Checkpoint Presentation
Automated VTE Quality Assurance Tool

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Project Background

- Venous Thromboembolism (VTE)
  - Combination of Deep Vein Thrombosis (DVT) and Pulmonary Embolism (PE)
  - Responsible for 800,000 deaths each year worldwide
- ⅔ of the cases happen during hospitalization

Problem: In 2005, only 32% of patients received risk-appropriate VTE prophylaxis in the Johns Hopkins Hospital. After introduction of a VTE order set, compliance only increased to 65%.
Project Statement

- Develop a clinician review tool that keeps track of suggested versus prescribed prophylaxis treatment
- Ranks clinician adherence to risk-appropriate prophylaxis prescription
- Provides automated continuous tracking of clinician’s treatment procedures on a monthly and annual basis
- **Purpose:** Improve prescribed risk-appropriate VTE prophylaxis compliance to prevent VTE onset.
Deliverables

Minimum:
- Basic web tool ranking clinician adherence

Expected:
- Incorporate advanced features
  - Trends
  - Administrator view
  - History of incorrect prophylaxis treatment
- Create manual and troubleshooting documentation

Maximum:
- Achievements for positive reinforcement
- Transition Quality Assurance Tool to other hospital scenarios
Responsibilities

Stephen: Front-End
1. Receive approval for mock-up design
2. Design GUI with Bootstrap

Vamsi: Back-End
1. Acclimate to VTE data
2. Model back-end database
3. Design database
4. Test database with data
Current Status - Certifications

- HIPAA for Research
- Conflict of Interest
- Basic Human Subjects Research
## Current Status - Mockup 1

![Mockup Image]

### VTE Prophylaxis Report

**February 2015 VTE Prophylaxis Report for: House, Gregory**

**Appropriate VTE Prophylaxis Prescribed (Monthly): 8/10**

**Appropriate VTE Prophylaxis Prescribed (Cumulative): 46/51**

**Rank: 11/11**

<table>
<thead>
<tr>
<th>Patient</th>
<th>VTE Risk Factors</th>
<th>Bleeding Risk Factors</th>
<th>Risk Status</th>
<th>Appropriate Prophylaxis</th>
<th>Prophylaxis you prescribed</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smith, John</td>
<td>Age &gt; 80y Previous VTE</td>
<td>None</td>
<td>High w/OUT Contraindications</td>
<td>Heparin 5000 u SC 1/12H</td>
<td>Heparin 5000 u SC 1/12H</td>
<td>UNDER prophylaxed</td>
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<tr>
<td>Jones, Mary</td>
<td>None</td>
<td>Active Bleeding</td>
<td>Moderate W/TH Contraindications</td>
<td>Heparin 5000 u SC 1/12H</td>
<td>Heparin 5000 u SC 1/12H</td>
<td>OVER prophylaxed</td>
</tr>
</tbody>
</table>

**Rank**

<table>
<thead>
<tr>
<th>Number</th>
<th>Compliance</th>
<th>Number</th>
<th>Compliance</th>
</tr>
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<td>1</td>
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</tr>
<tr>
<td>1</td>
<td>4</td>
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<tr>
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<td>11</td>
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<td>6</td>
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</tr>
<tr>
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<td>10</td>
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</tr>
<tr>
<td>12</td>
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<tr>
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<td>75</td>
<td>93.3%</td>
</tr>
</tbody>
</table>

**Monthly History**

- **Overall**

- **YOU**

**Cumulative History**

- **2014**
- **2015**
Problems

TIME!

JOHNS HOPKINS APPLIED PHYSICS LABORATORY

JOHNS HOPKINS MEDICINE
Dependencies

- Certifications - completed
- Code School to learn Ruby on Rails - completed
- JIRA, Stash, Confluence - pending
- Prophylaxis data - pending
- Web Hosting server - pending
Updated Timeline

- Acquire certifications: 2/26/2015 - 3/10/2015
- Define new project scope: 3/1/2015 - 3/10/2015
- Use cases and requirements: 3/11/2015 - 3/14/2015
- Develop basic GUI for web tool: 3/23/2015 - 4/10/2015
- Add advanced functionality: 4/10/2015 - 4/25/2015
- QA user testing: 4/21/2015 - 4/28/2015
- Application to other hospital QA scenarios: 5/1/2015 - 5/8/2015
Summary

1. Necessity for this tool is more present than ever
2. Next steps: design web tool and database
3. User feedback is imperative