Simulation: Are We Clear With Our Objectives?

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Banff 2020
...and I should care, why?
Objectives

By the end of this presentation you will be able to

1. Identify how simulation can be optimally utilized for clinical education and hospital quality improvement

2. Understand the utility of having clear objectives (either educational or for quality improvement)

3. Develop and introductory approach to using simulation in your own institution.
What is your objective?

Is your objective SMART?

Is simulation the best tool?

Which simulation is best?
What is your objective?

Clinical Situations
What is your objective?

Surgical Procedures
Critical Patient Safety Event involving a Massive PPH in the OR

1. Roles & responsibilities of each team member were ambiguous and poorly defined when responding to massive obstetrical hemorrhage.

   Clearly define the roles and responsibilities of each team member who is involved in the management of a massive PPH.

2. Hospital system deficiencies impeded the ability of the team to respond efficiently to obstetrical haemorrhage (Massive Transfusion).

   Identify and remove latent safety threats that may impair management of a massive PPH.
Is your objective SMART?
**S** Specific

You goal should be as specific as possible and answer the questions: What is your goal? How often or how much? Where will it take place?

**M** Measurable

How will you measure your goal? Measurement will give you **specific feedback** and hold you accountable.

**A** Attainable

Goals should push you, but it is important that they are **achievable**. Are your goals attainable?

**R** Realistic

Is your goal and timeframe **realistic** for the goal you have established?

**T** Timely

Do you have a **timeframe** listed in your SMART goal? This helps you be **accountable** and helps in **motivation**.
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Is simulation the best tool?

Other Options

- Didactic Lecture
- Online Module
- Workshop
- Small group session
- Mentorship
Need **MODELS** to simulate

Model represents the key characteristics or behaviours of the selected system or process
Simulation definitions

• **Simulation**
  • Is the imitation of the operation of a real-world process
  • Is an **educational strategy** that helps learners acquire essential healthcare competencies through repetitive practice in technology-enhanced environments that mimic clinical realities

• **Debriefing** is the process where by the healthcare team can reexamine the clinical encounter to foster the development of clinical reasoning, critical thinking, judgment skills, teamwork and communication through a **reflective learning process**

In Situ Simulation | LITFL: Life in the Fast Lane Medical Blog: http://lifeinthefastlane.com/ccc/situ-simulation
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Simulation definitions

**Procedural Simulation**

- The use of a simulation modality (for example, task trainer, manikin, computer) to assist in the process of learning to complete a technical skill or a procedure
- NB: Consider using different models to teach a different part of the procedure and linked to a specific objective

Simulation definitions

**Theatre-based simulation**

- Simulation involving preordained series of actions based on the time and sequence of specific events.
- Follows a script which provides a detailed plan of action for a simulation case; similar to a theatrical play.
- Optimal for teaching CRM and Non-technical skills

Simulation definitions

**Process Simulation**

- A simulation in which the process is considered more important than the outcome.
- Best for identifying latent safety threats

Simulation definitions

- **In Situ Simulation** is simulation that takes place in the actual working environment and involving those who work there.
- Distinct from **Centre-Based Simulation**, which takes place in a simulation space separate from the work environment.
An actor + Mama Nathalie & IV arm

Clearly define the roles and responsibilities of each team member who is involved in the management of a massive PPH

Identify and remove latent safety threats that may impair management of a massive PPH

Sim Mom simulator
Large Scale In Situ Simulation

- Focus on process and identification of latent safety threats
- Mock patient was created in the hospital computerized system to understand the interface between Labour and Delivery, OR, Transfusion Medicine and Laboratory Services during an emergency
- Multiprofessional teams: Nurses, Anaesthesiologists, Obstetricians, Respiratory Therapists, Unit clerk, Transfusion Medicine personnel, Laboratory Services personnel
- Focused debrief following simulation
- Development of roles and responsibilities protocol for management of Massive PPH
- Ability for team members to adequately perform their role and responsibilities was inhibited by several Latent Safety Threats that were identified

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<th>Anesthesiologist</th>
<th>Circulating RN</th>
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| **1. Activate Obstetric Massive Transfusion Protocol**<br>• State to team “Activating Obstetric Massive Transfusion Protocol”<br>• Request 2nd Anesthesiologist on call to assist in OR<br>After initial MTP pack order blood components as required:<br>  • 6 U RBC’s and 4 U FFP’s prepared in case of continued bleeding and poor hemorrhage<br>  • 4 U FFP if INR > 1.5<br>  • 1 U PII if count is < 50 x 10^9/L<br>  • 10 U cryoprecipitate if fibrinogen is < 1.5 g/L<br>**2. Establish hemodynamic monitoring & access as needed:**<br>  • Arterial line<br>  • Central line<br>**3. Order blood work**<br>  • Repeat CBC<br>  • Coagulation panel<br>  • Lytes - include Ca^2+ , ionized Ca^2+ and Mg^2+<br>  • Urea, Creatinine<br>  • ABG every 45 – 60 min<br>**4. Consider additional assistance**<br>  • Consider calling intensivist<br>  • Consider transferring patient to St Paul’s or VGH<br>**1. Activate Obstetric Massive Transfusion Protocol and note time**<br>• Call Charge Nurse<br>• Slate “Obstetric Massive Transfusion Protocol activated”<br>• Request 2nd Anesthesiologist on call to be paged for assistance in OR<br>• Request 2 additional RN’s (Transfusion RN & Assistant Circulating RN) to OR<br>**2. Assign/Reassign RN roles of Primary & Secondary RN to Runner RN, Transfusion RN & Assistant Circulating RN**<br>**3. Monitor blood loss**<br>• Weigh & count sponges/pads/linen<br>• Assess suction canister volume<br>• Assess for coagulation of blood<br>• Communicate blood loss to Assistant Circulating RN
Latent Safety Threats Identified and Changes Implemented

- Organize hemorrhage cart
- Install 2nd phone in OR
- Relocate equipment in the OR to facilitate access/use
- Installed whiteboard in the OR to track blood loss
- Documentation
- Massive Blood Transfusion Pack
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Which simulation is best?

I don’t know

Other education modalities

Simulation Design
Simulation is only as good as the objectives behind it