

**Short report**

---

**Satisfaction with electronic health records is associated with job satisfaction among primary care physicians**

Cite this article: Jones CD., Holmes GM., Lewis SE., Thompson KW., Cykert S., DeWalt DA. Satisfaction with electronic health records is associated with job satisfaction among primary care physicians. *Inform Prim Care*. 2013;21(1):18–20.

<http://dx.doi.org/10.14236/jhi.v21i1.27>

Copyright © 2013 The Author(s). Published by BCS, The Chartered Institute for IT under Creative Commons license <http://creativecommons.org/licenses/by/2.5/>.

**Author address for correspondence:**

Christine DeLong Jones MD, MS  
Assistant Professor  
Hospital Medicine Group,  
Division of General Internal Medicine  
University of Colorado  
F782, 12401 E 17th Avenue, Aurora  
Denver, CO 80045, USA  
E-mail: [christine.jones@ucdenver.edu](mailto:christine.jones@ucdenver.edu)

*Accepted November 2013*

**Christine D Jones**

Hospital Medicine Group, Division of General Internal Medicine, University of Colorado, Denver, CO 80045, USA

**George M Holmes**

The Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, Chapel Hill, NC 27514, USA  
Department of Health Policy and Management, University of North Carolina at Chapel Hill, Chapel Hill, NC 27514, USA

**Sarah E Lewis**

Department of Health Policy and Management, University of North Carolina at Chapel Hill, Chapel Hill, NC 27514, USA

**Kristie W Thompson**

The Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, Chapel Hill, NC 27514, USA

**Samuel Cykert**

Division of General Internal Medicine and Clinical Epidemiology, University of North Carolina at Chapel Hill, Chapel Hill, NC 27514, USA

**Darren A DeWalt**

The Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, Chapel Hill, NC 27514, USA  
Division of General Internal Medicine and Clinical Epidemiology, University of North Carolina at Chapel Hill, Chapel Hill, NC 27514, USA

---

**ABSTRACT**

**Objective** To evaluate the association between electronic health record (EHR) satisfaction and job satisfaction in primary care physicians (PCPs).

**Method** Cross-sectional survey of PCPs at 825 primary care practices in North Carolina.

**Results** Surveys were returned from 283 individuals across 214 practices (26% response rate for practices), of whom 122 were physicians with EHRs and no missing information. We found that for each point increase in EHR satisfaction, job satisfaction increased by ~0.36 points both in an unadjusted and an adjusted model ( $\beta$  0.359 unadjusted, 0.361 adjusted;  $p < 0.001$  for both models).

**Conclusion** We found that EHR satisfaction was associated with job satisfaction in a cross-sectional survey of PCPs. Our conclusions are limited by suboptimum survey response rate, but if confirmed may have substantial implications for how EHR vendors develop their product to support the needs of PCPs.

## INTRODUCTION

Physicians interact with electronic health records (EHRs) more than ever before as the prevalence of EHR use continues to rise nationwide. Although aspirations for EHRs have included improving efficiency, quality of care, and billing accuracy, these aspirations may not reflect the experience of physicians using EHRs for daily patient care.

In ambulatory care practices, the adoption of EHRs with the potential to meet meaningful use more than doubled between 2009 and 2011 (from 18% to 38%).<sup>1</sup> Physicians that perceive an EHR is easy to use are more likely to be satisfied with, and to continue use of, a particular EHR.<sup>2</sup> However, little is known about whether physicians who are satisfied with an EHR are more likely to be satisfied with their job. We sought to evaluate whether satisfaction with an EHR, as assessed by a survey, is associated with job satisfaction in physicians. We hypothesized physicians who perceived their EHRs as cumbersome and/or lacking valid data could experience less overall job satisfaction.

## METHOD

We emailed a survey to 738 contacts for 825 primary care practices in North Carolina in March of 2012; the contact was asked to forward the survey to all physicians in the practices they represented. Three subsequent reminder and follow-up emails were sent. The survey was designed to evaluate medical home transformation within primary care clinics enrolled in quality improvement initiatives and had been developed and tested previously.<sup>3</sup> This survey was approved by the UNC IRB with use of online consent with electronic agreement.

We used one question to evaluate job satisfaction: overall, I am satisfied with my current job (range: 1—strongly disagree to 5—strongly agree). We used three questions to evaluate EHR satisfaction: (1) my clinic's EHR is a big help to me in providing quality care to my patients; (2) the EHR is well integrated into the practice's daily work flow; and (3) I can trust the validity of the data in our EHR (range for each question: 1—strongly disagree to 5—strongly agree). For EHR satisfaction, a scale ranging from 3 to 15 was created (3—low satisfaction to 15—high satisfaction). We used least squares regression to compare EHR satisfaction with job satisfaction.

## RESULTS

Surveys were returned from 283 individuals across 214 practices (26% response rate for practices). Among 283 respondents, 150 (65%) were physicians, 55 (24%) were non-physician clinicians, and 24 (10%) were administrative employees. Among the 150 physicians, we excluded those who were missing data ( $n = 7$ ). Of the remaining 143 physicians, 122 (85%) indicated that they had an EHR (characteristics in Table 1). We found that for each point increase in EHR satisfaction, job satisfaction increased by ~0.36 points both in an unadjusted model and in a model adjusted for gender, years since graduating medical school, race/ethnicity, and practice setting (Table 2).

**Table 1 Characteristics of physicians (N = 122)**

Characteristics	N(%)
Female	82 (67)
Years since graduating medical school	8.9 years (SD 17.8)
Race/Ethnicity	
White, non-Hispanic	88 (72)
Hispanic	2 (2)
African American	16 (13)
Other	16 (13)
Practice setting	
Private practice	94 (77)
Other practice setting (CHC/FQHC, hospital-based clinic, local health department)	28 (23)

**Table 2 Association of EHR satisfaction score with job satisfaction**

Association: EMR and Job satisfaction scores	Strength of association (beta)	P value
Unadjusted	0.359	< 0.0001
Adjusted <sup>a</sup>	0.361	< 0.0001

<sup>a</sup> Adjusted for gender, years since medical school graduation, race/ethnicity, and practice setting.

## DISCUSSION

We found that EHR satisfaction was associated with job satisfaction in a cross-sectional survey of physicians. Our conclusions are limited by suboptimum survey response rate. However, internal validity of the relationship between job satisfaction and EHR satisfaction should be less subject to bias than a prevalence of satisfaction analysis.

As EHRs become increasingly prevalent in primary care practices, further evaluations of how EHRs may influence clinicians' overall job satisfaction will be critically important. If clinician job satisfaction is indeed independently associated with EHR satisfaction, PCPs will need to be aware of the potential implications of purchasing an EHR. Future increased collaboration between EHR vendors and clinicians could enhance the potential of EHRs to support a clinician's daily work flow and encourage clinicians to practice medicine more safely, efficiently, and with higher job satisfaction.

## Notes

Presented at the Society for General Internal Medicine meeting on April 26<sup>th</sup>, 2013 in Denver, Colorado, USA.

## Acknowledgements

This research was supported by an NIH/HRSA training grant for Dr Jones (T32HP14001-25) and an AHRQ Infrastructure for Maintaining Primary Care Transformation (IMPACT) grant (U18 HS020940).

## REFERENCES

---

1. Patel V, Jamoom E, Hsiao CJ, Furukawa MF and Buntin M. Variation in electronic health record adoption and readiness for meaningful use, 2008–2011. *Journal of General Internal Medicine* 2013;28(7):957–64. <http://dx.doi.org/10.1007/s11606-012-2324-x>
2. Wright E and Marvel J. Electronic health records: postadoption physician satisfaction and continued use. *Health Care Management (Frederick)* 2012;31(3):259–67. <http://dx.doi.org/10.1097/HCM.0b013e3182619e90>
3. Birnberg JM, Drum ML, Huang ES *et al.* Development of a safety net medical home scale for clinics. *Journal of General Internal Medicine* 2011;26(12):1418–25. <http://dx.doi.org/10.1007/s11606-011-1767-9>