

Evaluation of a Commercial Electronic Medical Record (EMR) by Primary Care Physicians 5 Years after Implementation

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Abstract

Electronic medical records (EMRs) are gaining increasing prominence in the delivery of healthcare, although the focus is primarily on deploying EMRs. Relatively little research has studied the post-implementation of commercial EMRs. Here we present the results of a web-based survey of all the primary care clinicians in our university affiliated, tertiary care health system. The survey evaluated primary care clinician demographics, usage, and ideas for enhancement of the EpicCare EMR, five year after its initial deployment throughout our healthcare system.

Methods

We have had the EpicCare EMR by Epic Systems Incorporated in our tertiary care, university affiliated hospital since 1999. We currently use the Hyperspace Summer 2004 implementation of EpicCare. We developed a web-based survey for all primary care providers (internal medicine, pediatrics, family practice, and combined internal medicine-pediatrics practitioners) to assess their use of our EMR. Typically providers are given approximately 8 hours of training by non-providers about how to use the EMR as their only introduction to the EMR.

Results

The survey response rate was 35% (59 of 154). Demographic characteristics of respondents appear in Table 1.

Characteristics	Average (std dev)
Age	43 (6)
Years in practice	15 (6)
Years using EpicCare	4 (1)
% clinic practice	80% (16)

Table 1 – Demographic characteristics of providers.

To help assess overall computer skills, we asked respondents if they had a computer at home (97% did), if they accessed EpicCare from home (53% did), and what type of computer user they considered themselves to be (11% beginner, 76% intermediate, 13% advanced). Only 4 respondents (7%) reported using any other EMR besides EpicCare.

On a 1-4 Likert scale, 87% of respondents rated the EpicCare EMR as good or excellent. Table 2 depicts the use of EpicCare functions.

EMR Function	% use/change in practice
SmartPhrase/Text	77%
SmartForm	34%
Patient handouts	27%
Medication lists	60%
Problem lists	56%
History fields	40%

Table 2 – EpicCare functions used by providers.

In terms of affecting their practice, 12% indicated that they changed medications based on medication alerts and 15% indicated that they followed evidence-based best practice alerts.

In terms of overall assessment of the EMR, only 6% felt it was inferior to a paper-based charting system, while 13% felt it was equal to a paper-based charting system and 81% felt it was superior to a paper-based charting system. With EMR use, 87% of respondents felt their patient care improved, 78% felt they were billing more appropriately and 63% felt their error rates decreased.

In the area of training, 46% did not feel that their initial training was adequate and 75% felt that they would benefit from additional training. Forty-seven (47) percent would participate in a EMR Physician's Users' Group if given the chance. The most useful sources of help for EPIC were colleagues and in-house EpicCare support personnel.

Conclusions

Despite being in a mature EMR environment with high use primary care practitioners that feel that the EMR improves their medical practice, many of the functions and features of the EMR are not being widely used. Also, initial training, as well as on-going training and involvement with the EMR was not thought to be adequate by many. Although much effort goes into deploying an EMR, increased emphasis should be placed on training and support, once an EMR is in place, to achieve optimal results from the deployment of an EMR.