Paving the Way for EHR Usability

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TURF Framework for EHR Usability

Rapid Usability Evaluation

Expert Review

Keystroke Level Modeling
Findings from Expert Reviews

Average Number of Usability Problems per Meaningful Use Objective

- Smoking: 8.5
- VS: 11.7
- Allergy List: 17.2
- Med List: 17.7
- Ecopy: 18.0
- Med List: 18.3
- Med List: 20.5
- Med List: 21.5
- Ecopy: 24.8
- CPOE: 34.0
- CPOE: 51.5
- CPOE: 54.4

1380 Usability Problems
Average Severity = 2.46
Findings from Keystroke Level Modeling

Mean Time on Task (seconds)

- BMI: 22
- Demographics: 44
- E Prescribe: 108
- Allergy List: 118
- Med List: 128
- Clinical Summary: 487
Ivory Tower to “Real World”
1. Documentation of the User Centered Design (UCD) process
2. Summative Testing (Reporting in Common Industry Format (NISTIR 7742))

Applicable to 8 MU Objectives:

<table>
<thead>
<tr>
<th>Computerized Provider Order Entry</th>
<th>Drug–drug/drug–allergy interaction checks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication List</td>
<td>Medication Allergy List</td>
</tr>
<tr>
<td>Clinical Decision Support</td>
<td>Clinical information reconciliation</td>
</tr>
<tr>
<td>Electronic Prescribing</td>
<td>Electronic Medication Administration Record</td>
</tr>
</tbody>
</table>
EHR Vendors with few (or no) expertise in human factors, safety or UCD

- Vendor A: Small three person team that outsources development work
- Vendor B: Medium sized EHR development team (~100 staff)

EHR Implementation Sites
EHR USABILITY toolkit

TURF provides an integrated toolkit for usability evaluation, testing, measurement and design.

- User Testing
- Heuristic Evaluation
- Analytics
- Training and Tutorials

TurfUsability.com
"I found TURF to be a versatile, robust tool for EHR usability analysis. Its seeming complexity masks an ability to work in various settings and tackle hosts of problems."

"If you aren’t happy with your EHR’s interface, TURF gives a remarkable tool to show what’s wrong and what you want. Indeed, with some adaptation you could use TURF to analyze almost any program’s usability. Not bad for a freebie."
TURF Team

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