Dissemination of New Medical Knowledge: Towards the Use of Electronic Communication Channels to Distribute ACP Journal Club Reviews
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INTRODUCTION
Clinicians must know about recent advances in medical diagnosis and treatment for optimal clinical decision making. Delays in identifying new medical knowledge or reluctance in applying it to clinical practice may effect the quality and cost of clinical decisions. Efficiently identifying and accessing newly published medical information is challenging. Consequently, clinicians may remain unaware of important advances that justify altering their practice.

Several studies have identified major barriers to the dissemination of new medical knowledge: (1) lack of clinician awareness that new information exists, (2) inability to obtain information in a timely manner and (3) difficulty validating recommendations for changing practice patterns. Systematic reviews and abstracts help identify studies that warrant attention and provide expert opinions for validating recommendations. However, many clinicians do not have time to frequently poll the literature to identify when changes in knowledge occur. We investigated the feasibility and utility of disseminating new medical knowledge directly into the work environment by using the two-way communication channels of a clinical event monitor (CLEM).

METHODS
Each weekday at 10:15 a.m., a group of house officers received, by pager and email, notification about the availability of one American College of Physicians Journal Club (ACPJC) review. The notice contained the title of a single review, randomly selected from the most recent issue. By keying a 2-way pager auto-reply option, or replying by email, the clinician could request that the full-text review be printed on a nearby network printer, or delivered to email. When a request for a full-text review was received, CLEM sent the review and logged the time, the recipient's ID, and the delivery method. We calculated the frequency of requests, and used a survey to evaluate the users' impressions and to measure the number of reviews that the house officers received, read and perceived "useful."

RESULTS
Between August and October 1998, CLEM disseminated 47 ACPJC titles to 47 house officers rotating on inpatient medical services. Of 975 disseminated titles, the house officers requested 126 (12.9 %) for full-text delivery. Twenty-five unique users requested at least one full-text review. The number of reviews requested by individual house officers ranged from zero to 14, with an average of two requests per house officer per month.

The house officers returned 37 surveys (58.7 %). Twenty (54.0 %) of the survey respondents requested at least one full-text review. They reported receiving only 51 of the 83 requested reviews (61.5 %). The respondents reported reading 26 (51.0 %) of the reviews that were received. Of the reviews they read, 23 (88.5 %) were perceived useful. The house officers reported that the system was easy to use and notification by pager did not interrupt their work. They indicated a positive attitude toward the ACPJC review format, and reported that the system made them aware of clinically useful information before they would have found it on their own. The house officers reported the primary reason for not requesting a full-text review was that they were too busy to do so.

DISCUSSION
Our study suggests that the use of electronic communication channels for delivering systematic abstracts into the work environment hold promise for minimizing some of the barriers to the dissemination of new medical knowledge. Although only a small proportion of the house officers requested and read the reviews, they found the information useful and had a favorable impression of the delivery method. Unfortunately, the system was unable to effect the largest barrier to the dissemination information - the clinicians' lack of time to request and read the reviews.

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References