Get Your Sim On!

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Learning Objectives

- Review basic principles of healthcare simulation
- Know key components of effective individual, team, and system-based simulations
- Develop 3 simulation-based tactical plans to use in outbreak planning
- Implement effective simulations to help train personnel in the event of an outbreak

Simulation Should Be a Cycle
Healthcare simulation is a range of activities that share a broad, similar purpose—to improve the safety, effectiveness, and efficiency of healthcare services.

Simulation Locations

In Sim

In Situ
Simulation Types

Immersive

Procedural

Simulate to Train All Levels of Healthcare Delivery

Systems Training

Individual Training

Team Training
Procedural Training—Key Principles

- Deliberate practice
- Mastery learning
- Novice vs expert—development of expertise
- Development and use of checklists

Simulation Prevents Skill Decay and Ensures Clinical Competence

![Skill Acquisition Curve](Dong Y, et al. Chest. 2010;137:1050-6.)

- Traditional training
- Simulation-based training
Procedural Skills Acquisition Framework

Cognitive Phase

Psychomotor Phase

Learn  See  Practice  Prove  Do  Maintain

Application to Outbreak Response Training

- Donning and doffing
- Performing procedures in PPE
Ebola Care PPE/Open Lab Sessions/Doffing Expert Training

Procedural Training

- Pre-training
- Training
- Post-training
- Ongoing maintenance
Team Training—Key Principles

- Requires standardization of process and language
- Will need to use as much of the actual patient care equipment as possible

Team Training

- Pre-training
- Training
- Post-training
Ebola Care Team Training

Care Team Tasks
- Language
- Work flow in situ
- Team member communication

Integration of Patient Care Tasks
- Starting IVs
- Drawing lab samples
- Performing handoffs
Ebola Care Floor Training

**Patient Care Tasks**
- Portable radiographs
- Bedside lab testing
  - i-STAT
  - Rapid malaria and influenza testing
- Waste removal and disposal
- Patient bathing and changing

**Team Dynamics**
- Calling for help
- Using alternative communication measures
- Team member down

System-Based Testing—Key Principles

- Anytime, anywhere, through any point of access
- Can be low budget to high stakes
System-Based Testing

- Secret shoppers
- In situ drills

In Situ Simulation

- In situ simulation is an experience that is integrated into the actual clinical environment and involves participants who are on-duty employees, clinical and nonclinical, during their actual workday
Standardized Patients/Secret Shopper Drills

Importance of Simulation

- Provides a safe environment to test systems and protocols
- Allows an opportunity for experiential learning for individuals and interprofessional teams to reinforce appropriate behaviors
- Provides high-fidelity training for high-stakes Ebola patient care
- Employs repetitive performance of cognitive and psychomotor skills
- Employs rigorous skills assessment and individual feedback from experts
Additional Resources

- Harvard Center for Medical Simulation. [www.harvardmedsim.org/resources.php](http://www.harvardmedsim.org/resources.php)
- Hennepin County Medical Center Simulation Center: Resources. [www.hcmc.org/education/sim/sim-resources/index.htm](http://www.hcmc.org/education/sim/sim-resources/index.htm)
- Donning and Doffing PPE Competency Validation Checklist. [www.apic.org/Resource_/TinyMceFileManager/Topi specific/Donning_and_Doffing_PPE_COMPETENCY_VALIDATION_CHECKLIST.pdf](http://www.apic.org/Resource_/TinyMceFileManager/Topi specific/Donning_and_Doffing_PPE_COMPETENCY_VALIDATION_CHECKLIST.pdf)