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
IN 2003...
PATIENT SAFETY IS THE GOAL
THE IMPLEMENTATION

- Provides a mnemonic with a structured model for both verbal handoff and a written handoff document

- “Implementation of the handoff program was associated with reductions in medical errors and in preventable adverse events with improvements in communication…”

CONTIGENCY PLANNING

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”

Gaba, 2004
THE CASE FOR SIMULATION

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

Issenberg, SB et al, 2005
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

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
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
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

REFLECTIVE PRACTICE

- Scrutinize one’s own practice to take steps to improve
- Reflection in action → 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
REATIONS PHASE

- Allows participants to describe experience
- “Clear the air”
- How did it feel?

Rudolph et al, 2008
ANALYSIS PHASE

Directive Questions
- Instructor describes gaps, offers solutions

Self Assessment
- Learners derive what went well, what should change

Facilitated Discussion
- Instructor facilitates self reflection on actions and frames

Cheng, Eppich 2014
ANALYSIS PHASE

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

- 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
ANALYSIS PHASE

- 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

Observation
- I noticed....

Advocacy
- Your perspective (concern or appreciation)

Inquiry
- Their perspective (tell me about that...)
SUMMARY PHASE

- What worked well
- What didn’t work
- Take-aways

Rudolph et al, 2008
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 → listen, rephrase, ask for elaboration
■ Upset participant
  – Prevention key
VIDEO TRIGGER
APPLICATIONS BEYOND THE CLINICAL REALM
IMPLEMENTATION
LOGISTICS
Resident Barriers

Time constraints
- Day shift work flow
- Night shift work flow

Buy in
- Physician
- Nursing

Coverage
- Patient care
- Didactics
QUESTIONS?
REFERENCES


Issenberg, SB et al Features and uses of high-fidelity medical simulations that lead to effective learning: a BEME systematic review* Medical Teacher (2005) 27(1):10-28


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