Translating Military Simulation to Healthcare Simulation:
Lessons Learned from the Medical Simulation and Training Centers

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Left & Right of the Blast
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Combat Simulations
Learn to be successful in battle

Right of the Blast
Medical Simulations
Recovering from the outcome of battle

Cusp of Mortality
For a Young Soldier
Classic Greek Elements

Earth
Fire
Air
Water
Classic Military Simulation Elements

Live

Virtual

Constructive

Games
Military Medical Simulation Elements

Live

Virtual

Constructive

Games
**IV Arm insertion.** Ability in the right IV arm for insertion into peripheral vein of forearm, antecubital fossa and the dorsum of the hand. Simulated blood flashback on cannulation. IV Bolus or infusion and sites for subcutaneous or intramuscular injections.

**Chest Tube insertion.** Ability to have a chest tube insertion as well as the ability to provide the results thru the physiological medical scenario that is run automatically thru software.
Core Technologies

Live

- Pyro, Smoke, Tear Gas
- Lasers & Sensors
- Range Instrumentation & Tracking
- Video & Audio Recording
- Virtual Reality Overlays

Constructive

- Logic Threads
- Mathematics
- Databases (Terrain, Scenarios, Results)
- Global Networks
- Aggregation of Data
- Interface to Combat Computers

LVCG Integration

- Human Mediated
- Database Mirroring
- Computer Protocol

Virtual

- Vehicle Mock-ups
- Computer Graphics
- Computer Sound
- Tactile Instruments
- Mathematics
- Databases
- Local Networks

Games

- Computer Graphics
- Computer Sound
- Artificial Intelligence
- Human Interface Design
- Local Networking
- Logic Rules
Civilian Medical Simulation Elements?

- Live
- Virtual
- Constructive
- Games
Real equipment is generally not workable in a high use simulator. Too Expensive, Too Fragile, Short Operational Life. Need training versions of many items.
Transferable Experience

Commander & Staff
- Pilot, Gunner, Driver
- Infantry

Medical Resource Manager
- Doctor, Nurse, Technician
- Medic, EMT

Leader
Team
Individual
### Similarities

**Leadership:**
- Manage Resources, Measure Performance, Provide Feedback

**Team:**
- Hand/Eye/Mind Coordination, Teamwork, Emotional Response, Situational Learning

**Individual:**
- Diagnosis, Sustainment, Repair, Routing

### Differences

**Materials:**
- Hard Steel vs. Soft Tissue

**Behaviors:**
- Human Attachment, Subject Response