

A Strategy to Reduce Interruptions at Hospital Morning Report

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Abstract

Background The learning atmosphere of hospital morning report is frequently interrupted by nonurgent beeper pages to participating residents.

Intervention During 176 consecutive internal medicine morning reports, 1 of the 4 chief residents at a single academic medical center collected and answered house staff pages during the 30-minute conference.

Results A total of 884 pages were answered during this period. Of these, 743 could wait until after the end of

morning report, resulting in more than 4 interruptions averted per session. Over half of the pages were from nursing personnel. There was no significant decrease in the total number of pages or nurse pages during the observation period.

Discussion In summary, our simple system of holding intern pages resulted in a dramatic reduction in interruptions during hospital morning report.

Background

The hospital morning report is a cornerstone of graduate medical education whereby a group of residents and faculty gather to review inpatient medicine topics in the context of patient care. Full engagement in this education conference is often jeopardized by frequent pages from hospital staff, nursing personnel, and colleagues regarding patient care. Previous studies of paging patterns at teaching hospitals have documented that pages frequently interrupt patient care and teaching conferences^{1,2} and that a minority of pages necessitate a rapid response or influence clinical care.^{3–5}

Other than 1 article proposing reducing paging interruptions as a means to reduce risk for errors by residents,⁶ we are not aware of any reports in the literature evaluating strategies for curbing pager interruptions at teaching conferences. Therefore, we designed and implemented a system to reduce pager interruptions during hospital morning report.

Methods

The postgraduate year-1 (PGY-1) internal medicine residents at our institution participate in a 30-minute morning report 4 days per week while rotating on the general medicine inpatient services. At the start of the 2008–2009 academic year, 1 of the 4 chief residents began collecting and answering PGY-1 resident pagers during this teaching conference on a rotational basis. The attending PGY-1 residents (approximately 12 per day) left their pagers with the covering chief resident at the back of the conference room. The chief resident responded to the pages and took messages that were communicated to the PGY-1 residents at the end of the teaching session. Residents were interrupted from morning report only for pages or questions that the chief resident judged might require immediate attention to patient care. Examples of pages that require immediate attention include worrisome vital signs, requests for acute pain management, urgent information from consulting services, new admissions, abrupt changes in patient symptoms, or any situation in which the caller requested physician assessment of a patient. Examples of pages that may wait until after conference include nonurgent medication change requests, clarification of routine orders, and nonurgent calls from consult services.

From July 2008 through May 2009, the chief residents recorded the number of total pages as well as pages that could wait until after morning report. The assessment of whether pages could wait was determined by the chief resident. Pages were further stratified by category of caller. The categories of callers included nursing personnel, subspecialty consult services, nonclinical allied health staff, the emergency department, and a miscellaneous category.

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TABLE	PAGES BY CATEGORY OF CALLER OVER 176 DAYS OF HOSPITAL MORNING REPORT
Type of Caller	Total Pages, N (%)
Nursing	495 (56)
Subspecialty consult service	147 (16.6)
Nonclinical allied health	26 (2.9)
Emergency department	14 (1.6)
Other	202 (22.9)
Total	884

Examples of pages in the miscellaneous category include those from venipuncture technicians, respiratory therapy, social services, pathology department, microbiology department, hematology laboratory, the hospital operator, continuity clinic allied health staff, and social pages from colleagues.

We hypothesized that frequent re-enforcement to callers that they are paging during conference time would eventually reduce the number of pages. We used linear regression to determine whether the presence of the intervention over time would be associated with the frequency of total pages or pages that could wait. We used a 1-sided *P* value of <.05 as the a priori hypothesis that total or nonurgent pages would decrease over time.

Results

A total of 884 pages were recorded over 176 days, of which 743 (84.1%) could wait until after morning report, averaging 4.22 averted interruptions per teaching session. Over this same period, 141 (15.9%) pages required immediate attention by the resident provider, resulting in an average of only 0.8 interruptions per session. The total pages, categorized by type of caller, are outlined in the TABLE. Pages were most commonly initiated by nursing staff (56%). Linear regression revealed no significant change in the frequency of total pages (*P* = .05) or nonurgent pages (*P* = .40) as the system change proceeded through the academic year.

Discussion

Our study demonstrated that pagers held by a third-party physician (chief resident) resulted in large numbers of averted interruptions over roughly 9 months of a 30-minute hospital morning report. The value of this reduction of interruptions to the educational environment of these sessions may allow residents to better focus on the content of the morning report conference. From a practical standpoint, this strategy was effective in triaging a large number of interruptions while maintaining sustainability. That is, this strategy continues to be employed without undue stress to the chief residents' schedules or to the flow of the morning report conference.

The fact that the pager-holding strategy itself did not result in significant reduction of pages during this conference over time implies that this strategy cannot be a 1-time intervention, but rather an ongoing effort. It further implies, although more indirectly, that broad educational interventions to those groups perpetuating pages during teaching conference that could otherwise wait (eg, nursing personnel, subspecialty consult services) may not be useful in diminishing pages during conference times. In fact, this strategy to reduce interruptions at our institution was layered on top of long-standing periodic education of allied health staff to avoid nonurgent pages during conference and posting of these conference times at nursing stations. The reason for this lack of systemic effect is not clear, but it speaks to the complexity and personnel turnover of a large teaching hospital. Furthermore, perceptions of page urgency may differ between physicians and other allied health staff,⁷ and it is important to ensure that there are no perceived barriers to accessing physicians at any time.

The chief residents at our institution receive clinical feedback from all departments engaged with residents, and we are aware of no adverse effects of the pager-holding strategy. Specifically, we never received feedback that patient care was compromised by this system. However, the effect of the strategy on patient care was not formally evaluated. Further, the effect of this strategy on resident learning was not evaluated. The use of physician resources is another limitation of this strategy. Specifically, this strategy may not be logistically possible at residency programs with only 1 or 2 chief residents. Finally, although the results of this article reflect the realism of a field study, they are limited by a lack of control group and experimental design.

In summary, a simple pager-holding strategy resulted in an overwhelming reduction in interruptions during hospital morning report. Further studies are needed to evaluate the impact of other system changes on paging frequency during teaching conferences and to understand the impact of reduced interruptions on resident learning and patient care.

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