Clinical Safety & Effectiveness
Session # 6

Increased Communication of Essential Elements in Patient Transfers of Care During Anesthesia by 50% in the 2nd Floor ORs at University Hospital Over a 4 month Period to Improve Patient Safety

CENTER FOR PATIENT SAFETY & HEALTH POLICY
UT Health Science Center™ San Antonio

Educating for Quality Improvement & Patient Safety
The Team

Sponsoring Department: Anesthesiology

Team Members

- **Lois L. Bready**, M.D. – CS&E Participant
- **J. Jeffrey Andrews**, M.D. – Chair, Anesthesiology
- **Erik Boatman**, M.D. - Faculty
- **Eric Wong**, M.D. – Anesthesiology Resident
- **LaCresa Davis**, CRNA
- **Jessica Sulser**, MS4
- **Sammy Stevens**, MS4
- **Noel Schafer**, BSN, RN-C – UH Operative Services
- **Michelle Ingram**, RN – UHS Quality & Process Improvement, Admin. Director
- **Amruta Parekh**, M.D., MPH – Facilitator
What We Are Trying to Accomplish?

OUR AIM STATEMENT

Our aim is to increase communication of essential elements in patient transfers of care during anesthesia by 50% in the 2\textsuperscript{nd} floor ORs at University Hospital over a 4 month period.
Project Milestones

- Team Created/Evolved: Aug-Oct 2010
- AIM statement created: August 2010
- Bi-Weekly Team Meetings: Aug-Dec 2010
- Background Data, Brainstorm Sessions, Workflow and Fishbone Analyses: Sep-Oct 2010
- Interventions Implemented: Nov 2010
- Data Analysis: Nov-Dec 2010
- CS&E Presentation: January 20, 2011
Background

• An estimated 80 percent of serious medical errors involve miscommunication between caregivers when patients are transferred or handed-off.
• The Joint Commission requires the use of a standardized approach to hand-off communications.
Background

• An estimated 80 percent of serious medical errors involve miscommunication between caregivers when patients are transferred or handed-off.
• The Joint Commission requires the use of a standardized approach to hand-off communications.
What Changes Can We Make That Will Result in an Improvement?

1. Create a checklist to guide the TOC
2. Ensure that every TOC employs the checklist
Brainstorming

What are the essential elements of an effective TOC?
• Survey of experts (ASA Patient Safety Committee)
• Survey of project team

What are operational considerations of safe & effective TOC?
• Appropriate time in conduct of anesthetic
• Safe to relieve
• Availability of able provider
Selected Process Analysis Tools

- Brainstorming
- Flowchart
- Fishbone
- Checklist
Process Flowcharts – Various ORs

Hand off process in OR: 1 (2 Neuro cases, 4 hrs each)

1st CASE: 7 am

- TOC-1: Provider available?
  - YES
    - New provider references provider for break.
  - NO
    - Wait

- TOC-2: Provider available?
  - YES
    - New provider references provider for break.
  - NO
    - Wait

2nd case starts

- TOC-1: Provider available?
  - YES
    - New provider references provider for break.
  - NO
    - Wait

Hand off process in OR: 10 (Elective C)

4th CASE: 7 am

- Case over in 1 hr

5th CASE: 10 am

- Case over in 1 hr

3rd CASE: 1 pm

- TOC-2: Provider available?
  - YES
    - New provider references provider for break.
  - NO
    - Wait

Successful handoff

Hand off process in OR: 7 (1 trauma case, prolonged)

Case in progress

7 AM window for hand-off

- YES
  - New provider references provider for break.
- NO
  - Wait

TOC-1: Provider available?

- YES
  - New provider references provider for break.
- NO
  - Wait

Successful handoff

12 PM window for hand-off

- YES
  - New provider references provider for break.
- NO
  - Wait

Successful handoff

10 PM window for hand-off

- YES
  - New provider references provider for break.
- NO
  - Wait
Process Flowchart – OR 10

Hand off process in OR:10 (4 ELECTIVE CASES, 1-2 HRS EACH)

1st CASE: 7 am → Case over in 1 hr → 2nd CASE: 9am → Case over in 1 hr → 3rd CASE: 11am →

TOC-M Provider available/able? • Safe?

YES → New provider relieves provider for break → Case over in 2 hrs

NO → Wait

Successful handoffs

YES → TOC-E Provider available/able? • Safe?

NO → Wait

4th CASE: 2pm
Checklist to Increase Communication of Essential Elements in Patient Transfers of Care During Anesthesia in the 2nd Floor ORs at University Hospital Over a 4 month Period

People
- Provider status
- Provider familiarity
- Prior/current role in pt's care
- Distraction to surgeon
- Production pressure
- Reducing turnover time
- Motivation to change practice
- Anticipated duration of break
- Lack of multi-professional TOC
- Production Pressure

Patient
- Relevant ROS
- Airway technique, difficulty
- Comorbidities (how sick?)
- Extent of surgery
- From ICU
- Lines, monitors
- Patient is awake and 'bonded'
- Single time vs. multiple repeats

System
- Delays = OR Costs
- Lack of IT support
- Hierarchical structure

Environment
- Noisy/music
- Disruptive to surgeons
- OR vs. remote site
- Location of handoff

Poor communication of essential patient attributes at time of anesthesia handoff.
Checklist Sheets

9/15/10  9/16/10  10/13/10  11/17/10  11/17/10
Run Chart – Baseline Date
Educational Intervention – 11/18/2010

- Presentation - Patient Safety Project
  - Checklists

[Image of the Checklist Manifesto and the WHO Safe Surgery Saves Lives website]
Written Checklist on Every Anesthesia Cart
Auditing use of checklist for Increasing Communication of Essential Elements in Patient Transfers of Care During Anesthesia in the 2nd Floor ORs at University Hospital Over a 4 month Period

Preintervention data

Postintervention data

Total Elements marked on checklist

Time Period

UCL

CCL

C

LCL

Intervention

28.91

16.67

4.42

0.18
Rapid Cycle
PDSA Performance Improvement Model

**Act:** Incorporate 18 highest-rated elements into checklist

**Plan:** Determine important data elements

**Study:** Determine highest rated data elements

**Do:** Score proposed elements (experts & our team) by relevance

Cycle 1 – Creating the Checklist
Rapid Cycle PDSA Performance Improvement Model

**Act:** Educational intervention

**Plan:** Monitoring tool to score TOCs

**Study:** Determine mean number of data elements conveyed

**Do:** Score baseline TOCs

Cycle 2 – Measuring Baseline Data
**Rapid Cycle**

**PDSA Performance Improvement Model**

- **Plan:** All TOCs to be driven by checklist; laminated checklist in ORs
- **Do:** Score TOCs using checklist
- **Study:** Determine mean number of data elements conveyed
- **Act:** Celebrate! Then revise . . .

Cycle 3 – Using Checklist for all TOCs
Return on Investment

• Improved focus on patient safety – providers, medical students

• Student observation: Using checklists for transfers of care makes the conversations during the transfers richer in content without hindering the anesthesia professionals involved. From watching transfers with and without checklists, it struck me that using the checklists people were able to eliminate the "Hmm, what else do I want to tell you?" moments and drill through the 18 points quickly and naturally.
Return on Investment, cont.

• Improved patient safety = reduced complications, LOS, costs – though difficult to measure
• Improved compliance with **SCIP measures**
  – **SCIP INF 1**  *Time of beginning of ABX admin* — surgical incision time <60 min
  – **SCIP-INF 4**  *Cardiac surgery patients with controlled 6 a.m. postoperative serum glucose* (#200 mg/dL)
  – **SCIP INF 7**  *First temp taken within first 15 min. of arrival in PACU is => 36 Celsius*
What’s Next

Findings:
• **Without checklist** (memory only), **50%** of essential data elements conveyed
• **Using checklist**, **93%** of data elements conveyed

Anticipated benefits:
• Higher %age essential data elements communicated = better patient safety
• Increased awareness of safe practice, teamwork

Plans:
• Implement in other anesthetizing locations, OB
• Transfer to PICIS (Anesthesia EHR) – remind & document
The A(nesthesiology) Team

J. Jeff Andrews, M.D.
Lois L. Bready, M.D.
Jessica Sulser, MS4
Sammy Stevens, MS4
Erik Boatman, M.D.
Eric Wong, M.D.
Amruta Parekh, M.D.
Michelle Ingram, RN
Noel Schafer, RN
LaCresa Davis, CRNA
Thank you!