The Role Of Simulation Technology In Becoming A Highly Reliable Organization

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Palmetto Health Simulation Center SimCOACH
"sim-y&-'IA-sh&n"

The act of imitating the behavior of some situation or some process by means of something suitably analogous (especially for the purpose of study or personnel training)
Simulation Is A Safe Way To…

- Learn
- Practice
- Experiment
Simulation Gives Us A Safe Place To Do:

- Dangerous things
- Expensive things
- Things that we can’t easily observe
- Things over and over again if we need to
Traditional Medical Learning Model

- Watch one
- Do one
- Teach one
Train And Practice On Simulators, Not On Patients
Team Oriented Simulation: A Great Place To Learn And...

- Practice tasks
- Improve communication and teamwork skills
“A Simulator Is A Place To Have An Experience”
The Learning Happens In The Debriefing
Why *Not* Simulation?

- Costs
- Space- see above
- Experience
Providing Simulation-Based Training Through A Mobile Platform
Mobile Simulation Operations

- University of Missouri School of Medicine
- Coastal Carolinas Health Alliance
- MedFlight of Ohio
- SIMSD- Simulation in Motion South Dakota
- ND Star- North Dakota Simulation, Teaching and Research Center
  ... to name a few.
SimCOACH™

Simulation in Medicine
Collaborative Outreach
and Community Health
SimCOACH™ - Outreach Education

• A mobile operation capable of delivering simulation based education in a customized motor coach or in the host’s environment
• Clients will be able to choose from our extensive library of content already developed or opt for custom course solutions
• Eliminates the start up and delivery costs that are prohibitive for many interested parties
Key Features of SimCOACH™

1. 2 fully functional simulation areas

2. Centralized control booth

3. A/V recording of activities for de-brief
Lots of Ground to Cover
High Fidelity Simulation

• High-fidelity simulators are life-like “manikins” connected to computers that control the physiological responses of the “manikins”

• Our goal is to suspend disbelief, to engage the learner in an environment that closely resembles a real clinical encounter

• Actors are often used to play additional roles
Major Benefits of HFS

• Moves the learner beyond the technical skills, to enhance abilities in communication, teamwork, decision-making, and clinical leadership

• Creates an immersive, yet controlled learning environment; allowing the learner to make mistakes without compromise to patient safety

• Provides lessons, not consequences
Growth Through Simulation

- Get Familiar
- Get Experienced
- Achieve Mastery

Clinical Skills

Simulation activities
Who Needs Mobile Simulation?
Meeting The Need for On-Site High Fidelity Simulation

Rolling Class
Introducing SimCOACH®
“The advent of simulation marked the time in the evolution of medical education when we stopped using the sickest among us, treated by the least experienced practitioners, to train”
“The unveiling of the SimCOACH marks the time in the evolution of our Simulation Center when we gain the ability to offer simulation without borders, in service to many more of our citizens, as we continue the pursuit of quality improvement and patient safety”
SimCOACH™
Simulation without boundaries
Immediate results...
Endless possibilities
Let’s Go To The Simulator
Program Update
Project Goals

• To have a customized version of the WHO Surgical Safety Checklist used effectively for every patient undergoing surgery in the state of South Carolina

• Develop strategies to engage physicians in this work

• Learn how to scale a quality improvement initiative across an entire state

• Apply this program to additional states and health systems – South Carolina hospitals becoming the model for safety
Surgical Safety Checklist

Before induction of anaesthesia
(with at least nurse and anaesthetist)

- Has the patient confirmed his/her identity, site, procedure, and consent?
  - Yes
- Is the site marked?
  - Yes
  - Not applicable
- Is the anaesthesia machine and medication check complete?
  - Yes
- Is the pulse oximeter on the patient and functioning?
  - Yes

- Does the patient have a:
  - Known allergy?
    - No
    - Yes
  - Difficult airway or aspiration risk?
    - No
    - Yes, and equipment/assistance available
  - Risk of >500ml blood loss (7ml/kg in children)?
    - No
    - Yes, and two IVs/central access and fluids planned

Before skin incision
(with nurse, anaesthetist and surgeon)

- Confirm all team members have introduced themselves by name and role.
- Confirm the patient’s name, procedure, and where the incision will be made.
- Has antibiotic prophylaxis been given within the last 60 minutes?
  - Yes
  - Not applicable

Anticipated Critical Events

To Surgeon:
- What are the critical or non-routine steps?
- How long will the case take?
- What is the anticipated blood loss?

To Anaesthetist:
- Are there any patient-specific concerns?

To Nursing Team:
- Has sterility (including indicator results) been confirmed?
- Are there equipment issues or any concerns?

Is essential imaging displayed?
- Yes
- Not applicable

Before patient leaves operating room
(with nurse, anaesthetist and surgeon)

Nurse Verbally Confirms:
- The name of the procedure
- Completion of instrument, sponge and needle counts
- Specimen labelling (read specimen labels aloud, including patient name)
- Whether there are any equipment problems to be addressed

To Surgeon, Anaesthetist and Nurse:
- What are the key concerns for recovery and management of this patient?

This checklist is not intended to be comprehensive. Additions and modifications to fit local practice are encouraged.
# Safe Surgery 2015: South Carolina Checklist Template

## Before Induction of Anesthesia

**Nurse and Anesthesia Provider Verify:**
- Patient identification (name and DOB)
- Surgical site
- Surgical Procedure to be performed matches the consent
- Site marked
- Known allergies
- Patient Positioning
- The anesthesia safety check has been completed

**Anesthesia Provider Shares Patient Specific Information with the Team:**
- Anticipated airway or aspiration risk
- Risk of significant blood loss
  - Two IVs/central access and fluids planned
  - Type and crossmatch/screen
  - Blood availability
- Risk of hypothermia - operation >1h
  - Warmer in place
- Risk of venous thromboembolism
  - Boots and/or anticoagulants in place

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## Before Skin Incision

**Entire Surgical Team:**
- Is everyone ready to perform the time out?
- Please state your name and role

- Patient’s name
- Surgical procedure to be performed
- Surgical site
- Essential imaging available

- Has antibiotic prophylaxis been given within the last 60 minutes?
  - Plan for redosing discussed

### Briefing

**Surgeon Shares:**
- Operative Plan
- Possible difficulties
- Expected duration
- Anticipated blood loss
- Implants or special equipment needed

**Anesthesia Provider Shares:**
- Anesthetic plan
- Airway concerns
- Other concerns

**Circulating Nurse and Scrub Tech Share:**
- Sterility, including indicator results
- Equipment issues
- Other concerns

**Surgeon says:**
"Does anybody have any concerns? If you see something that concerns you during this case, please speak up."

## Before Patient Leaves Room

**Nurse reviews with Team:**
- Instrument, sponge and needle counts are correct
- Name of the procedure performed
- Specimen labeling
  - Read back specimen labeling including patient’s name

### Debriefing

**Entire Surgical Team Discusses:**
- Equipment problems that need to be addressed.
- Key concerns for patient recovery and management
- What could have been done to make this case safer or more efficient

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Safe Surgery 2015: South Carolina Program

Engagement:
Leadership Team and Hospitals

Hospital Checklist Implementation:
Three Waves of Education Series

Building a Stronger Healthcare System:
Hospital Site Visits, OR Team Training, and Inter-Hospital Sharing Network

Measurement:
Monitoring the impact of the checklist at a state level and in individual hospitals
## South Carolina Program Activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitals that participated in the webinar educational series</td>
<td>52</td>
</tr>
<tr>
<td>Number of clinicians trained over 6 OR Team Training Sessions</td>
<td>223</td>
</tr>
<tr>
<td>Number of clinicians trained over 4 in-person meetings</td>
<td>275</td>
</tr>
<tr>
<td>Hospital visits by Safe Surgery 2015 team</td>
<td>103</td>
</tr>
</tbody>
</table>
Program’s Impact Across The United States

400+ Healthcare Facilities Across The United States
Lessons Learned

- Communication and teamwork in the OR has changed over the course of the program
- Checklist use remains variable across the state and within hospitals
- Hospitals in general, only have the capacity to concentrate on one phase of the checklist at a time
- This work takes time ....
Monitoring The Checklist

Factors Associated With Effective Implementation Of The Safe Surgery Checklist

State Administrative Data (Revenue of Fiscal Affairs, formally ORS)
Safe Surgery Plan

• Received additional funding that will support the work for the next year
• Continue to visit hospitals and learn
• Hold an in-person meeting
• Develop criteria of what it means to be a “Safe Surgery 2015 Hospital”
• Recognize organizations that have meaningfully implemented the checklist
Our Partnership

- Improving surgical care across the state
- Understanding management’s role in improving safety
- Improving communication between patients and providers in seriously ill patients
- Reducing unnecessary C-sections
Thank You

For More Information: www.safesurgery2015.org

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