IMPROVING RESIDENT HANDOFFS
FINANCIAL DISCLOSURE

Stephanie Reeves, DO has no relevant financial relationships with commercial interests to disclose.
THE TEAM

CS&E Participant

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Sponsors

- Shawn Ralston, M.D. - Clinical Associate Professor and Division Chief, Inpatient Pediatrics, UTHSCSA
- Tom Mayes, M.D. - Chairman, Department of Pediatrics, UTHSCSA

Facilitator

Amruta Parekh, MD, MPH
OUR AIM STATEMENT

INCREASE THE ANTICIPATORY GUIDANCE* PRESENT IN RESIDENT’S PATIENT HANDOFFS IN GENERAL INPATIENT PEDIATRICS BY 50% BY 9/1/11 AT CSRCH.

*Anticipatory Guidance includes providing specific instructions regarding how to follow up data and what to do for possible clinical scenarios that may occur. Most often found in an if/then format.
PROJECT MILESTONES

- Team Created: May 2011
- AIM statement created: May 2011
- Weekly Team Meetings: May - August 2011
- Background Data, Brainstorm Sessions, Workflow and Fishbone Analyses: May - June 2011
- Interventions Implemented: June - August 2011
- Data Analysis: Aug - September 2011
- CS&E Presentation: September 16, 2011
Impact of Error:

- 44,000-98,000 annual deaths occur as a result of errors
- Medical errors lead followed by surgical mistakes and complications
- More Americans die from medical errors than from breast cancer, AIDS, or car accidents
- 7% of hospitalized patients experience a serious medication error
Cost associated with medical errors is $8-29 billion annually.
Communication Issues Leading Factor in Root Causes

Root Causes of Sentinel Events
(All categories; 1995-2005)

- Communication
- Orientation/training
- Patient assessment
- Staffing
- Availability of info
- Competency/credentialing
- Procedural compliance
- Environ. safety / security
- Leadership
- Continuum of care
- Care planning
- Organization culture

Percent of 3548 events

Errors in Handoffs

- Communication failure - most common root cause of sentinel events in US hospitals
- Poor sign out leads not “knowing” the patients and thus adverse events
- Variability in handoffs
- Shift work mentality
- Vulnerable gap in patient care activities
WHY NOW?

- ACGME Duty Hour limits
  - Increased handoffs by 15% (Vidyarthi, 2006)
  - Less continuity during hospital stay

- Joint Commission National Patient Safety Goal 2006
  - Implement a standardized approach to handoff communication and provide opportunity for staff to ask and respond to questions
8 month old admitted to the PICU in January with bronchiolitis. Improved condition and ready for transfer to the floor.

Signed out to resident on call on 1/15/11 but did not leave the PICU until 1/16/11 (different residents)

Upon arrival to the floor, the patient had orders and was stable thus a physician was never notified of his transfer out of the PICU and to a different service

4 days later it was realized that he had not been seen by a physician since his transfer out of the PICU

After this case, steps taken to change PICU transfer process including need for new orders from floor resident
SELECTED PROCESS ANALYSIS TOOLS

- **Brainstorming**
  - Email surveys to residents/faculty
  - Literature search on patient handoffs
- **Process Map**
- **Fishbone**
CSR RESIDENT PERSPECTIVE ON HANDOFFS

- “don’t know what information is important”
- “sometimes people handing off patients weren’t there during rounds”
- “lack of time”
- “takes too long”
- “medications on written sign out often wrong”
- “need EMR to auto-import data”
CSR PEDIATRIC FACULTY PERSPECTIVE ON HANDOFFS

- “residents don’t know the patients”
- “they don’t realize what information is important”
- “take too long handing off patients because of inclusion of irrelevant details”
- “shift work mentality”
- “not my patient, I was just cross-covering today”
Teams arrive for checkout 6:30a - 7:15a

- Divide into 2 teams A & B and Admit Resident
  - Team A Pre-rounds
    - Morning Report
      - Rounds (PGY2, 1-2 Interns, Attending and Medical Students)
        - Tasks?
          - Yes: Tasks Assigned
            - PGY2 updates checkout
              - Complete? Yes: Intern reports to PGY2 or Attending
              - No: Unfinished tasks go to on call team
          - No: Teams reconvene for sign out to on call team 5-6p

  - Team B Pre-Rounds
    - Morning Report
      - Rounds (PGY3, 1-2 Interns, Attending and Medical Students)
        - Tasks?
          - Yes: Tasks Assigned
            - PGY3 updates checkout
              - Complete? Yes: Unfinished tasks go to on call team
              - No: Intern reports to PGY2 or Attending
          - No: Admit resident checks out new patients admitted to the on call team

- PGY3 Admit Resident
  - Evaluates new patients/ writes orders
  - Discusses patients with attending
  - Adds new patients to checkout

On call team continues care, follows up on patients and sees new admissions
**Interruptions** - pages, calls, conversations

**Teams competing to checkout first, no set order**

**Same room for updating checkouts and actual sign out**

**Room crowding by teams, admit residents, medical students and attendings**

**Problem Statement**

Lack of anticipatory guidance present in resident's patient handoffs given to overnight on-call team

**Materials**
- Out of paper
- Out of toner
- Out of ink
- Other printer malfunction

**People**
- Intern - lacks knowledge of what's important to include in checkout
- PGY2/3 - may lack knowledge of important info, also time constraints
- Attending - may not convey important data for checkout

**Facility**
- Out of toner
- Out of paper
- Other printer malfunction

**Process/Methods**
- Interruptions - pages, calls, conversations
- Teams competing to checkout first, no set order
- Same room for updating checkouts and actual sign out
- Room crowding by teams, admit residents, medical students and attendings
HOW WILL WE KNOW THAT A CHANGE IS AN IMPROVEMENT?

- Direct observation of resident handoffs - new ACGME requirement
- Monitor number of patients where specific anticipatory guidance is given
- Transitions in care are a prime target for improved patient safety efforts
- Sentinel event data creates an urgency for change
PREVIOUS PROJECT
INCREASING VARIANCE REPORTS ON 3RD AND 6TH FLOOR

June - August 2009

June - August 2010
PREVIOUS PROJECT
DECREASING MEDICATION ERRORS

MEDMARX chart based on Type of error
from 1/1/2010 to 12/31/2010 (your facility)

MEDMARX chart based on Type of error
from 1/1/2011 to 6/15/2011 (your facility)

Jan - Dec 2010, 3rd and 9th floors

Jan - June 2011, 3rd and 9th floors
Increase training amongst residents and interns regarding importance of patient handoffs and how to do so properly

Implementation of “If/Then” in written handoffs

Implementation of “If/Then” discussions during family centered rounds
IMPLEMENTING THE CHANGE
DO

- June 2011 - Faculty began direct observation of resident handoffs as part of new ACGME requirements
- June 28, 2011 - Intern Bootcamp - Interns given a training session taking a written patient case and translating it into an effective written and verbal handoff
- June 30, 2011 - Email training reminders for 2nd/3rd year residents regarding importance of handoffs especially inclusion of “if/then” guidance for brand new interns taking call
IMPLEMENTING THE CHANGE (CONT.)

DO

- July 1, 2011 - Written handoff template changes made
- July 6, 2011 - Discussion with faculty regarding specific “if/then” guidance during family centered rounds
<table>
<thead>
<tr>
<th>RoomName</th>
<th>DOB</th>
<th>Attending</th>
<th>Weight kg</th>
<th>DOA</th>
<th>Allergies</th>
<th>Intern</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

One line summary of clinical scenario

**PROBLEM LIST:**

1. 
2. 
3. 

**MEDICATIONS/DIET:**

1. 
2. 
3. 

**RESULTS, EVENTS:**

[ ]

**IF...THEN:**

[ ]

**TO DO (WITH PLAN):**

[ ]
Pediatric Resident Sign-Out Checklist

• S - Sick/Not sick
• I - Identifying Data
  o Concise One-liner
  o Name
  o Room Number
  o Allergies
  o Weight
  o Primary Team
  o Admit Date
• G – General Hospital Course
  o Current Problems
  o Pertinent PMH
  o Medications
  o Special Diet
  o Oxygen/IVF
  o Social Concerns e.g., CPS involvement
• N – New Events of Day
  o Changes in Status
  o Medication Changes
• I – If/Then Statements
  o Issues to be expected with a plan to resolve
    o E.g., If HTN > 135/80, then give prn Nifedipine
• T – To Do List with Plan/Rationale
  o Labs/Imaging to check and what to do with results
  o Possible D/C if meets certain criteria
• ? – Any questions
  o Allow sign out recipients to ask questions
  o Provide satisfactory answers
RESULTS/IMPACT
CHECK

- Ongoing review of handoff checklists completed by faculty supervising resident’s patient handoffs
- August 4, 2011 and September 15, 2011 - Monthly inpatient school sessions with current interns/residents on the pediatric wards discussing patient handoffs and “if/then” guidance
Anticipatory Guidance Given per Number of Patient Handoffs June - August 2011

Pre-Intervention Data

Post-Intervention Data

Intervention

CL: 0.163
LCL: 0.463
UCL: 0.582

0.000 0.200 0.400 0.600 0.800 1.000 1.200

Date


1.000 0.789 0.463
EXPANSION OF IMPLEMENTATION ACT

- Continue to stress importance of “If/Then” guidance in handoffs
- Consider plans to modify written handoff templates on other services, i.e., UH, GI, Heme-Onc
RETURN ON INVESTMENT (ROI)

- Unfortunately unable to obtain error reports from CSR for time period post intervention
- Reasonable to assume that better patient handoffs and greater guidance given to residents covering patients would lead to fewer medical errors which would result in savings
- More efficient resident handoffs leave residents with more time for direct patient care activities
CONCLUSIONS

- **Pre-intervention** - Residents only gave anticipatory guidance during patient handoff about 16% of the time (16 of 98 patients)
- **Post-intervention** - Residents gave anticipatory guidance during patient handoff about 78.9% of the time (60 or 78 patients)
- Verbal feedback from residents is positive with the majority stating that they feel more prepared for overnight call and issues encountered
CONCLUSIONS/WHAT’S NEXT

- Still an issue of patient handoff taking a very long time
  - Did not assess length of patient handoff during this project due to change in resident year. Would have been comparing finishing intern’s handoffs with brand new intern’s handoffs
- Plans to start timing resident handoff and brainstorming for ways to make it more efficient
REFERENCES


- Quality Improvement: Kelsey Sherburne MD and team: Increase the mean number of variance reports from the 3rd and 6th floor of the CHRISTUS Santa Rosa Children’s Hospital by 50% by the end of August 2010.

- Quality Improvement: Mandie Svatek MD and team: Medication Errors and Safety, To decrease the number of medication errors for the Pediatric Medical Care Unit at CHRISTUS Santa Rosa Children’s Hospital by 10% by June 2011
Thank you!