SIMULATIONS AND DRILLS: EDUCATIONAL TOOL #1: GUIDELINES FOR SIMULATION SCENARIO DEVELOPMENT

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The scenario is the structure of simulation-based training (SBT). In general, scenarios are comprised of an overview, set up instructions for the simulation, guidelines for running the scenario for participants, debriefing aids and the documents that support the content in the scenario. Below is a brief discussion of the components of the scenario with suggestions and examples for generation of new scenarios or the alteration of existing scenarios to better meet the needs of your participants (learners). For more in depth review and instruction on scenario development we recommend you attend a simulation instructor program.

SCENARIO OVERVIEW

The scenario overview provides basic information about the scenario. Contents of the overview include the patient history or story, learning objectives, target audience (participants the scenario is written for) and approximate time of the scenario.

The patient history or story can be taken directly from an existing scenario or from an actual patient case. Of all the information contained in the scenario, the most important is the learning objectives. Learning objectives guide development of the scenario. They assist the simulation instructors in determining what cues are needed in the scenario, what type of manikin or task trainer should be used, how many actors are needed in the scenario, what critical behaviors should be accomplished by the participants in the scenario and they directly guide debriefing questions that set the stage for the participants to engage in discussion that promotes learning. Below are examples of learning objectives that are specific to hemorrhage. These learning objectives can be used as is or altered to meet the specific learning needs of your participants.

Learning objectives are broken down into three categories based on the skills that should be demonstrated in the scenario or drill. Selection of learning objectives should be based on who is being trained, what you want them to learn and what areas for improvement are being targeted. Target areas are identified by risk management data, patient safety data, and data collection from the patient care unit or root cause analysis. Also, different disciplines may require additional learning objectives specific to their skill set or role. Limiting the number of learning objectives per category to no more than three (additional discipline specific learning objectives may be added as stated above) helps to keep the scenario from becoming too lengthy and facilitates thorough debriefing.

In addition, consider providing information found in the cognitive learning objectives in advance (unit policies, bulletins, monographs or current literature) for participant review to allow more debriefing time to focus on technical and behavioral skills. You may also want

to consider the addition of metrics or measurements in the scenario to illuminate unit issues, issues with unit policies or procedures or for report generation on the simulation training session(s). Open-ended questions are listed with each set of learning objectives that can be used during debriefing.

EXAMPLES OF LEARNING OBJECTIVES FOR HEMORRHAGE

Cognitive Skills (what you want participants to know)

Sample Learning Objectives

- Knowledge of signs and symptoms of hemorrhage during pregnancy
- States major causes of hemorrhage in pregnancy
- Lists changes in maternal physiology that may mask symptoms of hemorrhage
- Knowledge of hospital policies and procedures for hemorrhage management, placement of tamponade devices and blood transfusion particularly massive transfusion

Metrics

- Test for fund of knowledge on hemorrhage or a specific policy such as the massive transfusion guideline
  Use in report on simulation training: identify gaps in knowledge to help prioritize learning objectives for next training session, guide on-going education plan for participants

Debriefing questions

- What is your assessment of this patient at this time?
- What could cause this or what is your differential diagnosis at this time?
- How do the changes in maternal physiology affect the signs and symptoms of hemorrhage?
- Based on this assessment, what are your priorities for patient care OR what is your plan for care?
- What prevented you from carrying out the priorities for care or your management plan? *(This question also has implications for behavioral skill discussion, for example was there not enough help, what prevented the team from calling for help?)*

Technical Skills (what you want participants to be able to do)

Sample Learning Objectives

- Provide adequate and continuous uterine massage
- Administer uterotonic medications in correct dose, route and time
- Application of devices (tamponade devices, uterine packing) to control bleeding per policy
- Quantify blood loss
- Order blood components or massive transfusion bucket according to policy
- Set up and initiate rapid blood transfuser

Metrics

- Measurements of time
    - Time of diagnosis of hemorrhage to administration of first medication
    - Time help paged to time help arrived in room
    - Amount of time uterine massage was stopped unless directed by physician
    - Time from request for tamponade device to completion of insertion
    - Time from request for blood to blood in patient room
    - Time from request for rapid infuser to start of volume infusion

  Excessive lengths of time for a task may indicate a knowledge gap, lack of system support or flawed policy
- Measurement of ability to accurately complete current policy/procedure
    - Key points from policy placed in a checklist that is reviewed during scenario or after

  Helpful to see where it is difficult for learners to comply with policy and can guide adjustments to unit to better support patient care
- Correct measurement of volume of blood loss
    - Comparison of the amount of blood used in scenario to the amount measured by participants during the scenario

  Helpful to see where unit or system can be adjusted to better support adoption of blood loss measurement

Debriefing questions

- What supported or prevented continuous uterine massage?
- What facilitated or delayed medication administration?
- What uterotonic medications have major contraindications?
- Why would a uterine tamponade device be considered at this time?
- What blood loss management strategies are options for this patient?
- How was the quantified blood loss information used in this situation?
- What supported or hampered measurement of blood loss?
- What is the massive transfusion policy in this institution?

- Under what circumstances would this policy be activated?
- What supported or delayed implementation of the massive transfusion policy?
- What is a fast process for getting rapid transfuser in room and setting it up?

Behavioral Skills *(how you want the team to perform)*

Sample Learning Objectives

- Communication between team members is directed to a person and acknowledged
- Communication during hand off is acknowledged by the receiver
- Concerns voiced about the patient or management plan are acknowledged by the team leader
- The team leader announces assumption of the role
- Team leader assigns roles if not already assigned or key role not filled
- Team leader communicates plan of care to the team
- All team members assume a role or ask leader how they can assist

Metrics

- Number of thin air or open air commands
- Number of thin air or open air communications
- Number of people in scenario without a role
- Roles not assigned or not filled during scenario
- Number of questions or concerns voiced about the management plan
- Number of changes in leaders

Information obtained from these metrics can be used to report adoption of key behavioral skills, recommend further training or educational offerings or alteration of unit practices

Debriefing questions

- How was team communication?
- How did communication improve or delay care of the patient?
- How did the communication between the leader and the team member giving report to leader impact patient care?
- Who is the leader at this point?
- Why did the role of leader change hands?
- What roles are filled and unfilled at this time?
- What strategies can the team use to fill key roles that are currently not filled?

SCENARIO SET-UP

This section of the scenario describes how the simulation area should be set up for the scenario. If several simulation training sessions are going to occur that require consistency taking a picture of the set up can be helpful. Having a list of items needed for the scenario and keeping those items in a bag or bin will facilitate set up. Clear directions should be included for set up of the manikin or task trainer. These directions should include any 'moulage' or make-up that is required. For hemorrhage scenarios this may include making artificial blood or using a red cloth to simulate bleeding.

RUNNING THE SCENARIO

This section gives clear direction to the person running the manikin or providing vital sign information to the participants. There should also be discussion with the person responsible for video recording to insure they are aware of the key parts of the scenario that should be captured on video. Actors or the voice of the patient will need clear roles and instruction. Lastly, be sure to designate where in the scenario the objectives are achieved to the point that the scenario can be stopped. For example, in a hemorrhage scenario this may be when 'blood' arrives for administration to the patient or when the 'blood' has been loaded into a rapid infuser.

DEBRIEFING AIDS

Developing open-ended questions in advance based on the learning objectives will help guide debriefing. In addition, use of metrics and critical behavior checklists will also assist in generating discussion pertinent to the learning objectives.

EVIDENCE FOR SCENARIO CONTENT

The last section of the scenario includes the evidence that supports the content in the scenario. Evidence may be in the form of unit policies and procedures, current literature or association guidelines such as those found in Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN), the American College of Obstetricians and Gynecologists (ACOG) or the American Society of Anesthesiologists (ASA).