“There’s An App For That”: Use of a Smartphone App for ICU Rotation Orientation

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I do not have an affiliation (financial or otherwise) with a pharmaceutical, medical device or communications organization.

Je n’ai aucune affiliation (financière ou autre) avec une entreprise pharmaceutique, un fabricant d’appareils médicaux ou un cabinet de communication.
Background

• Smartphones have become omnipresent within the practice of modern-day medicine

• National Physician Survey 2014, of 9934 physicians:
  • 50.2% use apps as part of their practice
  • Number increased to 74.8% in <35-year-old age demographic

• Extensive breadth of possible uses
Background

• Effective orientation to a job is a crucial part of employee success

Understand fit within organization

Hasten and improve productivity
Aim

• Department of Critical Care at Dalhousie created a smartphone app (Halifax ICU) to address concerns regarding the adequacy of ICU rotation orientation

• **Study Aim:** identify learner perceptions of ICU orientation before and after release of the app
Methods – App Development

• Conceived and designed by author OL, with funding from the Department of Critical Care.

• App built by development company after a bidding process

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost (Canadian $)</th>
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<tbody>
<tr>
<td>App Development</td>
<td>1200</td>
</tr>
<tr>
<td>Developer Account (Apple App Store)</td>
<td>99/year</td>
</tr>
<tr>
<td>Android Availability Fee</td>
<td>25</td>
</tr>
<tr>
<td>Amazon Web Server Housing</td>
<td>180/year</td>
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</tbody>
</table>

• Updated weekly (~15 min/week)
Methods - Assessment

• Convenience sample of residents and medical students
• Group sizes: 66 pre-app vs 77 post-app
• One-page survey to assess satisfaction with orientation materials
  • 5-point Likert scale
• Statistical analysis: Descriptive/Mann Whitney U Test
Survey

1. Were your orientation materials sufficient?
2. How did you access orientation materials?
3. How did you learn about the required paperwork for patient admission/transfer/discharge?
4. What was the most helpful resource for you regarding orientation to the ICU?

Post App

1. Did you try the smart phone ICU app?
2. How useful did you find the smart phone ICU app?
Usage Statistics

• 75% of respondents tried the app

• Number of known installs at time of writing:
  • Android: 85
  • Apple: 203

• Average number of sessions per active device on Apple systems was between 5-7
Results

How Orientation Materials Were Accessed

<table>
<thead>
<tr>
<th>Method</th>
<th>Pre-App</th>
<th>Post-App</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>One4S</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>Paper copy</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Did not look at/receive</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>orientation materials</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smart phone ICU app</td>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>

Ranking of Satisfaction with Orientation Materials

<table>
<thead>
<tr>
<th>Satisfaction Level</th>
<th>Pre-App</th>
<th>Post-App</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not At All</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Adequate</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td>Excellent</td>
<td>10</td>
<td>20</td>
</tr>
</tbody>
</table>
Results

Resources to Learn About Required Paperwork

Most Helpful Resource for ICU Orientation

Ranking of Perceived Smart Phone ICU App Usefulness
Discussion

• Other studies have shown promise in the effectiveness of apps in education and as a hub for standardized algorithms
  • Ongoing area of research

Future Directions:

• Does perception of better orientation translate to better performance?
Conclusion

An ICU orientation app resulted in increased satisfaction with ICU orientation materials. There is potential to improve the experience of medical learners with this popular technology.
Select References


• Mishra JM, Straight P. Employee orientation the key to lasting and productive results. Health Care Supervisor. 1993;11 (3).
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