I-PASS: Improving Emergency Department Change-of-Shift Transitions of Care Using a Standardized Communication Tool

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The Team

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  – Rose Ramos, Team Member
  – Christopher Gelabert, Team Member
  – Meera Gebrael, Team Member
  – Sherry Martin, Facilitator

• Department Sponsors
  – Bruce Adams, MD, Professor & Founding Chair
  – Andrew Muck, MD, Associate Professor & Interim Chair
    Department of Emergency Medicine
Background

• Emergency Department (ED) Care
  – 137 million visits annually in US
  – Time-pressure
  – Uncertainty

• ED Transfers of care (i.e., handoffs)
  – Uniquely susceptible to error
  – Lapses in Info
  – Disruptions

• May adversely affect patient care
  – Delays in Care
  – Patient harm
Overall Vision

• Standardize communications
• Confirm “key” info communicated
• Prevent harm
Aim Statement:
ED-based I-PASS Handoff Intervention

The specific aims of this project are to:

A) Improve **satisfaction** with resident physician sign-out in providing critical information necessary to safely execute patient care during handoffs in the ED by 50% among both residents and attending physicians - Oct 2018 to Jan 2019

B) Improve the **adherence** of I-PASS communication tool use by resident physicians during shift change (i.e., handoffs) in the emergency department (ED) from 0 to 80% - Oct 2018 to Jan 2019
How Will We Know That a Change is an Improvement?

• **Outcome Measures**
  – Satisfaction with content of ED resident sign-outs by ED attendings
    • Use ongoing web-based survey tool (survey monkey) judged by ED attendings
    • Propose to increase satisfaction with content of information during sign-outs by 50%
  – Satisfaction (i.e. self-efficacy) of information transfer by ED residents
    • Use web-based pre-post intervention (survey monkey)
    • Propose to increase self-efficacy during handoffs by 50%

• **Process Measure**
  – Adherence of I-PASS tool use by ED residents
    • Use ongoing web-based survey tool (survey monkey) judged by ED attending
    • Propose to increase accuracy of I-PASS use from 0% to 80%
The I-PASS Intervention

<table>
<thead>
<tr>
<th>I</th>
<th>Illness Severity</th>
<th>• Stable, “watcher,” unstable</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Patient Summary</td>
<td>• Summary statement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Events leading up to</td>
</tr>
<tr>
<td></td>
<td></td>
<td>admission</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Hospital course</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ongoing assessment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Plan</td>
</tr>
<tr>
<td>A</td>
<td>Action List</td>
<td>• To do list</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Time line and ownership</td>
</tr>
<tr>
<td>S</td>
<td>Situation Awareness and</td>
<td>• Know what’s going on</td>
</tr>
<tr>
<td></td>
<td>Contingency Planning</td>
<td>• Plan for what might happen</td>
</tr>
<tr>
<td>S</td>
<td>Synthesis by Receiver</td>
<td>• Receiver summarizes what</td>
</tr>
<tr>
<td></td>
<td></td>
<td>was heard</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Asks questions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Restates key action/to do</td>
</tr>
<tr>
<td></td>
<td></td>
<td>items</td>
</tr>
</tbody>
</table>
Obstacles to Effective Resident Handoffs in the Emergency Department

People
- Cross-Talk
- Phone Calls
- Consultants
- RN/Tech
- Patient/Family

Policies
- Varying Staff Expectations
- Lack of Standard Policy

Procedures
- Variability of "Key" Info to Pass
- Inconsistent Team Membership
- Limited Prior Training

Physical Resources
- Lack of Physical Privacy
- Limited Computer Availability

Poor Handoff Quality
## Drivers of Failure: Interventions

<table>
<thead>
<tr>
<th>Goal</th>
<th>Primary Drivers Of Failure</th>
<th>Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Improve resident satisfaction in handoffs by 50%</td>
<td>Reduce Interruptions</td>
<td>&quot;Pre-rounding&quot; to address nursing questions prior to handoff rounds</td>
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<tr>
<td></td>
<td></td>
<td>Avoid paging consults &lt; 15 min of shift change to limit calls during rounds</td>
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<tr>
<td></td>
<td></td>
<td>Discharge Facilitator Coordinator (DFC) nurse attends rounds to help ensure interruptions are minimized</td>
</tr>
<tr>
<td>- Improve accuracy of I-PASS tool use from 20% to 80%</td>
<td>No standard method for handoff communication currently in use</td>
<td>I-PASS handoff tool implementation</td>
</tr>
<tr>
<td>- Improve attending satisfaction in handoffs by 50%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Results: Satisfaction with Resident Sign Out

How satisfied are you that this resident has provided sufficient information to safely manage care?

- Very Satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very Dissatisfied
Results: Satisfaction with Resident Sign Out

P Chart
Satisfaction with Content of Resident Sign Out by Week

CL 0.6084
UCL 0.9013

“I-PASS initiated”
“Add’l training”

“Satisfied” & “Very Satisfied” Responses

Week
Overall, how well does this resident adhere to the I-PASS Script?

- Excellent
- Very Good
- Good
- Fair
- Poor
Results: Adherence to I-PASS

p Chart
Level of Adherence to I-PASS Script

CLA 0.7530
UCL 1.0000
LCL 0.4943

0.000 0.200 0.400 0.600 0.800 1.000 1.200
1 2 3 4 5 6 7 8 9 10 11 12

"Very Good" & "Excellent" Responses

I-PASS Initiated
Add’l training

Week
How satisfied are you that the information you’ve GIVEN is sufficient to safely manage patient care?

- Very Satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very Dissatisfied
Results: Resident Self-Efficacy Giving Sign Out

Baseline Responses

- Very Satisfied: 4
- Satisfied: 16
- Neutral: 1
- Dissatisfied: 0
- Very Dissatisfied: 0
Results: Resident Self-Efficacy Giving Sign Out

![Bar chart showing changes in self-efficacy scores before and after intervention.](image-url)
Results: Disruptions During Sign Out

In the past 30 days....
How often have you experienced disruptions in the ED handoff process that could negatively affect patient care?

- Always
- Very Often
- Sometimes
- Rarely
- Never
Results: Disruptions During Sign Out

Baseline Responses

- Always: 5
- Very Often: 8
- Sometimes: 6
- Rarely: 2
- Never: 0
Results: Disruptions During Sign Out

- Always
- Very Often
- Sometimes
- Rarely
- Never

Pre vs Post comparison graph.
### Return on Investment (ROI)

#### Assumptions:
- 80,000 visits/year
- 30% errors due to poor communication
- 30% of adverse events prevented by I-PASS (Starmer et al, NEJM, Nov 2014)

#### Annual Cost Savings Using I-PASS

<table>
<thead>
<tr>
<th>Rate of Errors</th>
<th>$5,000/Error</th>
<th>$10,000/Error</th>
<th>$15,000/Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>2%</td>
<td>$720K</td>
<td>$1.44M</td>
<td>$2.16M</td>
</tr>
<tr>
<td>3%</td>
<td>$1.1M</td>
<td>$2.16M</td>
<td>$3.24M</td>
</tr>
<tr>
<td>4%</td>
<td>$1.62M</td>
<td>$3.24M</td>
<td>$4.86M</td>
</tr>
</tbody>
</table>

K = Thousands, $US
M = Millions, $US

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Starmer AJ et al. NEJM. 2014;371(19):1803-12

Kjellberg J, et al. BMC Health Serv Res. 2017;13;17(1):651
Next Steps: Making Change Stick

1. Create a sense of urgency
2. Form a guiding coalition
3. Create a strategic vision
4. Communicate the vision
5. Remove barriers to success
6. Create short term wins
7. Sustain momentum
8. Institute lasting change

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Conclusion

• CS&E: Tremendous learning opportunity

• Look forward to continuing QI work

• One person CAN make a difference (best to ask for help!)
Thank you!

Educating for Quality Improvement & Patient Safety