Improving Safety and Quality of Paging Communication

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Background

- Paging is a primary mode of communication in hospitals.

- It is asynchronous and often inconsistent.

- Children’s Hospital of Wisconsin (CHW) previously did not have a standardized paging format.

- Care Team Members (CTMs) including trainees and faculty often noted pages to be missing key information.

- Few studies exist to demonstrate best and safest paging practices.
Our Project

• Project motivation:

  – Feedback from attendings, residents and RN’s receiving pages with missing information or not getting expected response from page recipients.

  – Concern for compromised patient safety with poor paging practices
• “Hello, please call 6480 regarding consult for patient with prolonged fever. Thanks, Mary”
• “Hi, John has a fever, giving Tylenol. Thanks, Sarah 266-8484”
Send a Page

**NOTE:** This web page is refreshed every 5 minutes. If you do not complete the form below and click the Send button within 5 minutes, you will lose all information you have already entered.

**The person you’re paging:**

**The pager number:**

**Message - Limit 230 Characters:**

Note: Include the entire call back number, including area code and phone number (xxx-xxx-xxxx).

Click here to page someone with an USA Mobility pager who isn’t in the directory. You must know their pager number.

Click here to page someone with an American Messaging pager. You must know their pager number.

Search employee directory

Go to pager listing
Primary Aim

• Improve communication via usage of a standardized paging format containing all 6 key elements to 90% by June 2017

• Key elements include:
  1. Sender's first name
  2. Sender’s last name
  3. Sender’s 7 digit call-back number
  4. Patient’s first or last name
  5. Patient’s room number or Medical Record Number (MRN)
  6. Urgency wording (FYI, call or come)
Secondary Aim

- Improve end user satisfaction with paging communication to average of 4.5 on a 5 point Likert scale by June 2017
Methods

• From June 2015 – February 2017 pages sent to resident teams, surgery first call and one infectious disease attending were analyzed monthly by QI team (5 residents)
Outcome Measures

• Primary:
  – Percent of pages containing all 6 key elements

• Secondary:
  – Average Provider satisfaction as rated on a 5-point Likert Scale
  – Response alignment
Process Measures

- Percent of pages containing individual key elements
  1. Sender's first name
  2. Sender’s last name
  3. Sender’s 7 digit call-back number
  4. Patient’s first or last name
  5. Patient’s room number or Medical Record Number (MRN)
  6. Urgency wording (FYI, call or come)
Balancing Measure

- Average number of pages sent per day
Timeline

- **Sept 2014**
  - Identified need for project

- **June 2015**
  - Developed standard paging format
  - Gathered baseline data

- **Sept 2015 - Oct 2016**
  - Recurrent provider education (verbal, written and posted on website)
  - Gaining hospital leadership buy in

- **July 2017**
  - **System wide change** - Forcing functions on paging intranet
Interventions

• Develop standard paging format
• Recurrent provider education
  – A: Verbal announcements to housestaff and RNs, informational flyers posted regarding paging etiquette
  – B: Medical student orientation
  – C: RN QI meeting presentations
  – D: Reminder on paging website to include elements
  – E: RN verbal updates
• Forcing functions on paging intranet
CHW Pager Etiquette
Please use the FYI / Come / Call Paging System:

Always include:
- Your First and Last name
- Pts First/Last name & Rm #
- Your full 7 digit phone #

FYI: if providing information only. Use when you do not need/expect a call back.

FYI: John Doe in Rm 1199’s parents are here and would like an update. Sarah Smith RN 266-8511. Call with any ?’s

Call: if you do need a phone call/discussion regarding a question or concern.

Call: Jaime Jones (red team intern) at 266-8511 Re: John Doe in Rm 1199, question re: new antibiotic.

Come: if you require timely bedside evaluation or assistance. Provide a brief description of your concern.

Come: Rm 1199 John Doe, Pt with new onset increased WOB after antibiotic dose. Scott Sawyer SMS 266-8511
Primary Outcome Measure:
Percent of Pages Containing 6/6 Key Elements

P Chart

- CL = 13.1%
- CL = 3.4%

Months:
- Jun-15 [n=36]
- Jul-15 [n=76]
- Aug-15 [n=344]
- Sep-15 [n=109]
- Oct-15 [n=489]
- Nov-15 [n=160]
- Dec-15 [n=192]
- Jan-16 [n=119]
- Feb-16 [n=312]
- Mar-16 [n=112]
- Apr-16 [n=261]
- May-16 [n=91]
- Jun-16 [n=223]
- Jul-16 [n=215]
- Aug-16 [n=139]
- Sep-16 [n=159]
- Oct-16 [n=126]
- Nov-16 [n=128]
- Dec-16 [n=215]
- Jan-17 [n=223]
- Feb-17 [n=215]
Secondary Outcome Measure: Average Provider Paging Satisfaction

**Run Chart**

1: Very poor, 2: Poor, 3: Intermediate, 4: Good, 5: Very Good
Future Analysis

• Plan for analysis of secondary outcome measure:
  – Frequency of alignment of sender’s intent and recipient’s response
Process Measure: Percent of pages containing patient room or MRN

P Chart

Percent

CL = 79.9%

June-15 \[n=36\], July-15 \[n=76\], August-15 \[n=344\], September-15 \[n=109\], December-15 \[n=489\], January-16 \[n=224\], February-16 \[n=160\], March-16 \[n=192\], April-16 \[n=119\], May-16 \[n=312\], June-16 \[n=112\], July-16 \[n=91\], August-16 \[n=261\], October-16 \[n=139\], November-16 \[n=159\], December-16 \[n=126\], January-17 \[n=223\], February-17 \[n=215\].

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**Process Measure:**
Percent Pages Containing Sender's Last Name

P Chart

- **CL=32.1%**
- **CL=50.97**

The chart tracks the percentage of pages containing the sender's last name from June 2015 to February 2017, with specific data points for each month. The control limits (UCL and LCL) are also indicated on the chart.
Process Measure:
Percent of pages containing FYI/Call/Come

P Chart

Percent

<table>
<thead>
<tr>
<th>Month</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jun-15</td>
<td>36</td>
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<td>Jul-15</td>
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</tbody>
</table>

CL=46.8%
Balancing Measure: Average Number of Pages Sent

Run Chart

1: 0-5, 2: 5-10, 3: 10-15, 4: 15-20, 5: 20+

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Conclusions

• Special cause improvements have been noted in both inclusion of all 6 critical elements and individual elements.

• Our balancing measure of number of pages sent per day has remained unchanged.

• Change in behavior is difficult to achieve with educational interventions alone.

• With systems level changes currently being implemented, further improvement is expected.
Send a Page

NOTE: This web page is refreshed every 5 minutes. If you do not complete the form below and click the Send button within 5 minutes, you will lose all information you have already entered.

The person you're paging: [Redacted]
The pager number: [Redacted]

Message - Limit 230
Characters:

Note: Include the entire callback number, including area code and phone number (xxx-xxx-xxxx).

Click here to page someone with an USA Mobility pager who isn't in the directory. You must know their pager number.

Click here to page someone with an American Messaging pager. You must know their pager number.

Search employee directory
Go to pager listing
June 2016

The person you’re paging: [Redacted]
The pager number: [Redacted]

Be sure to include the following:

- Your first AND last name
- Your call back number - including area code and phone number (xxx-xxx-xxxx)
- FYI, Call or Come (to indicate the desired response)

Message: (Limit 230 Characters)

Character Count: 0
Person you're paging: Schmitz MD, Anna H
The pager number: 414-222-2015
* Requested Action: ⊗ FYI
⊙ Call Back
⊙ Come Now
⊙ Consult
⊙ Operating Room STAT

* Sender First Name: Sarah
* Sender Last Name: Smith

* Sender Phone (10 digits): 414-266-3376 414-266-6262

Patient First Name: Joe
Patient Location/MRN: 1202

* Message: Limit 230 Characters - ALL fields are counted.

Pt febrile to 39F.

* = required field.

Text of page: nn: FYI: re: Joe (1202)
Pt febrile to 39F.
Sarah Smith 414-266-6262

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Hover Info

- FYI: sender is sending information only, no call back expected

- Call back: Sender expects a call back from the recipient

- Come Now: Sender is informing the recipient that they are requested at bedside. This does not supersede calling an RRT or code

- Consult: Please indicate how quickly the page should be returned. For emergent consults: 15 minutes, for urgent or routine: 30 minutes

- Operating Room Stat: for O.R. use only
Future Interventions

• EDTC, Trauma and PICU Code pagers (not all information required)

• Ambulatory paging (ie patient ready in rm 4)

• Starting this month, we will begin collecting paging data and sending a hospital wide satisfaction survey
Lessons Learned

• Develop a strong team with a variety of backgrounds
  – Establish buy-in from leadership

• Understanding all end users impacted
  – Off site campuses, outpatient, code pagers, group pagers

• Appreciate all feedback, but consider changes carefully

• Persist through PDSA cycles, be open to an iterative process

• Re-focus on the goal: patient safety and efficiency of care
Questions?