Simulation-based Interprofessional Team training

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Simulation-based Interprofessional Team Training:

Developing an effective and sustainable program utilizing 360° evaluation of teamwork and communication skills
Workshop Objectives:

- Understand the components of a needs assessment for an interprofessional team training program
- Link a needs assessment to specific goals and objectives focusing on teamwork and communication skills
- Identify stakeholders and resources at your institution to aide in implementation of the program
- Understand how to utilize debriefing for 360° evaluation of teamwork and communication skills
Workshop Outline

• Introduction
• Principles of curriculum development and needs assessment
• Identify learning objectives (exercise)
• Our experience
• Stakeholders and barriers (group discussion)
• Debriefing and 360° evaluation
Introduction

• Who we all are
• What is interprofessional team training?
• Why should you care?
• Why simulation?
We are....

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And we have nothing to disclose
Our Program:

• An interprofessional team training program
  – Simulation-based
  – Pediatric Emergencies
  – Focus on Teamwork and Crisis Resource Management skills
  – In situ training
  – Multiple professions participate: MD, RN, RCP, PharmD
Interprofessional Education?

- What is it?
  - Learning with, from and about other health care professionals
Interprofessional Education

• What is it not?
  – Learners from different disciplines learning the same thing without reflection or interaction (multidisciplinary education)
  – A Pharm D teaching RN students about the role of pharmacists in a clinical team (interdisciplinary education)
Learning with, from and about – why?

1999 Institute of Medicine report “To err is human”

• Communication failures are the root of the majority of medical errors
• Team training is advocated to as a means to improve communication
Learning with, from and about – why?

ACGME competencies:

• Interpersonal and Communication Skills
  – “Communicate effectively with physicians, other health professionals, and health related agencies”
  – “Work effectively as a member or leader of a health care team or other professional group”

• Systems-based practice
  – “Work in interprofessional teams to enhance patient safety and improve patient care quality”
Interprofessional Education

• Simulation
  – “Safe” re-creation of real-life situations in which team work is essential
    • Safe for the patients
    • Safe for the learners
  – Allows for identification of errors in systems, environment and processes
  – Creates room to practice: make mistakes and learn from mistakes
  – ACGME has embraced simulation for teaching and assessment of competencies
Team training: Developing a Program

Kern’s 6 steps to curriculum development

1. *Problem identification*
2. *Needs Assessment*
3. *Goals and Objectives*
4. *Education Strategies*
5. *Implementation*
6. *Evaluation and Feedback*
Problem Identification

• What problem are you trying to solve and for whom? *For example:*
  – *Residency competency training*
  – *Nurse credentialing*
  – *Respiratory therapist familiarity with pediatric codes*
  – *Patient Safety*
Needs Assessment

• General and targeted:
  – What do learners from different backgrounds need to learn?
  – How do they learn it best?
  – What common learning needs do learners from different backgrounds have?

• How do you find out?
  – Training requirements
  – Credentialing criteria from professional organizations
  – Ask the learners, ask their teachers: surveys, focus groups, (informal) interviews
  – Pretests, direct observation of performance
Learning Objectives

• Follow from the needs assessment
• What is it that learners need to be able to do after completion of the program?
• Attainable and measurable
• Find the ones with overlap (common learning objectives) & address those with team training
• Identify the ones that are profession-specific & design different learning modules for those
Small Group Exercise

• Describe to the rest of your group a program that you would like to set up.
  – What is the problem identification?
  – Who are the learners and what do they need to learn?
  – Identify common learning objectives among your learners from different professions
  – How would you go about a formal needs assessment?
Defining Learning Objectives and Developing a Program: Our Experience

• We started small: 2 groups (residents and nurses), one unit (PICU)
Common Learning Objectives

UCSF Children’s Hospital Mock Code Program

Learning objectives for all team members:

1. Early recognition, including:
   a. Recognize early signs of respiratory, circulatory and neurological compromise.
   b. Identify and apply strategies to preempt deterioration of an acutely ill child.

2. Awareness of working environment and resources, including:
   a. Describe appropriate mechanisms to get help for emergencies and codes (alarms, rapid response and code blue system)
   b. Identify and locate additional resources (airway supplies, code cart, defibrillator)
   c. Activate the rapid response and code blue teams and describe their functions

3. Provide basic resuscitation skills for children, including:
   a. Position and clear the airway, apply oxygen, and bag-mask ventilate
   b. Perform effective chest compressions
   c. Identify need for and obtain vascular access

4. Operational knowledge of equipment, including:
   a. Select appropriate oxygen supply system
   b. Locate equipment in the code cart
   c. Operate the defibrillator

5. Efficient teamwork and effective communication, including:
   a. Identify the role and responsibilities of each team member
   b. Take responsibility for tasks
   c. Direct communication and closing the loop
Specific Learning Objectives

• MD: procedural competency
  – *Procedural skills lab as separate sessions*

• RN: defibrillator competency
  – *Extra hour for RNs only*

• Medical knowledge
  – *Handouts*
MOCK CODE / EMERGENCY SITUATION SCENARIO: SVT

SPECIFIC OBJECTIVES FOR THIS SCENARIO:
After participating in this mock code, participants will be able to
1. Recognize SVT as a cause of tachycardia
2. Apply the treatment algorithm for narrow-complex tachycardia
3. Operate the defibrillator to perform cardioversion

Introduction: 28-day old child transported from OR where she presented with respiratory distress and diarrhea. Reportedly needed 10 L of oxygen via non-rebreather at the outside, but looked really good when she got to the PICU. Weaned down to 1 L nasal cannula and looked like she could go to the floor, now increasingly tachypneic and looks mottled.

Initial assessment: pale, irritable child

FIRST THINGS FIRST: Assess - ABC
Airway: patent
Breathing: tachypneic, some retractions, lungs clear
Circulation: cool, very rapid pulses, delayed cap refill
Disability: agitated

Expose the child!

Categorize: tachycardia / shock (be prepared for: decompensated shock/caridopulmonary arrest)

Action:
1. Call for help!
2. Give oxygen
3. Ensure child is on a heart rate monitor with pulse oximetry & cycle blood pressure every 1-3 min

Continue assessment:
History: born at term, slow weight gain.
Weight: 3.8 kg, one 24G PIV, flushes but is positional

Vital signs: HR 280, narrow complex on monitor and no p-waves. BP not picking up RR 48 O2 Set 94%. Temp 37.8 °C. Child has become obtunded.

Categorize: Narrow-complex tachycardia with pulses and poor perfusion (be prepared for cardiopulmonary arrest)

Action:
1. Call for help: push the code button
2. Get the code cart & defibrillator
3. Cardiovert: (may try vagal maneuvers, but no delays)
   a. If you have adequate IV access: adenosine - 100 microgram/kg fast push (max dose 6 mg), retry with double dose if first dose not effective (max dose 12 mg).
   b. If you have no IV access: synchronized cardioversion- 0.5 J/kg, if not effective increase to 2 J/kg. Consider sedation, but no delays!
4. Call cardiology
5. Remember:
   • Always have EKG attached and recording
   • Always have defibrillator ready if you give adenosine
   • Always let cardiology know ASAP
   • Always remember A&B: put patient on oxygen, bag & mask ready

Case description: Arrhythmias in infants can present as failure to thrive, respiratory distress, feeding intolerance. On chest X-ray, this child had an enlarged heart, indicating that she probably had had SVT on and off for a while. Infants typically tolerate SVT quite well, but over time it may cause cardiomyopathy.
Stakeholders

Discussion points:

• Who are the stakeholders at your institution for the interprofessional team training program you are proposing?

• How can you capitalize on those stakeholders?
Barriers

Discussion point:

• What are the barriers you perceive?
Our Barriers

- No money
- No space
- No time
- Not the culture
Interprofessional Team Training

Changing the culture through debriefing and 360° feedback and evaluation

• Do it together:
  – program leadership
  – Debriefing

• Make it safe

• Make it the norm
Video Examples
Our Debriefing & Peer Evaluation Tools

• Based on learning objectives:
  – Common learning objectives
  – Scenario-specific learning objectives

• Check list for team training facilitators

• Assessment form for facilitators and participants:
  – Team leadership
  – Teamwork
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<thead>
<tr>
<th>GENERAL OBJECTIVES</th>
<th>YES</th>
<th>NO</th>
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<tbody>
<tr>
<td><strong>Situational Awareness</strong></td>
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<td>Recognition of critical problem</td>
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<td>Complete ABC assessment</td>
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<td>Vital signs (incl. O2 sat) obtained</td>
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<td>Vital signs correctly interpreted</td>
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<td>Focused physical exam performed</td>
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<td>SAMPLE information obtained</td>
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<td>Adequate and frequent reassessment</td>
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<td>Anticipation of next events</td>
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<td><strong>Resource Utilization</strong></td>
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<tr>
<td>Patient put on appropriate monitor</td>
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<td>Help requested in timely fashion</td>
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<td>Help requested in correct way (per unit protocol/recommendations)</td>
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<tr>
<td>Code cart and defibrillator brought in</td>
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<td><strong>Leadership</strong></td>
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<td>Role identification: both physician leader and charge nurse</td>
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<tr>
<td>Appropriate delegation and role assignment to others (RN and MD)</td>
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<td>Summarizes and categorizes</td>
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<td>Makes prompt and firm decisions</td>
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<td>Leader communicates with team effectively (RN and MD)</td>
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<td><strong>Teamwork/ Communication</strong></td>
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<td>Initial responder provides summary</td>
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<td>Team members offer to take on tasks</td>
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<td>Team members choose appropriate tasks</td>
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<td>Team members stick to task</td>
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<td>Team members collaborate</td>
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<tr>
<td>Closed-loop communication</td>
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<td>Calm atmosphere</td>
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<td><strong>Airway/Breathing</strong></td>
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<td>Adequate assessment: patient exposed, auscultation</td>
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<td>Appropriate interpretation of pulse oxymetry</td>
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<td>Need for respiratory support appropriately identified</td>
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<td>Appropriate O2 delivery equipment</td>
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<td><strong>Circulation</strong></td>
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<tr>
<td>Adequate assessment: pulses vs heart rate on monitor, blood pressure</td>
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<td>Need for access assessed</td>
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<tr>
<td>Access obtained as appropriate (site, use of IO when IV unsuccessful)</td>
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<tr>
<td><strong>Other</strong></td>
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<td>Broselow tape used if appropriate</td>
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<td>Use of gloves</td>
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<td>Parents involvement/awareness</td>
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<thead>
<tr>
<th>SCENARIO SPECIFIC OBJECTIVES</th>
<th>Y</th>
<th>N</th>
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<tbody>
<tr>
<td>Prompt recognition of arrhythmia</td>
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<td>EKG/defibrillator to analyze rhythm</td>
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<td>Recognition of SVT</td>
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<td>Correct identification of PALS algorithm</td>
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<td>Appropriate use of vagal manoeuvres</td>
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<td>Correct administration of adenosine</td>
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<td>Correct choice for cardioversion</td>
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<td>Correct voltage, escalate for next shock if needed</td>
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### Evaluation of Teamwork (performed by all observers)

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<th>YES</th>
<th>NO</th>
<th>COMMENTS</th>
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<tr>
<td><strong>Situational Awareness:</strong></td>
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<tr>
<td>• The team recognized the critical problems with the patient</td>
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<td>• The team frequently reassessed</td>
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<td><strong>Resource Utilization:</strong></td>
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<tr>
<td>• The team had everything they needed, and accessed additional resources / requested assistance when appropriate</td>
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<td><strong>Team Communication:</strong></td>
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<tr>
<td>• Team members used direct communication and “closed the loop” (reported back on assigned tasks).</td>
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<td>• Team members offered suggestions in a non-disruptive manner.</td>
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<td><strong>Teamwork:</strong></td>
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<tr>
<td>• Team members chose appropriate tasks and sticked to tasks.</td>
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<td>• Team members collaborated in a clear and helpful manner</td>
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**Evaluation of Code Leader**

*Person completing this form: ☐ RN facilitator ☐ MD facilitator ☐ MD resident observer*

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<tr>
<td>Identified self as leader</td>
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<td>Delegated tasks appropriately and assigned roles to others</td>
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<td>Summarized situation accurately and categorized appropriately based on assessment</td>
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<td>Made prompt and firm decisions</td>
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<td>Communicated with team effectively</td>
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Tips to Start

• Start small

• Identify stakeholders and their needs, incorporate those into your program
  – Examples: defibrillator competency for nurses, ACGME competency assessment for residents

• Use available resources
  – TeamSTEPPS, scenario books
  – School of Nursing/ School of Medicine
Tips to Sustain

• Agree on best time, and don’t cancel
• Emphasize respect during debriefing to create a culture for interprofessional feedback
• Collect data and use these to gain further support
• Train others early on to become champions
• Create a shared (on-line) forum