iPad use during ward rounds: an observational study

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Introduction

- Paper records are being replaced by EHRs
- The ability to access information in real-time at the patient bedside is often promoted as a particular advantage of EHRs
- In a previous study of the use of computers during ward-rounds, we observed only 17% of computer-use taking place at the patient bedside
- Doctors reported that integrating a laptop on a trolley into a patient encounter was practically difficult

1. Baysari MT et al 2011, JAMIA 18:754-9
iPads

- iPads = portable miniaturised devices that can match the mobility of paper?
- Research on iPads limited to surveys (doctors & patients) in the US
Aim

To determine how iPads are integrated in doctors’ workflow during ward rounds
Setting

- 350-bed teaching hospital
- **Handwritten** clinical notes
- **Electronic** medication management, test ordering and results viewing
- Read-only access to results and medications on iPads (no access to radiology)
Methods

- 10 speciality teams participated
  - 27 senior consultants were invited to participate
  - 16 agreed to take part
  - 10 were selected (those who conducted regular ward rounds)
- A 30-min iPad training session
- Observations and interviews
Training

- iPad functionality demonstrated
  - Training adjusted to accommodate skill level of participant
- Doctors shown how to locate patient lists and access test results and medications
Observations

- Teams were observed on at least 4 ward rounds (50 patient interactions per team)

Documented:
- **Type** of device: desktop, COW or iPad
- **Location**: patients’ rooms, corridor
- **Information** accessed: test results, medications, radiology, clinical reports, observations, patient information, patient notes
Interviews

- Observed doctors participated in a semi-structured interview
- Questions were designed to assess doctors’ opinions of and satisfaction with the iPad
- Interviews were independently analysed by two researchers
- Content analysis was undertaken
Results

- 19 doctors were observed
- 525 patient interactions
- 77.3 hours of observations
Did we observe this?

Results

- Devices were used 1074 times

<table>
<thead>
<tr>
<th>Information accessed</th>
<th>iPad</th>
<th>PC</th>
<th>COW</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient information</td>
<td>58</td>
<td>12</td>
<td>60</td>
<td>130 (12.1%)</td>
</tr>
<tr>
<td>Test results</td>
<td>314</td>
<td>30</td>
<td>76</td>
<td>420 (39.1%)</td>
</tr>
<tr>
<td>Medications</td>
<td>181</td>
<td>21</td>
<td>196</td>
<td>398 (37.1%)</td>
</tr>
<tr>
<td>Radiology</td>
<td>0*</td>
<td>22</td>
<td>42</td>
<td>64 (6.0%)</td>
</tr>
<tr>
<td>Reports</td>
<td>51</td>
<td>0</td>
<td>11</td>
<td>62 (5.8%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>604 (56.2%)</strong></td>
<td><strong>85 (7.9%)</strong></td>
<td><strong>385 (35.85%)</strong></td>
<td><strong>1074</strong></td>
</tr>
</tbody>
</table>
Results

- Advantages of iPad

1. Portability

I found it really helpful if we were moving and we had an outlying patient or a consult in ED. We would be talking about the patient while we moved. So it made it much more efficient once we got to the patient.

http://www.ipadenclosures.com/php-oak/themes/global/admin_images/blog/iPad_doctor_medical.jpg
Results

- Advantages of iPad

1. Portability

<table>
<thead>
<tr>
<th>Where was information accessed?</th>
<th>Corridor (n=715; 66.6%)</th>
<th>Patient room (n=359; 33.4%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>iPads (n=379; 53.0%)</td>
<td>iPads (n=251; 69.9%)</td>
<td></td>
</tr>
</tbody>
</table>

Results

- Advantages of iPad
  2. “Easy, if not easier” to access test results and medication lists

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Results

- Main disadvantage
  - Limited functionality = inability to access radiology and order medications

“Any of the IT services deployed on this campus need to be mindful of mobile users and there needs to be easier access to the hospital network ... it should be a simple point and click”
Results

- Other disadvantages
  - Infection control
  - Security (misplacing iPads)
  - Size and weight (stated preference for iPad mini)
Discussion

- One of the first studies to examine how doctors use iPads on ward rounds
  - Well integrated in doctors’ workflow
  - Used most frequently to view test results and medications
  - Device of choice in patient rooms
Conclusion

- iPads are valuable in accessing information at the point of care
- Read-only functionality not enough!
Thank you!

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