outlined. A supervisory group was also formed and included a senior vice president of the medical center, a physician liaison to clinical information systems, and the Internal Medicine program director.