

### CAPTURING THE TEACHABLE MOMENT:

USING JUST-IN-TIME SIMULATION TO DEVELOP CLINICAL REASONING AND LEADERSHIP SKILLS IN PEDIATRIC TRAINEES ACROSS THE CONTINUUM

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#### DISCLOSURE

■ The presenters have no disclosures.

#### **OBJECTIVES**

- To explain how simulation can be used as a teaching tool to improve clinical reasoning skills and contingency planning.
- To recognize the importance of developing a shared mental model for patients at risk for deterioration.
- To identify the impact of just-in-time simulation on learner leadership abilities.
- To design a just-in-time simulation scenario from a patient case.
- To describe the role of debriefing and outline the key elements of effective debriefing

# IMPACT OF TRANSITIONS OF CARE







#### PATIENT SAFETY IS THE GOAL



#### THE IMPLEMENTATION



- Provides a mnemonic with a structured model for both verbal handoff and a written hand off document
- Implementation of the handoff program was associated with reductions in medical errors and in preventable adverse events with improvements in communication..."

### **CONTIGENCY PLANNING**



I	Illness Severity	<ul> <li>Stable, "watcher," unstable</li> </ul>
P	Patient Summary	<ul> <li>Summary statement</li> <li>Events leading up to admission</li> <li>Hospital course</li> <li>Ongoing assessment</li> <li>Plan</li> </ul>
A	Action List	<ul><li>To do list</li><li>Time line and ownership</li></ul>
S	Situation Awareness and Contingency Planning	<ul> <li>Know what's going on</li> <li>Plan for what might happen</li> </ul>
S	Synthesis by Receiver	<ul> <li>Receiver summarizes what was heard</li> <li>Asks questions</li> <li>Restates key action/to do items</li> </ul>

- Know what's going on?
- Plan for what might happen?

 Helps to create a shared mental model

### SHARED MENTAL MODEL

- What happens when the message is relayed wrong?
- What happens if the plan is not solidified?
- What happens when the team is unable to carry out the plan due to lack of knowledge?
- Are there barriers to carrying out the plan?









# SIMULATION AS A TEACHING TOOL

#### WHAT IS SIMULATION?

"Simulation is a technique ... to replace or amplify real experiences with guided experiences that evoke or replicate substantial aspects of the real world in a fully interactive manner"



### THE CASE FOR SIMULATION

- Challenges in clinical teaching
- Changing technologies
- Need to assess competence
- Need to evaluate systems
- Opportunity for deliberate practice



#### **MEDICAL SIMULATION**

- Captures teachable moments
- Practice high stakes, low frequency events
  - 44% of pediatric residents had never led a resuscitation
  - First five minutes matters for survival in a resuscitation
  - The perfect storm



Nadel, F.M. et al 2000, Soar, J. et al 1998, Nelson, K. L., et al 2007

#### **MEDICAL SIMULATION**

- Quality tool
- Systems and team issues can be analyzed
- Important for patient safety



### **BEYOND THE MOCK CODE**

- Tool to teach clinical reasoning
  - Knowledge acquisition
  - Recognition patient deterioration
  - Critical thinking
- Just in time and just in place models
  - CPR training
  - Mock codes on the inpatient unit



Dreifuerst 2012, Lapkin 2010, Niles 2009, Stefaniak 2012, Sam 2012

#### BEFORE THE CODE...

How can simulation help prevent the code?

### JUST IN TIME SIMULATION

Goal is to develop situation awareness and contingency plans

Not a full fledged "code"

Happens in situ – right on the unit

### JUST IN TIME SIMULATION



### SIMULATION SESSION

Inpatient team and nursing convene for simulation

15 minutes of simulation

15 minutes of debriefing

#### PREPARATION ON DAY OF SIMULATION

Senior resident identifies "watcher" Senior resident and simulation coordinator develop just-in-time simulation

### CASE DEVELOPMENT

- Goals and objectives key
  - Think about all the participants
- Simulation is a "technique not a technology"
- Discussion with senior resident engages them to think of possibilities

#### BENEFITS

Encourages team to think through case together

 Senior resident practices balance of allowing interns to evaluate vs stepping in

Role of rapid response reinforced

Whole team present for discussion

### LET'S PRACTICE

### SHARE YOUR SIM

### VIDEO TRIGGER

### THE DEBRIEF

#### WHAT IS A DEBRIEF?

- Serves as the most important part of the exercise
- Provides the chance to be a "cognitive detective"
- Moves participants from experiencing event to making sense of it
- Allows participants to close performance gap through self reflection



Rudolph 2006, 2008 Fanning 2006, Issenberg 2005

#### **REFLECTIVE PRACTICE**

- Scrutinize one's own practice to take steps to improve
- **Reflection in action**  $\rightarrow$  thinking on your feet
- Reflection on action → thinking afterwards what could have been done differently, how to change practice



# HOW DO YOU FACILITATE THIS REFLECTION?

- Balance of active learning by participants but not missing key teaching points
- Learning objectives should be revealed
- Exploration of frames or mental models
  - Serve as internal images of external reality
  - Influence clinical decision making based on frame held →
     lead to actions



#### **THREE PHASES**

#### Reactions

Understanding or analysis of what happened

#### Summary



#### **REACTIONS PHASE**

Allows participants to describe experience

"Clear the air"

How did it feel?



Directive Questions

Self

• Instructor describes gaps, offers solutions

• Learners derive what went well, what should change Assessment

Facilitated

Discussion

 Instructor facilitates self reflection on actions and frames

Cheng, Eppich 2014

- Directive questions
  - Time efficient
  - Useful for procedural or knowledge gap
  - Teacher centered
  - No exploration of rationale

- Self assessment (Plus Delta)
  - Draw two columns what went well, what would you do differently
  - Can be time efficient
  - Is learner centered
  - Can get off track
  - May miss rationale, facilitator may need to close performance gaps

Facilitated discussion (Advocacy Inquiry)

- Shifts focus from actions and moves it to frames
- Requires some debriefing skill, time
- Exploration of what happened through observations
- Allows performance gaps to be uncovered and closed by changing frames



#### **SUMMARY PHASE**

What worked well

What didn't work

Take-aways

### **KEYS TO EFFECTIVE DEBRIEFING**

- Create a supportive environment
- Facilitate in an honest, nonthreatening way
- Allow sharing of emotions
- Allow trainees to share their thoughts
- Focus on improvement

#### **PRACTICAL TIPS**

- Involve everyone
- Monitor nonverbal messages
- Verbal skills  $\rightarrow$  listen, rephrase, ask for elaboration
- Upset participant
  - Prevention key

### VIDEO TRIGGER

# APPLICATIONS BEYOND THE CLINCAL REALM

# IMPLEMENTATION LOGISTICS

### **Resident Barriers**

#### Time constraints

- Day shift work flow
- Night shift work flow

#### Buy in

- Physician
- Nursing

#### Coverage

- Patient care
- Didactics

# **QUESTIONS?**

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