Clinical Safety & Effectiveness
Cohort #15
Rolling Out a New Physician On-Call System Within Hospital Medicine at University Hospital

CENTER FOR PATIENT SAFETY & HEALTH POLICY

UT Health Science Center
SAN ANTONIO
Aim Statement

• The aim of this project is to continuously improve the performance of a new physician on-call system that is being rolled out in the Hospital Medicine division at University Hospital on November 4, 2014.

• The goal is that by January 15, 2015, pages are answered on the first provider notification at a rate of ≥90%.
The Team

• Team
  – Michael Shoffeitt, MD – Assistant Professor, Hospital Medicine
  – Angela Zarnoti – Business Administrator, Hospital Medicine
  – Sandra Stough – Supervisor, Communications Department
  – Kami Stepanik – Patient Safety Officer

• Facilitator
  – Hope Nora, PhD

• Sponsor
  – Luci Leykum, MD, MBA – Division Chief, Hospital Medicine
Project Milestones

- Team Created: 9/2014
- AIM statement created: Finalized 11/2014
- Scheduled Team Meetings: 9/2014 - 11/2014
- Interventions Implemented: 11/4/2014
- Data Analysis: 11/4 - 12/3/2014
- CS&E Presentation: 1/23/2015
Background

• Current physician on-call system is cumbersome to input and does not allow for timely updates

• Nobody in a leadership position has ownership to enforce that schedules are accurate, complete, and posted on time

• It is important for this information to be correct so patients receive the care they need in a timely manner
PBX = Private Branch Exchange (i.e., “the operators”)
HCW = healthcare worker
Too many barriers to reach correct person on call.

**MATERIALS/STAFFING**

- Clinician understaffing
  - Leads to shifts filled late
- PBX understaffing
  - Leads to inability to input shifts on time
- Departments do not always send monthly schedule on time
- PBX does not always upload schedule in timely manner
  - In addition to time and staffing concerns, organizational challenges w/ distribution of work
- Departments do not always provide a complete schedule (e.g., including faculty information)

**PROCESS**

- Multiple room for errors in translation or interpretation between creation and posting of schedule
  - Departments make schedule internally, then reformat to a view
  - PBX can interpret, then PBX interprets the schedule and performs cumbersome data entry
- Departments do not always update PBX with changes in schedule or do so in a timely manner
- No means of enforcement for late or incomplete schedules
  - PBX placed into an enforcement role

**PEOPLE**

- Departments do not always provide monthly schedule on time
- PBX does not always upload schedule in timely manner
- Departments do not always update PBX with changes in schedule or do so in a timely manner
- No means of enforcement for late or incomplete schedules
  - PBX placed into an enforcement role

**POLICY**
Prior Process: Scheduling Guidelines

University Health System

MONTHLY PROVIDER ON-CALL SUBMISSION GUIDELINES FOR ECHO

1. On-Call Schedules should be submitted by the 15th of the prior month.

2. Schedules are to be e-mailed to communications@uhs-sa.com and must include the following information:
Prior Process: Reminder e-mail

From: [Redacted]
Sent: Wednesday, August 27, 2014 5:45 AM
To: [Redacted]
Subject: SEPTEMBER PHYSICIAN ON CALL SCHEDULES

REMINDER:

If you have not already done so, please send your September Physician On Call Schedules to the Communications e-mail address: Communications@uhs-sa.com at your earliest convenience so we can make sure your department schedules are entered into the ECHO system in time for the first of month.

Thank you,
Prior Process: Errors in Transcription

<table>
<thead>
<tr>
<th>Fri</th>
<th>Sat</th>
</tr>
</thead>
<tbody>
<tr>
<td>5p-7a: Cheema</td>
<td>6  CALL</td>
</tr>
<tr>
<td>7a-5p: Solis-Herrera, Easterling, Singh</td>
<td>7a-11a: Moussa, Singh, Easterling</td>
</tr>
<tr>
<td>7p-7a: Cheema</td>
<td>11a-5p: Moussa, Singh, Easterling</td>
</tr>
<tr>
<td>7p-7a: Cheema</td>
<td>7p-7a: Cheema</td>
</tr>
</tbody>
</table>

19 CALL
7a-5p: Dreaden, Galagan, Cueva, Corsini
5p-7p: Dreaden, Galagan, Cueva, Corsini
5p-7a: Cheema
Prior Process: Missing Provider Info

UHS On-Call Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Staff</th>
<th>Status</th>
<th>UHS Number</th>
<th>Cell Number</th>
<th>Pager Number</th>
<th>Call Start</th>
<th>Call End</th>
</tr>
</thead>
</table>

CDU HOSPITALIST / PA

10/30/2014 / 20:50

No On-Call Information available for the service, date and time indicated above.

203-8765 24 HOUR PAGER

Please call UHS Operators at 358-4000 or UHS Professional Staff Services at 358-2015 to correct any information on this page.
Proposed Intervention

• Departments directly input their own schedules through a new product

• Central functioning of product includes automatic escalation tree (e.g., try intern X # of times -> try senior resident, etc.)

• Providers receive notifications of incoming “pages” through an app on their smartphone
<table>
<thead>
<tr>
<th>Main</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CDU</strong></td>
<td>Maria Leal</td>
</tr>
<tr>
<td><strong>Triage Hospitalist (Incl. Admissions)</strong></td>
<td>Christine Andre</td>
</tr>
<tr>
<td><strong>Team 7</strong></td>
<td>Mary Kraus</td>
</tr>
<tr>
<td><strong>Team 8</strong></td>
<td>Jennifer Sprowls</td>
</tr>
</tbody>
</table>
Testing urgent message.

Details

Margery Guido
Hospital Medicine - University Health System

Callback Number: [Redacted]

Folder
CDU Master

Sent At
3:13 pm

Status
Pending

Message ID
#6009

Notification History

Michael Shoffeitt
Pending
3:13 pm
1 Attempt
Too many barriers to reach correct person on call.

**NEW PROCESS**

**PROCESS**
- Schedule is cumbersome to input
  - Requires extensive training and ongoing assistance from vendor to maintain schedules
- Providers need multiple forms of identification to return notifications

**PEOPLE**
- Need to set up multiple providers including...
  - Obtain cell phone, pager # and company
  - Individual training on multiple functions: acknowledge pages, transfer a page, transfer a shift assignment

**TECHNOLOGY**
- Areas of the hospital with poor 3G/4G, WiFi, or cell coverage
- App actively in development with crash bugs
- System not clearly designed to handle some scheduling patterns common on academic medical services

**RESOURCES**
- Providers w/o an iOS or Android smartphone or one new enough to run app
- Unintended errors in routing of “pages” through automatic escalation tree
- Small company without dedicated 24/7 technical support staff
- System not clearly designed to handle some scheduling patterns common on academic medical services
Internet Access for our Patients and Guests

- Fast, free, reliable access to the Internet
- Easy connection process
- 24/7/365 Customer Support

☐ I agree to the Terms of Service and Acceptable Use Policy

http://nmd.uhsbexar.aus.wayport.net/index.adp?MacAddr=3C%3a1…glid=121275&UserAgent=&ProxyHost=&TunnellId=568835&VlanId=0

Click To Connect
Implementing the Change

• Preparation for go-live:
  – Training of scheduler
  – Training of Hospital Medicine staff and operators
  – Procurement of provider cell and pager numbers
  – Work with IT
• November 4 go-live
• Ongoing troubleshooting with vendor and with Hospital Medicine staff
Results

UCL: 0.990
CL: 0.685
LCL: 0.380

Percent Pages Acknowledged on First Notification

Nov 4 - Dec 3
History of the Pilot

• On 11/18/2014, work group recommended that UH leadership discontinue pilot

• End of pilot announced on 12/3/2014

• Hospital Medicine reverted to old system 12/5/2014
Return on Investment

Per hospital CMO office:

• Cost: Purchase of trial

• Savings:
  – Revealed underlying hospital systems problems
  – Learned this product not a good fit with limited rollout
  – Learned this company not a good fit for other products they were demo’ing to hospital
Conclusion/What’s Next

• Search committee now researching other products and regularly meeting

• Ongoing efforts to improve WiFi stability and 3G/4G coverage

• Ongoing efforts to improve Professional Staff Services database of provider contact info
Thank you!