"Using Simulation to Improve Operating Room Efficiency and Safety"

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United States Army Medical Command
Nurse Consultant/TeamSTEPPS Program Manager
Patient Safety Program
Objective

- Provide an overview of the US ARMY Medical Command’s (MEDCOM) Simulation based Medical Team Training

- Discuss outcome data related to improvements in efficiencies and safety
US Army MEDCOM Pilot Data: Six Months Post Training

- 50% decrease in delays
- 18% decrease in instrumentation issues
- 60% decrease in preference card issues
- 50% decrease in scheduling issues
- 22% increase in productivity
- 16% increase in room utilization
- Prevented wrong site surgery
• 70% decrease in delays
• 60% decrease in equipment issues
• 44% decrease in instrumentation issues
• 88% decrease in preference card issues
• 30% decrease in scheduling issues
• 85% decrease in supply issues
• 2.5 minute decrease in turn over time
• 5% Decrease in turn over time (3 minutes)
• 90% improvement in On-Time First Starts
• 86% Compliant on Post-Operative Debriefs
• 12% decrease in CMS Processing issues
• < 1% Preference Cards Issues
• < 1% Supplies Issues
• < 1% Equipment Issues
• 92% - “OR Brief” Participation Rate
Program Development Goals

1. Create high preforming OR teams
   
   *Shift from teams of ‘high performers’, to ‘high performing teams’*
   
   - Develop Local, ‘Teamwork Focused’ Simulation Trainers
     - TeamSTEPPS®
     - Train in teams familiar environment
     - Within their own teams
     - Using their own equipment and instruments
     - Using scenarios they developed
     - Focus on teaming skills, not clinical expertise
     - Low fidelity
     - Local ownership

2. Utilize industry leading practices
   - Briefs, Debriefs, team empowerment tools
   - Debrief data collecting tool/process
Day 1: Fundamentals and Simulation

0645-0700 Registration
0700-0715: Leadership Welcome
0715-0900: TeamSTEPPS Fundamentals
0900-0915: Break
0915-1015: TeamSTEPPS Fundamentals
1015-1115: Simulation 101
1115-1215: Lunch
1215-1500: Simulation Building
1500-1600: Simulation set up and practice

Day 2: Teach-backs (Train the Staff)

AM Session
0645-0700: Registration/Leadership Welcome- in OR classroom
0700-0800: TeamSTEPPS Essentials
0815-1015: Simulations- (in work areas)
1030-1100: Full team debrief- (in classroom)

PM Session
1200-1215: Registration/Leadership welcome - (in scrubs, in OR classroom)
1215-1315: TeamSTEPPS Essentials
1330-1530: Simulations- (in work areas)
1530-1600: Full team debrief- (in classroom)
*FOR INSTRUCTOR CANDIDATES- 1600-Instructor Debrief and Prep for day 3 Coaching

Day 3: Coaching and Implementation Planning

0645-1100 Coaching (in scrubs, in work areas)
1100-1130 Lunch
1200-1545 Implementation and Sustainment Planning (in classroom)
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0730-0745: Leadership Welcome
0745-0815: MEDCOM Pilot
0815-0915: TeamSTEPPS Essentials
0915-0930: Break
0930-1015: Debrief Tracking Tool
1015-1115: Simulation 101 (Training)
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0645-1100 Coaching (in scrubs, in work areas)
1100-1200 Lunch
1200-1600 Implementation and Sustainment Planning (in classroom)
Rules of Engagement

• Treat the simulation as you would a normal case

*Exceptions: intubation, medications, invasive procedure
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Sample Simulation Sustainment Plan

• Monthly Simulation Training Day
• Train by service line
• Use one or two OR suites
• Maintain library of simulation scenarios
• Team simulation exercises become part of the culture
Similarities in Facility Findings

- Facilities utilizing the tools:
  - Utilization improvement
  - Improved on-time starts
  - Instrumentation
  - Equipment
  - Preference/Case Cards
  - Patient Safety

- Trained facilities are continuing with OR simulation activities
Questions
• Operating room efficiency improvement after implementation of a postoperative team assessment

• Christopher R. Porta, MD,* Andrew Foster, MD, Marlin W. Causey, MD, Patricia Cordier, RN, Roger Ozbirn, RN, Stephen Bolt, MD, Dennis Allison, CRNA, and Robert Rush, MD
1. Participation in a medical team training program was associated with 18% lower surgical mortality.

2. Decreased case delays and improved case scores.

3. Decreased patient harm through improved identification of surgical defects/issues.
   - 46% of issues were identified in surgical team briefings
   - 54% during debriefings.

4. Improves interdisciplinary communication and teamwork in the OR.

* For references see next slide
1. Julia Neily, Peter D. Mills, Yinong Young-Xu, et al. Association Between Implementation of a Medical Team Training Program and Surgical Mortality. [http://jama.ama-assn.org/cgi/content/full/304/15/1693](http://jama.ama-assn.org/cgi/content/full/304/15/1693)


ADDITIONAL SLIDES
### Scenario: 32 yr old male requiring IVRO, was consented for a BSSO. Surgery is listed as BSSO on the OR schedule.

Setting: OR suite, pt in holding. Nurse, Techs and Anesthesia in room setting up. Surgeon comes in to check room.

Note to Proctor: Have mock chart ready with incorrect consent.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Triggers for use of tools</th>
<th>Expected Team Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Start of case</td>
<td>Brief</td>
<td></td>
</tr>
<tr>
<td>2. Consented incorrectly</td>
<td>Advocacy, Huddle, Two Challenge rule</td>
<td></td>
</tr>
<tr>
<td>3. Tech’s anticipation is slow</td>
<td>IMSAFE, Mutual Support, Check Back</td>
<td></td>
</tr>
<tr>
<td>4. Surgeon is requesting incorrect instruments that have a singular use</td>
<td>Two Challenge Rule, CUS,</td>
<td></td>
</tr>
<tr>
<td>5. Incorrect patient x-ray</td>
<td>Situational Awareness, Mutual Support, Advocacy, Assertion, Huddle, Two Challenge</td>
<td></td>
</tr>
<tr>
<td>5. Closing Skin</td>
<td>Debrief</td>
<td></td>
</tr>
</tbody>
</table>

## Scenario:
### Oral Macular Facial Surgeon (OMFS) Case

<table>
<thead>
<tr>
<th>Action Expected/ TS Tool or Strategy</th>
<th>Action Demonstrated</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Brief Prior to Start</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>2. Advocacy, Huddle, Two Challenge rule</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>3. IMSAFE, Mutual Support, Check Back</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>4. Two Challenge Rule, CUS</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>5. Situational Awareness, Mutual Support, Advocacy, Assertion, Huddle, Two Challenge</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>6. Debrief</td>
<td>YES</td>
<td>NO</td>
</tr>
</tbody>
</table>
Role: OMFS

Instructions for scenario:

You have multiple back to back cases today. You are behind schedule and plan for this to be a speedy surgery. You have not had a chance to see the patient yet, but you go into the room to ensure everything is set to go.

When surgery is underway: request incorrect instruments that have a singular use.

Please behave out of character and act upset and impatient with staff.

Otherwise, proceed as you usually would for this case.
Role: Nurse

Instructions for scenario:

Settle patient in the OR suite. Provide care as usual.
Role: Tech 1

Instructions for scenario:

Set up room for the IVRO.
You are sluggish today because you came into work sick.
Role: Anesthesia

Instructions for scenario:

From your interview with the patient, you understand that the case today to be intraoral vertical ramus osteotomy (IVRO).
Role: Tech 2

Instructions for scenario:

Care for patient as per protocol.
Hospital Teams Are Left With:

- Culture change plan for integration, sustainment and communication
- Experienced TeamSTEPPS Coaches and Trainers
- Library of their own simulation exercises
- New TtS agenda to include simulation
Lessons Learned

• Pre-course planning is critical

• Leadership engagement is not negotiable

• Prep the attendees

• Multidisciplinary planning team is a must
Lessons Learned

• Work within existing unit processes and practice

• Have data management plan prior to training

• Accountability though reporting

• Planning Team Coaching post-implementation

• Flexibility is key
Questions