Hospitalist Perceptions of Electronic Health Records: a Multi-site Survey

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INTRODUCTION

The limitations of electronic health records (EHRs), including their implication as a cause of physician professional dissatisfaction, have been widely described.^{1–5} Most of what is known about clinician perceptions of EHRs comes from outpatient settings. Little is known about the impact of EHRs on hospitalists. Given the varied workflows and pressures faced by outpatient and inpatient clinicians, we aimed to understand how hospitalists perceive EHRs, and how EHRs impact professional satisfaction and burnout.

METHODS

Between April and June 2017, surveys, with two follow-up reminders, were e-mailed to hospitalists at five hospitals in two states. We chose our sites to include academic and community hospitals utilizing a variety of EHRs (two of the most widely utilized commercially available EHRs (Epic Systems, Verona, WI and Meditech, Boston, MA) and a homegrown system (webOMR, Boston, MA)). The survey included 18 quantitative and two free-text questions. We adapted a subset of questions from the RAND study.⁵ Quantitative questions utilized a 5-point Likert scale. Descriptive analyses were completed using Excel (version 2006, Redmond, WA), with chi-square analyses to examine the relationship between self-reported burnout and EHR satisfaction using Stata (version 16.1, College Station, TX). We completed content analysis of free-text responses. Two team members reviewed responses, identified themes, and tabulated occurrences. A third team member resolved discrepancies.

This work has not been presented at any conferences.

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RESULTS

Quantitative Survey Responses

Surveys were sent to 126 hospitalists with a 67% response rate. The mean age of respondents was 37 (range 29–49), 51% were male, and 49% had used EHRs for 5–10 years. Responses are shown in Table 1. Responses were similar across all EHRs.

Burnout and EHR Use

We asked physicians to describe their work-life balance with EHRs as compared to paper: 56% ($n = 47$) reported their work-life balance was better with EHRs, 20% ($n = 17$) reported no difference, 17% ($n = 14$) reported EHRs made their work-life balance worse, and 7% ($n = 6$) had never used paper charts. We asked physicians to describe how often they felt burned-out, with the following breakdown reported: 35% often/very often ($n = 30$), 50% sometimes ($n = 42$), 13% rarely/never ($n = 11$). We compared the most burned-out to the least burned-out respondents and found the least burned-out physicians were more likely to state that EHRs improved their work-life balance (81% vs 53%; trend toward significance $p = 0.098$). We compared all respondents and found physicians who stated that EHRs improved their work-life balance were more likely to report that EHRs improved their job satisfaction (56% vs 43%, trend toward significance $p = 0.076$).

Table 1 Responses to Quantitative Questions Regarding EHR Use and Perception

Question	% agree/strongly agree ($n = 84$)
I rely heavily on computer-based information when seeing patients	95% (79)
Our EHR improves the quality of care we provide to patients	63% (53)
When I am providing clinical care, our EHR slows me down	50% (42)
Using an EHR interferes with patient doctor communication during face to face clinical care	39% (33)
Our EHR requires me to perform tasks that other staff could perform	60% (50)
I receive an overwhelming number of electronic messages, reminders and/or alerts from our EHR	37% (31)
Our EHR improves my job satisfaction	41% (34)
Based on my experience to date, I prefer using paper medical records instead of electronic records	0% (0)

Free-Text Responses

We asked physicians to comment on the challenges and advantages of EHRs. Themes and representative quotes are shown in Table 2. The frequency of themes raised was similar across all EHRs, except for a greater percentage of comments regarding lack of integration with webOMR.

DISCUSSION

Compared to prior studies, inpatient and outpatient physicians report many of the same frustrations with EHRs, namely, usability, information overload, and degradation of clinical documentation.^{3, 5} Prior studies found that outpatient physicians who were satisfied with EHRs were more likely to report higher overall professional satisfaction.³ We observed related

Table 2 Themes Raised with Representative Quotes in Response to Qualitative EHR Use Questions

Theme raised			Representative quotes
% of all comments mentioning theme (n = 84)	% of comments from the least burned-out mentioning theme (n = 11)	% of comments from the most burned-out mentioning theme (n = 30)	
<i>How does the EHR make your clinical, education, or research work more challenging?</i>			
Time consuming and inefficient 63%	36%	43%	The availability of data in the EHR is a good thing, but its availability makes me feel obligated to look through it all which is very time consuming. Clinical documentation is time consuming and tedious. Home medication reconciliation is cumbersome and takes a very long time. Because of copy and paste notes, they are more and more bloated and thus less readable. Documentation by some users incorporates large volume of auto-populated irrelevant data. Our current EHR is not well integrated...does not incorporate other functions such as ordering, viewing medications. Information I commonly access for each patient is not in the same place...ICU not on the same system...ED not on the same system. We spend too many hours documenting what we are doing rather than actually seeing patients. Involving a computer in a patient interaction seems both necessary for the sake of efficiency and also a barrier to the interpersonal dimension of care. Too many notices to respond to—many redundant.
Note length and content 18%	18%	7%	Epic down time = apocalyptic
Lack of integration 16%	18%	13%	
Barrier to patient care 13%	9%	7%	
Alert fatigue 7%	0%	7%	
Technology outages 5%	8%	0%	
<i>How does the EHR facilitate your clinical, education, or research work?</i>			
Availability of information 66%	9%	47%	It is easy to find and review prior medical records including notes and test results. Gives a better understanding of patient's history and prior work up. Possible to access medical records from numerous locations throughout the hospital. Nice to be able to ensure work/life balance by being able to complete needed tasks remotely. I appreciate that when I am at the bedside and a patient asks me for their most recent labs I can immediately look it up and share that information with them. Allows for entering orders and writing notes while talking to patients. Pre-populated data sparing me the need to obtain it and enter it myself. The ability to observe data trends is greatly enhanced compared to paper charting. Easy to review notes from other care team members—consultants, ancillary staff. Communication is enhanced by messaging features within the EHR. Easy to send letters to providers. Portals to other providers and hospitals is invaluable. Much easier to supervise the medications/treatments given to patients by our learners.
Access anywhere 22%	9%	10%	
More efficient use 20%	36%	16%	
Ability to trend and graph data 14%	18%	7%	
Improves communication 12%	0%	7%	
Ability to oversee learners 10%	9%	3%	

findings. The least burned-out respondents in our study most frequently noted EHRs improve efficiency and were more likely to state that EHRs improve their work-life balance. Hospitalists who report that EHRs improve their work-life balance were more likely to report that EHRs improve their job satisfaction.

Removing sources of frustration and inefficiency has been proposed as a key step for reducing burnout.⁶ Although causation cannot be established from our cross-sectional survey, our findings suggest that physicians who find EHRs the least burdensome experience less burnout. Interventions targeted at improving EHR usability and addressing documentation expectations should help decrease frustrations in the hospital and clinic and could decrease burnout for all physicians regardless of where they practice.

Although we included multiple varied practice sites and EHR systems, our sample size limits the generalizability of our findings. While we achieved a high response rate, there may be self-selection bias from respondents affecting our results.

The findings of our study should galvanize EHR designers and hospital systems to focus on the EHR user interface to help mitigate hospitalist burnout. Our findings suggest that interventions to improve the EHR are just as important for the inpatient as for the outpatient setting.

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