

# Barriers to electronic medical record implementation: a comparison between ophthalmology and other surgical specialties in Canada

John S.Y. Park, BSc,\* Rahul A. Sharma, MD,<sup>†</sup> Brett Poulis, MD PhD,<sup>‡</sup> Jason Noble, MD<sup>§</sup>

## ABSTRACT •

**Objective:** In the present study, the barriers limiting widespread adoption of electronic medical records (EMRs) among Canadian ophthalmologists were evaluated in comparison with physicians from other surgical specialities. The published literature regarding EMR use in ophthalmic practice was also reviewed.

**Design:** Population-based, cross-sectional study.

**Participants:** A total of 1199 Canadian surgeons participating in the 2014 National Physician Survey (NPS).

**Methods:** Data regarding speciality surgeons' adoption of EMR programs were extracted from the 2014 NPS, a nationwide survey of practicing physicians in Canada. The data were entered into a spreadsheet, and basic statistical analyses, including  $\chi^2$  analyses, were performed to compare the responses of ophthalmologists to other surgeons.

**Results:** Compared with other surgeons, ophthalmologists surveyed were significantly more likely to identify the following barriers to EMR adoption: "no suitable product for my practice" ( $p = 0.01$ ), "too costly" ( $p = 0.0006$ ), "too time consuming" ( $p < 0.0001$ ), and "planning to retire soon" ( $p = 0.001$ ). No statistically detectable differences were found between ophthalmologists and other surgeons for the following barriers: privacy concerns, reliability concerns, and lack of training.

**Conclusions:** The barriers that limit increased EMR adoption among Canadian ophthalmologists are different from those of other surgeons. This may be attributed to unique features of the field, including heavy reliance on hand-drawn figures in documentation, high patient volume, and the high costs associated with independent practice. Given the well-established benefits of EMR technology, consideration should be given to implementing strategies to mitigate these barriers. Additional research may help determine which specific improvements can be made to increase the use of EMR systems by ophthalmologists.

Electronic medical records (EMRs) have been demonstrated to offer clinicians a myriad of advantages, including improved productivity, better disease management and care coordination, and more effective preventative care and safety for patients.<sup>1,2</sup> Despite these advantages, the enthusiasm for the implementation of EMRs into medical practices has been somewhat tepid. Challenges, such as variability in the consistency and accuracy of documentation,<sup>3,4</sup> lack of time and funding to facilitate the transition to an EMR system, and lack of adequate training and support,<sup>5</sup> have been suggested as the major factors preventing more widespread adoption of EMR systems.

The adoption of EMRs into ophthalmic practices specifically has been even more limited. Based on recent data from studies of physicians in the United States, it became apparent that approximately 50% of all physicians had adopted an EMR system into their practice,<sup>6–8</sup> compared with only 34% of ophthalmology practices.<sup>9,10</sup> The barriers explaining this difference have not been fully evaluated; however, some studies suggest difficulty with clinical documentation, including the inability to draw diagrams on an EMR, may be responsible.

To date, the studies evaluating the use of EMR systems in the ophthalmic setting have only evaluated

the implementation patterns among US ophthalmologists. No studies, have examined the barriers to adoption of an EMR system among Canadian ophthalmologists. In the present study, the barriers limiting widespread adoption of an EMR system by Canadian ophthalmologists were evaluated. Furthermore, the patterns were compared with those of surgeons from other specialities to identify any unique barriers that may be present for ophthalmologists.

## METHODS

The data for the present study were extracted from the 2014 National Physician Survey (NPS), a nation-wide, self-reported, comprehensive survey of practising physicians, residents, and students. Responses that focused on the theme "use and impact of information technology" were analyzed and filtered to include only surgical specialities, namely, "Cardiovascular/Thoracic Surgery," "General Surgery," "Neurosurgery," "Obstetrics and Gynecology," "Ophthalmology," "Orthopedic Surgery," "Otolaryngology," "Plastic Surgery," and "Urology." Among this group, only participants who responded to 2 questions regarding EMR adoption were included.

© 2017 Canadian Ophthalmological Society.

Published by Elsevier Inc. All rights reserved.

<http://dx.doi.org/10.1016/j.jcjo.2017.02.018>

ISSN 0008-4182/17

The first question was “When you are capturing information about your patients, do you: (A) “use paper charts only,” (B) “use a combination of paper and electronic charts to enter and retrieve patient clinical notes,” or (C) “use exclusively electronic records to enter/retrieve patient clinical notes?” The  $\chi^2$  test was used to statistically evaluate whether the modalities used for clinical documentation varied among specialties.

Participants who chose the answer “use paper charts only” for the first question were asked a second question: “What are your reasons for not using electronic records?”; this had 9 possible answer choices: (A) “No suitable product for my practice” (B) “Too costly” (C) “Too time consuming” (D) “Privacy concerns” (E) “Reliability concerns” (F) “Lack of training” (G) “Planning to retire soon” (H) “Not available (e.g., hospital’s decision)” (I) “Other reason.” Multiple responses were accepted. The  $\chi^2$  test was used to analyze individual answer choices to statistically compare the “Ophthalmology” and “Others” groups for the number of responses selecting individual answer choices above (A–I), and the statistical significance was calculated by using the  $\chi^2$  test.

For the purpose of statistical evaluation, all surgical specialties other than Ophthalmology were grouped together into an “Others” category.

## RESULTS

In total, responses from 1199 surgeons were included in the study, of whom 147 were ophthalmologists. For specialties with a total number of responses <30, the responses were suppressed and excluded from comparison. The suppressed specialties were “Cardiovascular/Thoracic Surgery,” “Neurosurgery,” “Otolaryngology,” “Plastic Surgery,” and “Urology.” Combining absent and suppressed responses, the total number of missing responses was 304 of the 1199, leaving a total of 895 responses to be used for statistical analysis.

In response to the question “When you are capturing information about your patients...,” (question 7 in the 2014 NPS), 36.1% of “Ophthalmology” group answered “paper only” (53 of 147), 19.7% answered “EMR only” (29 of 147), and 44.2% answered “combination of paper

and EMR” (65 of 147). Conversely, 26.4% of the “Others” group answered “paper only” (278 of 1052), 22.1% answered “EMR only” (233 of 1052), and 51.4% answered “combination of paper and EMR” (541 of 1052). The  $\chi^2$  test indicated that the choice of modality used in medical documentation (EMR, paper charts, or a combination of both) varied between the “Ophthalmology” group and the “Others” group ( $p = 0.0497$ ).

In response to the question “What are your reasons for not using electronic records?” (question 7i in the 2014 NPS), the frequencies of each answer choices being selected by the “Ophthalmology” group were as follows: 15% (22 of 147) selected (A) “No suitable product for my practice”; 15% (22 of 147) selected (B) “Too costly”; 16.3% (24 of 147) selected (C) “Too time consuming”; 4.1% (6 of 147) selected (D) “Privacy concerns”; 6.8% (10 of 147) selected (E) “Reliability concerns”; 3.4% (5 of 147) selected (F) “Lack of training”; 12.9% (19/147) selected (G) “Planning to retire soon”; 5.4% (8 of 147) selected (H) “Not available (e.g., hospital’s decision)”; and 4.1% (6 of 147) selected (I) “Other reason” (Table 1).

When the aforementioned responses were compared with those of non-ophthalmology surgeons (i.e., the “Others” group), ophthalmologists were significantly more likely to identify the following barriers as germane: (A) “No suitable product for my practice” ( $p = 0.0112$ ), (B) “Too costly” ( $p = 0.0006$ ), (C) “Too time consuming” ( $p < 0.0001$ ), (G) “Planning to retire soon” ( $p = 0.0010$ ), and (I) “Other reason” ( $p = 0.0036$ ). The response option (H) “Not available (e.g., hospital’s decision)” was identified, with statistical significance, as a barrier less commonly for “Ophthalmology” than for “Others” ( $p = 0.0235$ ). The following reasons were not significantly different between the two groups: (D) “Privacy concerns” ( $p = 0.4090$ ), (E) “Reliability concerns” ( $p = 0.1342$ ), and (F) “Lack of training” ( $p = 0.8406$ ).

## DISCUSSION

Despite its supposed advantages, many physicians have been slow to implement an EMR system into their practices. Among the entire physician population, the

**Table 1—Frequencies of answer choices selected by “Ophthalmology” versus “Others” in response to the question “What are your reasons for not using electronic records?” (question 7i in the 2014 NPS)**

Answer choice	Ophthalmology	Others	<i>p</i>
(A) No suitable product for my practice	15.0% (22/147)	8.3% (62/748)	0.01
(B) Too costly	15.0% (22/147)	6.6% (49/748)	0.001
(C) Too time consuming	16.3% (24/147)	6.6% (49/748)	< 0.0001
(D) Privacy concerns	4.1% (6/147)	2.8% (21/748)	0.41
(E) Reliability concerns	6.8% (10/147)	4.0% (30/748)	0.13
(F) Lack of training	3.4% (5/147)	3.7% (28/748)	0.84
(G) Planning to retire soon	12.9% (19/147)	5.5% (41/748)	0.001
(H) Not available (e.g., hospital's decision)	5.4% (8/147)	11.8% (88/748)	0.02
(I) Other reason	4.1% (6/147)	0.9% (7/748)	0.003

Note: Multiple responses were accepted and  $\chi^2$  analyses were performed to compare the responses of ophthalmologists with those of other surgeons.

\*Statistically significant ( $\chi^2$ ,  $p < 0.05$ ).

Download English Version:

<https://daneshyari.com/en/article/5703642>

Download Persian Version:

<https://daneshyari.com/article/5703642>

[Daneshyari.com](https://daneshyari.com)