The Impact of Electronic Medical Records on Otolaryngologist’s Productivity in the Ambulatory Setting

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Abstract

Objective: To examine the impact of the electronic medical record (EMR) on otolaryngologist’s productivity in the ambulatory setting.

Methods: We examined the impact of transitioning from a paper chart system to EMR at our tertiary care medical center otolaryngology ambulatory setting. We examined a total of 5 practitioners in the ambulatory setting from January 2014 – August 2014, 4 months prior and 4 months after transitioning to EMR on May 2014. Productivity was measured using work relative value units (wRVUs) and the average number of clinic visits per practitioner per week.

Results: There was a statistically significant decrease in wRVU of otolaryngology practitioners in the ambulatory setting after transitioning to EMR when comparing the average wRVU per month in the 4 month period prior to and after the change (872.8 average wRVU for all practitioners per month prior to EMR vs 770.2 with EMR, p=0.0064). There was, however, no statistically significant change in the average number of clinic visits for all practitioner per week after transitioning to EMR (162.1 clinic visits per week prior to EMR vs 164.7 with EMR, p=0.2646).

Conclusions: EMR use at our tertiary care medical center otolaryngology ambulatory setting resulted in a decrease in physician productivity as measured by the average wRVU but no change in the number of clinic visits in the 4 month period afterwards. This suggests that transitioning to EMR may result in a decrease in otolaryngologist’s productivity in the period immediately after the change without affecting clinic volume. However, the long term effects on efficiency and doctor-patient relationship needs to be elucidated.

Introduction

- In the current healthcare era, many medical practices are transitioning into a new electronic health system.
- However, since it is an uncharted territory and can have unpredictable affects on physician productivity and patient care, many facilities remain reluctant to make this transition.
- The purpose of our study was to examine the impact of transitioning into an electronic medical record on physician productivity in an ambulatory tertiary care otolaryngology clinic.

Methods

- We examined 5 part or full time otolaryngologists in the ambulatory setting for an 8 month period (4 months prior and 4 months after transitioning to the new EMR). All physicians had been in practice for 4 years.
- Physician productivity was measured using wRVUs and the average number of clinic visits for each practitioner.
- Practitioners who worked part time or did not have at least 4 months of pre- and post-implementation visit volume and wRVU data were excluded.

<table>
<thead>
<tr>
<th></th>
<th>Pre-EMR weekly wRVU average</th>
<th>Month 1 after transition (p-value)</th>
<th>Month 2 after transition (p-value)</th>
<th>Month 3 after transition (p-value)</th>
<th>Month 4 after transition (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD #1</td>
<td>53.2</td>
<td>42.7 (0.019)</td>
<td>41.6 (0.015)</td>
<td>29.3 (0.002)</td>
<td>39.1 (0.008)</td>
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<tr>
<td>MD #2</td>
<td>72.3</td>
<td>58.9 (0.210)</td>
<td>64.8 (0.439)</td>
<td>74.3 (0.832)</td>
<td>83.8 (0.266)</td>
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<tr>
<td>MD #3</td>
<td>149.8</td>
<td>156.7 (0.678)</td>
<td>132.4 (0.332)</td>
<td>162.9 (0.446)</td>
<td>156.3 (0.70)</td>
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<tr>
<td>MD #4</td>
<td>65.0</td>
<td>37.2 (0.001)</td>
<td>51.1 (0.013)</td>
<td>67.1 (0.469)</td>
<td>64.1 (0.768)</td>
</tr>
<tr>
<td>MD #5</td>
<td>80.9</td>
<td>24.1 (0.093)</td>
<td>13.6 (0.064)</td>
<td>16.3 (0.070)</td>
<td>20.7 (0.082)</td>
</tr>
</tbody>
</table>

Results

- There was a statistically significant decrease in wRVU of otolaryngology practitioners in the ambulatory setting after transitioning to EMR when comparing the average wRVU per month in the 4 month period prior to and after the change (872.8 average wRVU for all practitioners per month prior to EMR vs 770.2 with EMR, p=0.0064).
- Each individual practitioner with their weekly wRVU and clinic visits were compared using a one sample t-test in the months after the switch to EMR. The clinically significant results are shown in bold in the table.

Conclusion

- EMR use at our tertiary care medical center otolaryngology ambulatory setting resulted in a decrease in physician productivity as measured by the average wRVU. Multiple practitioners had an individual drop in wRVU and clinic visits after the change to EMR.
- Overall, our data supports that utilizing a new EMR appears to result in a short term decrease in physician efficiency in some physicians.

Future

- The long term effects of transitioning to an EMR system in a clinical otolaryngologist’s practice needs to be elucidated.
- Future studies should examine the effects on efficiency and doctor-patient relationship as well as the doctor’s comfort with EMR.