

**COUNTERISK
TECHNOLOGIES, INC.**
"the human performance
improvement specialists"



Presents

C⁴:

Critical Care Crisis Communication

*A program for improving multi-directional team
communication and crisis decision making skills*

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Preconference Symposia
21 August 2005
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C4: Critical Care Crisis Communication

Personal background:

Commander, United States Navy

- Current assignment to the Naval Hospital at the Naval Air Station Jacksonville, Florida
- Trained in Aviation Safety, Anesthesiology, Dentistry and Bioengineering
- Original Navy career was as an Aerospace Physiologist and Aeromedical Safety Officer:
 - Human Factor Analysis of (US Navy) Aircraft Mishaps
 - Aircrew Coordination Instructor for Fighter Aircraft Aircrew / Helicopter Aircrews
- Founder CounteRisk Technologies, Inc. (January 2000)
 - Using aviation safety principles to train any team or group be it in aviation, medicine or business, in communication, decision making and mishap prevention.
- Currently member of Naval Hospital Jacksonville
 - Hospital Patient Safety Committee
 - Perinatal Advisory Committee
 - Perinatal Team Training Coordinator

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C4: Critical Care Crisis Communication

- Part I: The Operating Room as a Cockpit
 - ❖ Program Rationale and History
- Part II: C4: Critical Care Crisis Communication
 - ❖ Program Design
- Part III: Goals and Benefits
 - ❖ Summary/Q&A

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The Operating Room as a Cockpit

Human factor and aviations' lessons learned for improving crisis communication and decision making in high risk critical care situations.

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*Healthcare Systems Ergonomics and Patient Safety
Human Factor, a bridge between care and cure*

Ed. Tartaglia, Bagnara, Bellandi, Albolino

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The Operating Room as a Cockpit

➤ Purpose of Brief

- ✓ To investigate, as well as give a historical perspective, of how two dissimilar fields, aviation and medicine, can be linked through the issue of performance skills.
- ✓ How the performance skills of both fields are influenced by certain human factor behaviors, known as Human Factors (HF), which can either be modified or altered through team training programs, to reduce error commission, and lessen mishaps or other incidents, which would adversely affect the planned outcomes of either endeavor.
- ✓ Understanding of one specific program for improving communication and decision making, during high risk scenarios, will be discussed.

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I. Aviation's Safety History & Human Factor Threats

Aviation Mishap Events

- No defined recognition or training in 'human factors' pre-1980
- Mishaps reach epidemic levels worldwide
 - Eastern Airlines 401 (1972)
 - United Airlines 173 (1978)
 - Air Florida 90 (1982)

The Operating Room as a Cockpit

- ✈️ Aviations' Lessons Learned:
 - include programs to combat performance threats and establish a *Culture of Safety* :
 - CRM (Crew Resource Management)
 - Originally introduced by United Airlines in 1980, their human factor awareness training became known as Cockpit Resource Management.
 - To reflect a team concept, CRM is now defined as *CREW* Resource Management, and is now a requirement for all airline operations
 - (FAA Advisory Circular 120-51E, 22 January 2004)
 - ACT (Aircrew Coordination Training)
 - United States Marine Corps /Navy version started in 1990's training aircrew from multi-seat transport and helicopters, then expanded to include single seat fighter aircrews.
- Pre-Flight Briefings
- Post Flight Debriefs
- Mishap Investigations
 - Analysis
 - Reporting
 - Includes Near Misses!

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II. Medicine's Safety History & Human Factor Threats

♥ Medical Mishap Events

- Institute of Medicine Report

 - "To Err is Human"* (1999)

 - Potentially 44,000 – 98,000 deaths from medical errors

 - ✓ Duke University Hospital Heart-Lung Transplant
Blood Type Mis-match Error

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III. Altering Medical Teams Performance through Aviation Styled Human Factors Awareness Programs

A. Studies linking Aviation Safety and Medicine

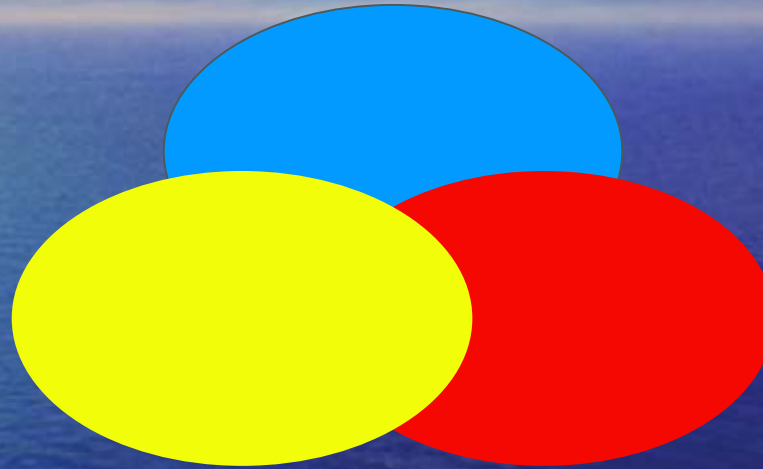
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Crisis Management in Anesthesiology, 1994
- Helmreich, RL
"On error management....." British Medical Journal, 2000
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"Error, stress and teamwork....." British Medical Journal, 2000
- Wilf-Miron, R, et. al.
"From aviation to medicine....." Quality & Safety in Health Care, 2003

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Crisis Response and Human Factors (Training)



=>TIME<=

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B. Programs in action



Medical Team Training Plan:

Devise a plan to comply with a specific national health care directive for the improvement of safe delivery of patient care related to the perinatal environment.



Naval Hospital Jacksonville Perinatal Advisory Committee

- Labor & Delivery
- Obstetrics-Gynecology
- Anesthesia
- Pediatrics
- Family Practice
- Family Practice Residency Program

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C. Joint Commission on Accreditation of Healthcare Organizations (JCAHO)

- JCAHO Sentinel Event Alert #30 issued in July 2004:
Preventing Infant Death and Injury During Delivery
47 cases of Perinatal Death or Permanent Disability*

**N.B.*- Number of cases reported at the time report was released.

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D. Root Cause Analysis (RCA) of 47 Reported Cases listed the following Causal Factors:

- **Communication (72%)**
- **Organizational Culture as a Barrier to Effective Communication & Teamwork (55%)**
- Staff Competency (47%)
- Orientation & Training Process (40%)
- Inadequate (Fetal) Monitoring (34%)
- Unavailable Monitoring Equipment and/or Drugs (30%)
- Credentialing/Privileging/Supervision Issues for Physicians & Nurse Midwives (30%)
- Staffing Issues (25%)
- Physician Unavailable or Delayed (19%)
- Unavailability of Pre-Natal Information (11%)

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E. Risk Reduction Strategies Reported (from RCAs):

- Revise Communication Protocols
- Reinforce Chain-of-Communication Policies
- Conduct Team Training
- Revise Conflict Resolution Policies

F. JCAHO Recommendations:

- Conduct Team Training in Perinatal Areas to Teach Staff to Work Together and Communicate More Effectively.
- For High Risk Events, Conduct Drills to Help Staff Prepare for When Such Events Occur, and Conduct Debriefings to Evaluate Team Performance and Identify Areas for Improvement.

G. Utilize a joint training program for all departments together:

- CounteRisk's program utilizes an aviation human factors based training model for improving team performance.

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H. Train Each Group as a Working Team

- Each team session consists of a group composed of each of the sub-specialty departments, as well as the strata of leadership and expertise within each of those departments!
- Therefore each training unit will have the range of Physician to Nurse to Medical Assistant/Technologist, as well as counterparts from the interdisciplinary members of this (perinatal) group.

C⁴: Critical Care Crisis Communication

I. Training Program

AM: Didactic Training Program Lecture intensive with forum discussion. Some topics include:

- *Leadership*
- *Hierarchical Team Arrangements*
- *Situational Awareness*
- *Communication Skills*
- *Human Factors*
- *The Decision Making Process*
- *Responsibility vs. Protocol*
- *The Moment of Truth*
- *Risk Reduction Strategies*
- *Cockpit Coordination and You*
- *Accident Chains*
- *Outcomes & Summary*

PM: Mock Scenario Drills in our L&D OR with videotaping and review.

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Program Goals and Benefits

IV. Program Goals = *Establish a Culture of Safety in Medicine*

– RECOMMENDATION:

All medical treatment teams, ESPECIALLY those involved in critical care scenarios, should receive team training to improve team communication skills and increase awareness of individual human error.

- Training is already mandatory throughout the civilian and military aviation communities, because the aviators: both pilots and aircrew, all have accepted these principles as worthy.
- Requirement for standardization of requirement for similar initial and annual refresher training for medical teams, will require an acceptance curve that aviation has already experienced.

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Program Goals and Benefits

V. RATIONALE

The aviation model for human factor awareness training, improved crisis communication and decision making skills, and mishap analysis and reporting, has raised the *Culture of Safety* in Aviation.

- Benefit #1:
 - Improvement of Communication between established medical teams to include multi-directional pathways of communication UNINCUMBERED by hierarchal constraints.
- Benefit #2:
 - As a result of Improved Communication there will be more Accurate Decision Making in time sensitive scenarios, leading to the achievement of predictable, successful, Planned Outcomes, reduced morbidity and mortality, and lower Mishap Rates.
- Benefit #3:
 - Final result of Improved Communication, Accurate Decision Making and Predictable Outcomes is => ***Improve Patient Care and Reduced Costs*** due to fewer litigations of malpractice claims!

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Suggested Readings

102 Minutes: The Untold Story of the Flight to Survive Inside the Twin Towers

Jim Dwyer, Kevin Flynn

New York: Times Books; 2005

Into Thin Air

Jon Krakauer

New York: Villard Books; 1997

The 9/11 Commission Report

National Commission on Terrorist Attacks Upon the United States.

New York: W. W. Norton & Co., 2004.

Why teams don't work: what went wrong and how to make it right

Harvey Robbins and Michael Finley

Princeton: Peterson's/Pacesetter Books, 1995

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