Comprehensive Unit-based Safety Program (CUSP)

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Armstrong Institute for Patient Safety & Quality
November 14, 2011
Learning Objectives

• To understand the steps & tools in CUSP
• To understand how to employ the CUSP methodology to improve safety culture
• To understand how CUSP has been used outside the ICU.
The Michigan Keystone ICU Project saved over 1,500 lives and $200 million by reducing health care associated infections.

Office of Health Reform,
Department of Health and Human Services
Physicians and RN Collaboration

- L&D RN/MD: 48% (RN rates) 83% (Physician rates)
- ICU RN/MD: 48% (RN rates) 88% (Physician rates)
- OR RN/Surg: 54% (RN rates) 90% (Physician rates)
- CRNA/Anesth: 59% (RN rates) 93% (Physician rates)

% of respondents reporting adequate teamwork
Teamwork Disconnect

• MD: Good teamwork means the nurse does what I say

• RN: Good teamwork means I am asked for my input
<table>
<thead>
<tr>
<th>Culture linked to clinical and operational outcomes in healthcare:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Wrong Site Surgeries</td>
</tr>
<tr>
<td>- Decubitus Ulcers</td>
</tr>
<tr>
<td>- Delays</td>
</tr>
<tr>
<td>- Bloodstream Infections</td>
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<tr>
<td>- Post-Op Sepsis</td>
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<tr>
<td>- Post-Op Infections</td>
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<tr>
<td>- Post-Op Bleeding</td>
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<tr>
<td>- PE/DVT</td>
</tr>
<tr>
<td>- RN Turnover</td>
</tr>
<tr>
<td>- Absenteeism</td>
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<tr>
<td>- VAP</td>
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</tbody>
</table>

Data provided by Bryan Sexton
Pre CUSP Work

• Create an CUSP CAUTI team
  – Nurse, physician, administrator, infection control, others
  – Assign a team leader

• Measure Culture in your clinical unit
  (discuss with hospital association leader)

• Work with hospital quality leader to have a senior executive assigned to your unit based team
The Johns Hopkins Armstrong Institute* Model to Improve Care

### Translating Evidence Into Practice (TRiP)

1. Summarize the evidence in a checklist
2. Identify local barriers to implementation
3. Measure performance
4. Ensure all patients get the evidence
   - Engage
   - Educate
   - Execute
   - Evaluate

### CAUTI

1. **Care & Removal Intervention**
   - Removal of unnecessary catheters
   - Proper care for appropriate catheters

2. **Placement Intervention**
   - Determination of appropriateness
   - Sterile placement of catheter

### Comprehensive Unit based Safety Program (CUSP)

1. Educate staff on science of safety
2. Identify defects
3. Assign executive to adopt unit
4. Learn from one defect per quarter
5. Implement teamwork tools

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**CAUTI** stands for Catheter-Associated Urinary Tract Infection, which is a critical area of focus in improving patient care.
# Chain of ownership

<table>
<thead>
<tr>
<th></th>
<th>Senior leaders</th>
<th>Team leaders</th>
<th>Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Engage</strong></td>
<td><em>How does this make the world a better place?</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Educate</strong></td>
<td><em>What do we need to do?</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **Execute** | *What keeps me from doing it?*  
*How can we do it with my resources and culture?* | | |
| **Evaluate** | *How do we know we improved safety?* | | |
Science of Safety

• Understand system determines performance

• Use strategies to improve system performance
  – Standardize
  – Create independent checks for key process
  – Learn from mistakes

• Apply strategies to both technical work and team work
Executive Partnership

• Executive should become a member of the CUSP CAUTI team
• Executive should meet monthly with the CUSP CAUTI team
• Executive should review defects, ensure the CUSP CAUTI team has resources to reduce risks, and hold team accountable for improving risks and central line associated blood steam infection
Identify Defects

• Review error reports, liability claims, sentinel events or M and M conference

• Use the Staff Safety Assessment: Ask staff how will the next patient be harmed
Learning from Mistakes

- What happened?

- Why did it happen (system lenses)?

- What could you do to reduce risk?

- How do you know risk was reduced?
  - Create policy / process / procedure
  - Ensure staff know policy
  - Evaluate if policy is used correctly
Prioritize Defects

• List all defects

• Discuss with staff what are the three greatest risks
To Evaluate Whether Risks were Reduced

• Did you create a policy or procedure

• Do staff know about the policy

• Are staff using it as intended

• Do staff believe risks have been reduced
# Learning From Defects to Enhance Morbidity and Mortality Conferences

<table>
<thead>
<tr>
<th>Fellow</th>
<th>Defect</th>
<th>Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fellow 1</td>
<td>Unstable oxygen tanks on beds</td>
<td>Oxygen tank holders repaired or new holders installed institution-wide</td>
</tr>
<tr>
<td>Fellow 2</td>
<td>Nasoduodenal tube (NDT) placed in lung</td>
<td>Protocol developed for NDT placement</td>
</tr>
<tr>
<td>Fellow 3</td>
<td>Medication look-alike</td>
<td>Education, physical separation of medications, letter to manufacturer</td>
</tr>
<tr>
<td>Fellow 4</td>
<td>Bronchoscopy cart missing equipment</td>
<td>Checklist developed for stocking cart</td>
</tr>
<tr>
<td>Fellow 5</td>
<td>Communication with surgical services about night coverage</td>
<td>White-board installed to enhance communication</td>
</tr>
<tr>
<td>Fellow 6</td>
<td>Inconsistent use of Daily Goals rounding tool</td>
<td>Gained consensus on required elements of Daily Goals rounding tool use</td>
</tr>
<tr>
<td>Fellow 7</td>
<td>Variation in palliative care/withdrawal of therapy orders</td>
<td>Orderset developed for palliative care/withdrawal of therapy</td>
</tr>
<tr>
<td>Fellow 8</td>
<td>Inaccurate information by residents during rounds</td>
<td>Developing electronic progress note</td>
</tr>
<tr>
<td>Fellow 9</td>
<td>No appropriate diet for pancreatectomy patients</td>
<td>Developing appropriate standardized diet option</td>
</tr>
<tr>
<td>Fellow 10</td>
<td>Wrong-sided thoracentesis performed</td>
<td>Education, revised consent procedures, collaboration with institutional root-cause analysis committee</td>
</tr>
<tr>
<td>Fellow 11</td>
<td>Inadvertent loss of enteral feeding tube</td>
<td>Pilot testing a ‘bridle’ device to secure tube</td>
</tr>
<tr>
<td>Fellow 12</td>
<td>Inconsistent delivery of physical therapy (PT)</td>
<td>Gaining consensus on indications, contraindications and definitions, developing an interdisciplinary nursing and PT protocol</td>
</tr>
<tr>
<td>Fellow 13</td>
<td>Inconsistent bronchoscopy specimen laboratory ordering</td>
<td>Education, developing an orderset for specimen laboratory testing</td>
</tr>
</tbody>
</table>
Teamwork Tools

• Call list
• Daily Goals
• AM briefing
• Shadowing
• Culture check up
• TEAMSTepp
Call List

• Ensure your unit has a process to identify what physician to page or call for each patient

• Make sure call list is easily accessible and updated
**Daily Goals**

- What needs to be done for the patient to be discharged?
- What is the patient's greatest safety risk?
- What can we do to reduce the risk?
- Can any tubes, lines, or drains be removed?
AM Briefing

• Have a morning meeting with charge nurse and unit attending

• Discuss work for the day
  – What happened during the evening
  – Who is being admitted and discharged today
  – What are potential risks during the day, how can we reduce these risks
Shadowing

• Follow another type of clinician doing their job for between 2 to 4 hours

• Have that person discuss with staff what they will do differently now that they walked in another person’s shoes
CUSP Lessons Learned

• Culture is local
  – Implement in a few units, adapt and spread
  – Include frontline staff on improvement team

• Not linear process
  – Iterative cycles
  – Takes time to improve culture

• Couple with clinical focus
  – No success improving culture alone
  – CUSP alone viewed as ‘soft’
  – Lubricant for clinical change
Implementing Daily Goals on a Medical-Surgical Service

• Central challenge on medical-surgical service is multiple teams rounding; lack of a unit-based medical care team.

• Communication failures, Lack of clear understanding of goals for each patient, Multiple pages to the physician care team

• How to a) create a multi-disciplinary care team and b) provide a clear understanding of RN concerns & plan of care
3 Part Intervention

- Patient Cohorting: All patients assigned to 1 surgical service were cohorted for admission on the same nursing unit
- Interdisciplinary Rounds: Expanded rounds (MD-centric) to include active RN participation
- Goals Tool: Lists each patient on this service. Includes: date, name, room number, RN concerns, reminders/goals for the rounding team
<table>
<thead>
<tr>
<th>DATE:</th>
<th>TODAY’S GOALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Name: John Doe</td>
<td><strong>Diet</strong> regular</td>
</tr>
<tr>
<td>Activity</td>
<td><em>ambulate 3-4 times today in hallway</em></td>
</tr>
<tr>
<td>Fluid Status</td>
<td><em>increase IV fluid rate to 100 cc/hr</em></td>
</tr>
<tr>
<td>Room # 403</td>
<td>Pain Issues <em>switch to PO pain med-Oxycodone 5-10mg</em></td>
</tr>
<tr>
<td>Wounds/drains</td>
<td></td>
</tr>
<tr>
<td>RN concerns: <em>Appetite is poor and urine output low.</em></td>
<td>Lab (VAT vs LAB)</td>
</tr>
<tr>
<td>Blood Sugars</td>
<td></td>
</tr>
<tr>
<td>Procedures</td>
<td><em>Diag. Rad. to upsize biliary stent</em> this evening</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
</tr>
</tbody>
</table>

| Patient Name: Jane Doe | **Diet**  |
| Activity | *encourage cough & deep breathing*  |
| Fluid Status |  |
| Room # 409 | Pain Issues *comfortable with acetaminophen*  |
| Wounds/drains | *daily pulse lavage of wound*  |
| RN concerns: *Family reluctant to do dressing change. If home care can’t do daily dressing change, may need subacute placement.* | Lab (VAT vs LAB)  |
| Blood Sugars |  |
| Procedures |  |
| Other: |  |

| Referrals (check if needed) |  |
| PT/OT | ☐  |
| Social work | ☐  |
| Home care | ☐  |
| Anticipated discharge date: |  |
| Scripts for discharge: *to be written* |  |
| ☑ eval safe transfer |  |
| ☑ subacute placement |  |
| ☑ if family cannot assist with care |  |
| Anticipated discharge date: |  |
| Scripts for discharge |  |

Figure 1. A goal sheet, which contains space for five patients, is shown as completed for two patients—John Doe and Jane Doe. PT, physical therapy; OT, occupational therapy; IV, intravenous; PO, oral; RN, registered nurse; VAT, venous access team; LAB, laboratory blood draw; Diag. Rad., diagnostic radiology.
Results & Lessons Learned

• Reduction in number of MD pages from 2-12/day pre-implementation to 0-4 post-implementation.

• Perceived improvements in communication & collaboration. Increased level of trust & respect.

• Improved communication/sharing at change of shift.
Staff Safety Assessment: How the Next Patient Will be Harmed (N=22)
What Happened?

Reviewed 12 months of fall data: 90% of falls occurred on night shift, within 1 hour of change of shift, and on weekends.

**Fall Reason**

- Bed alarms off
- Bathroom
- BSC/Urinal
- Walking
- In/out of chair
- Restraints removed
- Fall prior to assess

Pre-Implementation (12 months, n=23)
### What will you do to reduce risk?

#### III. How will you reduce the likelihood of this defect happening again?

Develop an intervention for each of the important contributing factors identified above. Develop interventions to defend against the 2 to 5 most important contributing factors. Refer to the *Strength of Interventions* chart below for examples of strong and weak interventions. Then, rate each intervention on its ability to mitigate the contributing factor and on the team’s belief that the intervention will be implemented and executed. Make an action plan for 2-5 of the highest scoring interventions.

<table>
<thead>
<tr>
<th>Interventions to reduce the risk of the defect</th>
<th>Ability to mitigate the contributing factor, 1 (low) to 5 (high)</th>
<th>Teams belief that the intervention will be implemented and executed, 1 (low) to 5 (high)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add column to report sheet for patients with high fall risk</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Every 4 hours staff will check Hill-Rom system to ensure bed alarms are on</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Independent double check for bed alarms
Make it Visible

Remember your fall precaution interventions

It has been...

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36
37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52

weeks since Osler 4 has had a fall !!!
Baseline Fall Rate
Rate
2.92 falls/1000 pt-days

Incidence Rate Ratio
0.72 (P value = 0.35)

Post-Intervention Fall
Rate
2.10 falls/1000 pt-days

Relative Risk Reduction
28%
Fall Reason

Pre-Implementatin (15 months, n=23)

Post-Implementatin (12 months, n=13)
CUSP is a Continuous Journey

• Add science of safety education to orientation

• Learn from one defect per month, share or post lessons (answers to the 4 questions) with others

• Implement teamwork tools that best meet your teams needs. Modify as needed for your setting

• Details are in the CUSP CAUTI manual
References