Identification of targeted learners

The targeted learning population consists of PGY-1 orthopaedic surgery residents, medical students, mid-level providers and other personnel learning to assist in an orthopaedic operating room.

Identification of need or problem for targeted learners

Knowledge and technical skill in sterile technique, patient positioning, prepping and draping, and instrument recognition is variable and often low for entering PGY-1 and others with little experience in an orthopaedic operating room.

Current educational approach to address need or problem

Currently these skills are learned in the OR by watching and being instructed during actual surgical procedures. There is often limited time and opportunity to teach and practice techniques. Variability in experience leads to inconsistent skill development and a potential for unanticipated gaps in knowledge and skills. Errors can be costly, delay surgery or compromise the sterile field. The names and uses of instruments are typically learned only through repeated exposure which is inconsistent.

Ideal educational approach to address need or problem

Ideally the OR set-up, positioning, draping, and prepping should be taught in a controlled environment without risk for prolonging anesthesia or compromising a sterile field. There should be a good understanding of the types and uses of available surgical instruments before a trainee begins to operate.

Goals and Objectives

Goals for module participant:

- Knowledge of the practices of sterile technique
  - OR clothing policies
  - Shoe wear
  - Scrubbing
  - Gowns/gloves/hoods
  - How to maintain sterile field
- Knowledge of OR room set-up
  - Types of OR tables
  - Position in room
  - Other equipment (C-arm, scope towers, monitoring)
- Knowledge of patient positioning
  - Supine, Beach chair, Lateral decubitus, Prone
  - OR Table attachments
  - Fracture table with or without traction
  - Protection of well arm(s), leg(s)
  - Maintenance of patient normothermia
- Knowledge of surgical site preparation
  - Pre-operative skin marking
  - Hair removal
  - Tourniquet use
  - Skin prep options and proper use
- Knowledge of the medical aspects of patient preparation for surgery
  - Medication continuation and discontinuation guidelines
  - Prophylactic antibiotic recommendations (type, dosage, re-dosing)
  - DVT prophylaxis guidelines
- Knowledge of the commonly available surgical instruments
  - Basic surgical instruments
Specific cognitive, affective, psychomotor task objectives

The learner will:

- Be able to complete pre-operative orders and instructions in compliance with institutional guidelines and quality measures.
- Be able to maintain sterile conditions in an OR and in a minor procedure environment (e.g. arthrocentesis)
- Be able to select and set-up the proper OR table for most common orthopaedic procedures
- Be able to safely transfer and position patients in the most common configurations for orthopaedic procedures
- Be able to properly prepare surgical sites for a wide variety of orthopaedic procedures
- Be able to appropriate select and utilization skin prep solutions for various orthopaedic procedures
- Be able to appropriately apply sterile drapes for common orthopaedic procedures including upper extremity, lower extremity and spine surgeries.
- Be able to identify and understand the appropriate use of surgical instruments commonly used in orthopaedic procedures

Syllabus Development

Assumptions

Participants will have some experience in an operating room, however this will generally be very limited in the months prior to beginning residency. There will be a large degree of variability in experience, knowledge and skills.

Suggested readings:


Description of laboratory module:

A. Preliminary reading, review presentations:

- Complete review of hospital peri-operative policies and procedures
- Review presentations on draping
- Complete presentation of AAOS Sign Your Site policy, informed consent

B. Patient preparation for surgery:

- Hands on review of the selection and use of commonly used OR tables
- Review on how to complete pre-operative order set on a simulated patient

C. Location of instruments in your O.R.:

- Review of the instrument trays available at home institution
  - Which trays should be requested for which cases?
- Review names and uses of instrument s in commonly used trays

D. Performance of techniques and procedures:

- In teams of 2 or 3, complete the positioning and draping for:
  - hand procedure;
  - shoulder procedure (lateral and/or beach chair);
  - hip procedure;
  - knee/ankle procedure;
  - spine procedure
Simulate proper prepping technique for each of above procedures

E. Common errors and prevention strategies:
   □ Expert performance / video
   □ Review pitfalls
     • Powerpoint presentations
     • Expert demonstrations

F. Recommendations for motor skills practice:
   □ Supervised feedback on live cases

G. Supplies and station setup:
   □ OR room after hours or weekend
   □ Drapes and supplies from OR can be reused multiple times
   □ May wish to use mannequin or volunteer for practicing draping

H. Suggested duration for completion of module:
   o 2-4 hours

I. Estimated budget for this module:
   o Minimal

Periodic Curriculum Review, Evaluation, Validation, and Refinement

Continuous program update and improvement as needed.

Learner Evaluation and Feedback

Methods of Performance Assessment

A. Methods of Assessment:
   o Observe positioning prepping and draping of at 2 different limbs
   o Record any breaks in sterile technique
   o Record efficiency and order of performance
   o Quiz on 10 surgical instruments

B. Suggested proficiency benchmarks (i.e., passing score(s) for module completion):
   o No breaks in technique
   o 80% correct in knowledge of instruments

C. Method(s) for learner de-briefing and for feedback from learner:
   o Immediate feedback on performance, score.