Distributed, Fully-Immersive VR Medical Simulation Training for Team-Based Care

Karthik Sarma, Ph.D. Jason Ribeira, Jennifer Polson, Michael Barrie, and Ryan Ribeira
SimX, Inc.

COL John Dorsch
24th SOW, USAF
Distributed, Fully-Immersive VR Medical Simulation Training for Team-Based Care
Strategic Background

The “Golden Hour”
Strategic Background

Joint All-Domain Operations
Program Objectives

Improve Realism
Increase Flexibility
Reduce Cost
DOD Program Efforts To Date

**CORE CAPABILITIES ($2M)**
- AIO/XR2 Compatibility
- Austere / Disconnected Usability
- Battlefield Environments
- Debriefing / Tracking
- Sets, Kits and Outfits

**FLEXIBILITY ($2M)**
- Non-Collocated Multi-Team Training
- Dynamic Scenarios, Loadouts and Environments
- ATO Readiness
- Ease of Use
- Hand-Offs and Transitions

**CURRICULA ($7M)**
- AE/CCAT
- TCCC
- C-TCCC
- ARC
- PSMCC
- CBRNE
- EMS

© 2022 SimX, Inc.
TCCG-Directed Simulation Training
TCCC Roles and Tiers of Care

Clinical Practice Guidelines & Registry Data

JOINT TRAUMA SYSTEM

CASEVAC 1 Hour
BAS Role 1

TACTICAL MEDEVAC 1-24 Hours
FST, CRTS Role 2

STRATEGIC AE 24-72 Hours
CSH, EMEDS, EMF, TAH Role 3

OCONUS Definitive Care Role 4
Pre-Deployment Training & Sustainment Platforms (C-STARS, NTC, ATC)

Education, Training, and Research
Currency in EMCs

ASM - All Service Members (Tier 1)
CLS - Combat Lifesaver (Tier 2)
CM/HM - Combat Medic/Hospital Corpsman (68W/8404/4N) (Tier 3)
CP - Combat Paramedic/Provider (Tier 4)
ARC - Resuscitative Teams with an Advanced Resuscitative Care Capability

© 2022 SimX, Inc.
AIO VR for Enhanced Portability
Multi-Site Telepresence for Hand-Offs
Transferrable
In-Simulation
Clinical
Documentation

Battlefield Assisted
Trauma Distributed
Observation Kit
(BATDOK)
State-Based Reusable, Pluggable Simulation Framework
Real Time Assessment & Readiness Tracking

Integration with Airman Data Analysis and Performance Tracking System (ADAPTs)

Critical Actions

State 1 - Initial Assessment
1. Gather Appropriate History 10/10 pts
2. Take Vitals - Cardiac Leads - BP Cuff - Pulse Ox - Thermometer 10/10 pts
3. Apply O2 0/5 pts
4. Stethoscope Exam 5/5 pts
5. Cranial Nerve Exam 0/5 pts

Score: 71.4%

State 3 - Altitude Chamber
1. Gamow Bag to 2 PSI 10/10 pts
2. Explain Gamow Bag to Patient 5/5 pts

All Actions

<table>
<thead>
<tr>
<th>Timestamp</th>
<th>Action</th>
<th>Performed by</th>
</tr>
</thead>
<tbody>
<tr>
<td>16:44:12</td>
<td>Case start</td>
<td>Moderator</td>
</tr>
<tr>
<td>16:44:36</td>
<td>Patient audio: I'm Hillary Climber</td>
<td>Moderator</td>
</tr>
<tr>
<td>16:44:49</td>
<td>Patient audio: I'm feeling really out of breath</td>
<td>Moderator</td>
</tr>
</tbody>
</table>
Thank you!

karthik.sarma@simxar.com

Live demonstration available in the expo!

VR and AR Medical Simulation Training

Wireless, multiplayer virtual reality. Any patient, any case, any environment.

@simxvr.com
@simxvr
contact@simxvr.com