

Scenario Overview

Summary

This scenario involves a 59-year-old man undergoing a left knee arthroscopy at a stand-alone facility. He develops an intraoperative ST-elevation myocardial infarction (STEMI) and needs to be transferred emergently to a higher level of care.

Scenario Setting

Operating room (OR) in an ambulatory surgical center (ASC)

Time

Pre-brief: 5 minutes
Simulation: 15 minutes
Debrief: 30 minutes

Participants

Multidisciplinary team members necessary to perform a knee arthroscopy with support of embedded simulation personnel:

- Surgeon
- Anesthesia professional (anesthesiologist, certified registered nurse anesthetist [CRNA])
- RN circulator
- First assistant (RN first assistant [RNFA], physician assistant [PA], resident)
- Scrub person
- Support personnel
- Resource RN

Potential Systems Explored

- Roles of the perioperative team members during an ASC emergent event
- Supporting technical and developmental skills
- Interprofessional training in communication and professionalism

Learning Objectives

1. The learner will identify the protocol for a patient requiring transfer to a higher level of care.
2. The learner will state the steps to be taken to transfer a patient from one facility to a higher level of care.
3. The learner will demonstrate interprofessional communication and professionalism with respectful interactions.

Participant Preparation

Pre-Simulation

- Read the following articles:
 - Blakeman TC, Branson RD. Inter- and intra-hospital transport of the critically ill. *Respir Care*. 2013;58(6):1008-1023.
 - Goldfarb CA, Bansal A, Brophy RH. Ambulatory surgical centers: a review of complications and adverse events. *J Am Acad Orthop Surg*. 2017;25(1):12-22.
 - Hains IM. Transfer troubles. AHRQ Web M&M [serial online]. <https://psnet.ahrq.gov/webmm/case/269#share-toolbar-panel>. Published June 2012. Accessed December 27, 2017.
- Review the facility policy for Transfer of the Patient to a Higher Level of Care.

Introduction

1. Sign in and obtain participant consents for video or research, if necessary.
2. Have participants introduce themselves:
 - a. Specialty
 - b. Experience and role
 - c. Something personal
3. Orient participants to simulation process:
 - a. Briefing
 - b. Case (simulation)
 - c. Debriefing—Discuss and review what went well and where there are opportunities for improvement
 - d. Feedback and closing
4. Discuss the course objectives.
5. Describe learning environment.
 - a. Simulation is a safe and confidential learning environment.
 - b. Acknowledge anxiety.
 - c. Assure participants of confidentiality about their performance.
 - d. Obtain buy-in for simulation activities. Treat the simulation as a real-life situation, given the limitations of working with a mannequin, simulated medications, etc.
 - Treat this patient as if it were your perioperative patient.
 - Inject medications as usual.
 - e. You will be video recorded for purposes of debriefing. The video will be destroyed/deleted per the simulation lab guidelines.
6. Discuss expectations of participants:
 - a. Clinical role (Be yourself.)
 - b. Assure participants that the embedded simulation personnel are there to help them, and there are no tricks.
 - c. Agree on a code word for a real event (the simulation will end immediately).
7. Identify equipment that is live or partially functional and explain any related safety issues:
 - a. Mannequin
 - b. Defibrillators/emergency equipment
 - c. Electrosurgical units (ESUs)
 - d. Cameras
 - e. Vital signs displayed on monitoring devices
 - f. Phone list
 - g. Documentation
8. Orient participants to patient's situation and assumed roles; provide role cards if applicable.
 - a. "It is 10:00 am on a Thursday and you are taking care of a patient with..."
 - b. "Your table is set up, and all items have been counted."
 - c. "You will start with conducting a time out."
9. Ask participants if there are any questions before beginning.
 - a. Answer any additional questions/clarify the shared mental model.
 - b. Announce that the simulation is starting.

Set-up

Room

- Simulation OR—make every effort to mimic a live OR setting and consider the following:
 - Where are the phones located?
 - Where are the phone extension lists posted?
 - Where are the surgical crisis checklists located?
 - How much space will be required for equipment and transport of the patient (see below)?

Equipment and Supplies

- OR bed
- Mannequin: Man with tourniquet on left thigh
- Identification band for the mannequin
- IV solution (1 L) and tubing
- Model: Surgeons have just finished closing the left knee trocar sites after a knee arthroscopy for osteoarthritis
- Back table basic setup, including:
 - Arthroscopic instrumentation, including scope and trocars
 - Scope tower, light source, pumps as required, empty irrigation bags
 - Used sponges and instruments on the sterile back table
 - Closing sutures on the back table
 - 0.5% bupivacaine
- Mayo stand with basic setup
- Electrosurgical unit
- Emergency cart/defibrillator
- Anesthesia machine equipped with
 - oxygen
 - electrocardiograph
 - pulse oximeter
 - blood pressure monitor

Medications

Consider the simulation environment when preparing medications. Be sure that all medications are clearly labeled and identified as simulated if applicable. Simulated medications should not be available in any patient care areas.

Simulator Preparation

- Mannequin
 - The patient is intubated
 - Defibrillator pads are on the patient and connected to the defibrillator
 - Counts have been completed
 - The patient has an IV in his right arm
 - Simulator program (vital signs, responses, etc)
 - Need appropriate dressings for a left knee arthroscopy

Sequence of Events

The introductory briefing will include the following information before the team enters the OR:

- The patient has undergone a left knee arthroscopy for osteoarthritis under general anesthesia.
- He became a little tachycardic and hypertensive with intubation, but that resolved and the surgery was uneventful until skin closure.
- At that time, the patient experienced a STEMI and required cardiopulmonary resuscitation.
- Now, the patient has been stabilized, the incisions are closed, all counts are complete and correct, the patient's wife is in the family waiting area, and the team needs to arrange a patient transfer to a facility with a higher level of care.

Sequence of Events

Skills Assessment - HOSPITAL TRANSFER/ADMISSION

Continue with the simulation until the following actions/treatments are completed.
Treatment action time points are referenced from time of crisis announcement.

Action/Treatment Checklist	Time	Skill met	Skill not met
Announce need for patient transfer			
Identify team leader and assign roles			
Determine acuity of patient for transfer			
Call 911 if unstable, or call Emergency Medical Services			
Communicate to receiving facility: Surgical hand off			
Communicate to receiving facility: Anesthesia provider hand off			
Communicate to receiving facility: Nursing hand off			
Communicate to transport team: Emergency Medical Services hand off			
Include copy of Medical Records/Transmission of Electronic Medical Record (as appropriate)			
Consider equipment needs for transport			
Consider physical space for transport (elevator/doorways)			
Determine personnel needs			
Initiate family communication			

Debrief

Begin debriefing by soliciting the participants' reactions to the simulation experience. Clarify with the team the patient situation so that everyone is on the same page.

- Clarify confidentiality and expectations.
- Review the learning objectives.
- Discuss what happened in the simulation.
- Review what went well.
- Consider opportunities for improvement.
- Encourage expression of reactions.
- Ask participants:
 - “How did participating in this simulation make you feel?”
 - “Describe your thinking when...?”
 - “Were there performance gaps?”
 - “What could be changed in the OR?”
- Review the participant's roles and team expectations.
- Review principles of effective interprofessional teamwork.
- Review expectations for effective communication.
- Discuss appropriate post-event actions:
 - Consider keeping the patient intubated and sedated.
 - Monitor the patient for 24 hours post-recovery.
- Identify learner issues.

Resources

Pre/Post Test

1. As health care becomes more centralized and specialized, the necessity for transferring patients to a higher level of care will increase.
 - A. True
 - B. False
2. Patient selection for ambulatory surgical center procedures may include which of the following?
 - A. Age
 - B. American Society of Anesthesiologists physical status classification
 - C. Medical history
 - D. Type of procedure
 - E. All of the above
3. Patients being transferred to a higher level of care should have continuous physiologic monitoring at minimum, including
 - A. Blood pressure, heart rate, and respiratory rate.
 - B. Heart rate and respiratory rate.
 - C. Electrocardiogram, pulse oximetry, blood pressure, heart rate, and respiratory rate.
4. Factors that contribute to the increase in ambulatory surgery center procedures include which of the following?
 - A. Greater convenience for patients, faster surgical times, and lower financial costs
 - B. Increased physician and personnel satisfaction
 - C. Closure of inpatient facilities
5. Transferring patients imposes a risk to patient care.
 - A. True
 - B. False
6. What is the most frequent cause of an adverse event in transporting a patient to a higher level of care?
 - A. Inadequate preparation of teams
 - B. Lack of knowledge of procedures
 - C. Communication errors
7. The most common reason(s) for patient transfer may include which of the following?
 - A. Specialized care is not available at the referring organization
 - B. The referring institution cannot provide the level of necessary care
 - C. Lack of ICU beds
 - D. Higher cost
 - E. All of the above
8. What is the most common reason for transporting a patient to a higher level of care?
 - A. Respiratory problems
 - B. Surgical site infection
 - C. Reaction to antibiotics
9. The most common adverse event(s) to occur during transfer may include which of the following?
 - A. Monitor failure
 - B. Pump failure
 - C. Extubation
 - D. Ventilation failure
 - E. All the above
10. Which method of ventilation is safer when transporting an intubated patient?
 - A. Manually ventilation
 - B. Use of a portable ventilator

Resources

Test Answers

1. A (Hains, AHRQ PSNet)
2. E (Goldfarb, p. 20)
3. C (Blakeman, p.1012)
4. A (Goldfarb, p. 12)
5. A (Blakeman, p. 1012)
6. C (Hains, AHRQ PSNet)
7. E (Hains, AHRQ PSNet)
8. A (Blakeman, p. 1012)
9. E (Blakeman, p. 1012)
10. B (Blakeman, p. 1008)

References

- Blakeman TC, Branson RD. Inter- and intra-hospital transport of the critically ill. *Respir Care*. 2013;58(6):1008-1023.
- Goldfarb CA, Bansal A, Brophy RH. Ambulatory surgical centers: a review of complications and adverse events. *J Am Acad Orthop Surg*. 2017;25(1):12-22.
- Hains IM. Transfer troubles. AHRQ Web M&M [serial online]. <https://psnet.ahrq.gov/webmm/case/269#share-toolbar-panel>. Published June 2012. Accessed December 27, 2017.

Other Resources

- Safer Handoff of Older Adult Patients: Patient Handoff Checklist and Patient Handoff/Transfer Form. 2010. Emergency Nurses Association. http://www.stratishealth.org/documents/SaferHandoff_Checklist_and_Transfer_Form.pdf. Accessed December 27, 2017. May be used without permission.
- Transfer of patient care between EMS providers and receiving facilities. American College of Emergency Physicians. <http://www.acep.org/Clinical---Practice-Management/Transfer-of-Patient-Care-Between-EMS-Providers-and-Receiving-Facilities/>. Approved October 2013. Accessed December 27, 2017.

Resources

Considerations for Simulation Variation

- This scenario may be adapted for a mock drill in which specific elements of patient transfer to a higher level of care are discussed.
- This scenario may serve as initial information to create facility-specific guidelines for transferring a patient to a higher level of care.
- Consider using this simulation to evaluate communication hand-off skills during patient transfer procedures.

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