



# Building a Program of Research for Simulation in the United States Air Force Strategic Aeromedical Evacuation/ Critical Care Air Transport System

June 2016

Tiffany Losekamp RN, MSN, CNE, CHSE  
Col Susan Dukes, USAF, NC, PhD, CCNS  
Darcy Mortimer, PhD(c), RN, CCRN-K  
USAF School of Aerospace Medicine

*Integrity ★ Service ★ Excellence*



# ANCC



## Continuing Nursing Education



 **INACSL is an accredited ANCC provider.**



# DISCLOSURES



## ✧ **Conflict of Interest**

- Tiffany Losekamp (Presenter) reports no conflict of interest
- Julia Greenawalt (INACSL Conference Administrator & Nurse Planner) reports no conflict of interest
- Leann Horsley (INACSL Lead Nurse Planner) reports no conflict of interest

## ✧ **Successful Completion**

- Attend 90% of session
- Complete online evaluation



# Disclaimer



**The views expressed in this poster are those of the authors and do not necessarily reflect the official policy or position of the Air Force, the Department of Defense, or the U.S. Government.**



# Objectives



- ❖ **Describe the process of building a program of research for simulation**
- ❖ **Describe the research focus areas of the aeromedical evacuation (AE) and Critical Care Air Transport (CCAT) team simulation program**
- ❖ **Discuss challenges in building a program of research for simulation**
- ❖ **Discuss strategies for overcoming challenges in building a program of research in simulation**



# Background



Personal Photo Taken by: Maj. D. Bevington

**Increased use of simulation as a training modality due to:**

- ✪ **Downsizing of inpatient facilities**
- ✪ **High acuity of wounded warriors**
- ✪ **Decreased deployments**
- ✪ **Need for continued skills sustainment**



# Identification of Research Need



## ***An Integrated Review of Simulation Use in Aeromedical Evacuation Training*** (O'Connell et al., 2013)

- ✦ Effectiveness of simulation training
- ✦ Attributes of simulation
- ✦ Environmental aspects of simulation
- ✦ Use of simulation training in AE/CCAT operations



Personal Photo Taken by: Maj. D. Bevington

O'Connell KM, De Jong MJ, Dufour K, Millwater T, Dukes S, Winik C. Simulation use in aeromedical evacuation training: research gaps from an integrated review. *Clinical Simulation in Nursing*. 2013;66;3-15.



# Process of Building a Program of Research



- ✧ **Create a core simulation research team**
  - Team Leads, 2 Simulation Nurse Researchers
  
- ✧ **Develop a simulation research roadmap**
  - Perform a scoping study
  - Build research trajectories based on identified training gaps
  - Re-evaluate research trajectories
  - Solicit widespread support
  
- ✧ **Build partnerships**
  - Ensure subject matter experts participate in study design
  - Identify formal and informal leadership
  - Build partnerships internally and externally



# Research Focus Areas



## Effectiveness of Simulation Training

- Training Gap Analysis of Active Duty Aeromedical Evacuation Crews
- Training Gap Analysis of En Route Care Staging System Nurses and Technicians

## Attributes of Simulation

- Standardized Debriefing Process and Impact on Student Performance
- Critical Care Air Transport (CCAT) Team Nurse Performance Prediction: Application of Cognitive Model to Mitigate Skill Decay Using Simulation

## Environmental Aspects of Simulation

- Effects of Moulage on Trauma Skills Retention
- Student Characteristics in Advanced CCAT Training Success

## Use of Simulation Training in AE/CCAT Operations

- Intravenous Admixture Game: Using Serious Gaming in CCAT Training
- Flight Medical Equipment Training: A Proof of Concept Study for a Serious Game Intervention on the Impact Ventilator with a Cognitive Model Application

**Evidence Base for AE/CCAT  
Simulation Practice**



# Challenges



- ✧ **No standards for AF simulation centers**
- ✧ **Lack of continuity in simulation use and training for operators**
- ✧ **Multidisciplinary teams with unique training needs**
- ✧ **Lack of continuity for staffing**
- ✧ **Stakeholder buy-in**
- ✧ **Various levels of experience for medical personnel**



# Lessons Learned



- ✧ **Establish stakeholder buy-in early in development process**
- ✧ **Determine current education/training practices**
- ✧ **Develop studies based on training gaps and enterprise requirements**
- ✧ **Build partnerships with end users throughout research process**



# Discussion



- ✧ **Research efforts are customer driven, efficient, effective, and fiscally responsible**
- ✧ **Evidence base for decisions regarding training and fund allocation**
- ✧ **Stakeholders are supportive of research at high levels in the Air Force**
- ✧ **Partnerships established within the Air Force, DoD wide, and in the civilian world**
- ✧ **Roadmap is fluid and changes with needs**



# Objectives



- ✧ **Describe the process of building a program of research for simulation**
- ✧ **Describe the research focus areas of the aeromedical evacuation and Critical Care Air Transport Team simulation program**
- ✧ **Discuss challenges in building a program of research for simulation**
- ✧ **Discuss strategies for overcoming challenges in building a program of research in simulation**



# Questions





# Contact Information



**Tiffany Losekamp – [tiffany.losekamp.ctr@us.af.mil](mailto:tiffany.losekamp.ctr@us.af.mil)**