



2010 VHA Comprehensive Emergency Management Program Evaluation and Research Conference

SPONSORED BY THE VA OFFICE OF PUBLIC HEALTH & ENVIRONMENTAL HAZARDS

MAY 4-5, 2010

BALTIMORE, MD

2010 VHA Comprehensive Emergency Management Program Evaluation and Research Conference

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Speakers' PowerPoint Presentations (in order of presentation)

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2009 VHA CEMPER Evaluation and Research Priorities

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Sponsored by the VA Office of Public Health & Environmental Hazards

**VHA COMPREHENSIVE EMERGENCY MANAGEMENT PROGRAM
EVALUATION AND RESEARCH CONFERENCE**

May 4-5, 2010

**Sheraton Inner Harbor Hotel
300 South Charles St.
Baltimore, MD 21201**

DAY ONE: Tuesday, May 4, 2010

7:30-8:00 AM Registration and Continental Breakfast

8:00-8:30 AM Welcome and Opening Remarks

Shawn L. Fultz, MD, MPH, Acting Deputy Chief Public Health and Environmental Hazards Officer, Department of Veterans Affairs

Geraldine Coyle, RN, EdD, CNAA, Deputy Chief Consultant, Administration, Emergency Management Strategic Health Care Group, Department of Veterans Affairs

*Aram Dobalian, PhD, JD, Planning Committee Chair
Research Health Scientist, VA Greater Los Angeles HSR&D Center of Excellence*

**8:30-9:00 AM Understanding Readiness of the VHA Health Care System, Part 1 -
The 2005 Web-based Survey of VA Medical Centers and VISN Offices**

Beth Neiley, RN, MS, Project Manager, Booz Allen Hamilton

**9:00-9:30 AM Understanding Readiness of the VHA Health Care System, Part 2-
The 2009 VHA National Education and Training Needs Assessment**

Geraldine Coyle, RN, EdD, CNAA

9:30-9:45 AM Break

9:45-10:45 AM Concurrent sessions

**Session #1: Overview of VA and VA evaluation and research funding for non-VA
researchers and practitioners**

Aram Dobalian, PhD, JD

Session #2: Meet the Editors Panel

James J. James, MD, DrPH, MHA, Editor-in-Chief, *Disaster Medicine and Public Health Preparedness*, Director, Center for Disaster Preparedness and Emergency Response, American Medical Association

Jane A. Kushma, PhD, Managing Editor, *Journal of Homeland Security and Emergency Management*, Associate Professor, Institute for Emergency Preparedness, Jacksonville State University

Jackie Fox, Managing Editor, *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science*, Senior Science Writer and Director of Communications, Center for Biosecurity of the University of Pittsburgh Medical Center (UPMC)

**10:45-11:30 AM Understanding Readiness of the VHA Health Care System, Part 3 -
The 2007-2010 Emergency Management Capability Assessment
Program**

Hillary Kleiner, MPH, Associate, Booz Allen Hamilton

Beth Neiley, RN, MS, Sr. Associate and Project Manager, Booz Allen Hamilton

**11:30-1:00 PM VA Regional Emergency Managers and Area Emergency Managers
Perspectives: Lunch, Speaker, & Networking**

Darlene Weisman, MS, VA Regional Emergency Manager, Chicago/EMSHG Region V

Kenneth Wheeler, MS, VA Area Emergency Manager, Atlanta

Greg Watts, VA Regional Emergency Manager, Seattle/EMSHG Region X

**1:00-1:45 PM What VA Emergency Managers Can Learn from Transportation
Planning**

Janet K. Benini, Associate Director for Policy and Plans, Office of Intelligence Security and Emergency Response, Office of the Secretary of Transportation, U.S. Department of Transportation

1:45-2:00 PM Break

**2:00-3:00PM VHA Emergency Preparedness Literature Review, Discussion of VHA
Comprehensive Emergency Management Program Evaluation and
Research Agenda, Open Forum on Advancing the Research Agenda**

Maria Claver, PhD, MSW, Research Health Scientist, VA Greater Los Angeles HSR&D Center of Excellence

Darya Friedman, MPH, Project Manager, VA Greater Los Angeles HSR&D Center of Excellence

Aram Dobalian, PhD, JD

3:00-3:15 PM Break

3:15-4:30 PM Emergency Management Research across Federal Agencies

“National Health Security Strategy & Emergency Management Research”

Lisa G. Kaplowitz, MD, MSHA, Director, Office of Policy and Strategic Planning, Office of the Assistant Secretary for Preparedness and Response, U.S. Department of Health and Human Services

CAPT Mildred Williams-Johnson, PhD, DABT, U.S. Public Health Service, Director of Extramural Research Programs, Office for Public Health Preparedness and Response, Centers for Disease Control and Prevention

“Human Factors Behavioral Sciences Projects at the Department of Homeland Security”
Michael Dunaway, PhD, Human Factors/Behavioral Science Division, Department of Homeland Security Science & Technology Directorate

“Soldiers Helping Soldiers: A Study of Resiliency among Army National Guard Veterans”

Lt Col Lisa Sayegh, Ph.D., USAF, Command Mental Health Officer, NORAD-USNORTHCOM/SG Office of the Command Surgeon

“Department of Homeland Security’s Office University Programs and its Centers of Excellence”

Matthew Clark, PhD, Chief of Research for Department of Homeland Security’ Office University Programs

Shawn L. Fultz, MD, MPH, Acting Deputy Chief Public Health and Environmental Hazards Officer, Department of Veterans Affairs

**4:30-5:00 PM Research to Improve Emergency Preparedness and Response:
Guidance from Implementation Science**

Brian Mittman, PhD, Director, VA Center for Implementation Practice & Research Support (CIPRS)

5:00-6:30 PM Reception, Networking & Poster Session

DAY TWO: Wednesday, May 5, 2010

7:30-8:00 AM Continental Breakfast

8:00-9:30 AM Concurrent sessions

Paper Session I: Workforce & Communication

Session Facilitator: *Maria Claver, PhD, MSW*

1. Jennifer Griffith, "Understanding the Public Health Impact of Hurricane Ike: a Longitudinal Assessment with the Hurricane Ike Registry"
2. Joseph Barbera, "Establishing a Comprehensive Healthcare Emergency Management Competency Framework and Taxonomy"
3. Willie Carley, "Clinicians Infrequently Participate in Emergency Management Training Within the Healthcare Industry"
4. Bob Smith, "The Veterans Health Administration's Disaster Emergency Medical Personnel System (DEMPS): Competency Based Training Program Using Emerging Technologies" (presented by Laura Greci)

Paper Session II: Vulnerable Populations

Session Facilitator: *Josef I. Ruzek, PhD*, Director of the Dissemination and Training Division of the National Center for PTSD and Director of PTSD Education for the Sierra-Pacific MIRECC

1. Scott Barnett, "Florida Veterans and the 2004-2005 Hurricane Seasons: an Analysis of PTSD and Mental Health Utilization"
2. Lisa Brown, "Use of Outpatient Mental Health Services by Homeless Veterans after Hurricanes"
3. Edward Hickling, "Pilot Application of Psychological First Aid Specifically Designed for the VHA"
4. Carol North, "Do Disasters Cause Alcoholism? An Empirical Study of Survivors of 10 Disasters"

Paper Session III: Systems & Recovery

Session Facilitator: *Jeanne S. Ringel, PhD, MA*, Senior Economist, RAND Corporation

1. Laura Greci, "Virtual Immersive Platform for Education and Research: Pandemic Flu Patient Surge Planning and Practice"
2. Robert Glass, "Defining and Evaluating Threats and Designing Strategies for VA Healthcare"
3. Aram Dobalian, "Evacuation of Veterans from Nursing Homes Due to Katrina and Rita"
4. Mary Mather, "Patient Safety Through Effective Communication During Disaster Relief"

9:30-10:00 AM Break

10:00-11:00 AM ESF-6

Mark Tinsman, Program Specialist, Mass Care Unit, Emergency Assistance Branch,
FEMA, Disaster Assistance Directorate

CAPT Roberta Lavin, PhD, MA

Director of the Office of Human Services Emergency Preparedness and Response, DHHS
Administration for Children and Families (ACF)

**11:00-11:45 AM Public-Private Collaboration for Disaster Resilience: Opportunities
and Challenges**

Lynne R. Kidder, Sr. Vice President, Public-Private Partnerships, Business Executives for
National Security (BENS)

Scott A. Mugno, JD, Managing Director, Corporate Safety, Health and Fire Protection,
FedEx Express

11:45-1:00 PM Lunch, Speaker, & Networking

Speaker cancelled due to flooding in Nashville, TN

1:00-2:15 PM Haiti

James Geiling, MD, FACP, Chief of the Medical Service, White River Junction VA
Medical Center

COL Daniel J. Bochicchio, MD, Attending Physician, Baltimore VA Medical Center,
Assistant Professor of Anesthesiology, University of Maryland

Kenneth Wheeler, MS, VA Area Emergency Manager, Atlanta
Atlanta VAMC NDMS Federal Coordinating Center: Haiti Earthquake Relief Operation
2010

2:15-3:00 PM VA/Local Health Department Collaboration

Speakers cancelled due to flooding in Nashville, TN

3:00-3:15 PM Break

3:15-4:15 PM Plenary Speaker

Introduction of Plenary Speaker – *Geraldine Coyle, RN, EdD, CNAA*

Arthur L. Kellermann, MD, MPH, Director, RAND Public Health Systems and
Preparedness Center, Senior Principal Researcher, Paul O'Neill-Alcoa Chair in Policy
Analysis, RAND Corporation

4:15-4:30 PM Closing Remarks

Aram Dobalian, PhD, JD, Planning Committee Chair
Research Health Scientist, VA Greater Los Angeles HSR&D Center of Excellence

Victoria J. Davey, PhD, MPH, RN, Acting Chief Public Health and Environmental
Hazards Officer, Department of Veterans Affairs

4:30 PM Adjourn

General Directions to the Hotel

Sheraton Inner Harbor Hotel

300 South Charles Street
Baltimore, MD 21201
Phone: (410) 962-8300

Baltimore Washington International Airport or Interstate 95

Take Interstate 95 North to Interstate 395, which is 2.5 miles after crossing Interstate 695. Travel north 1 mile on I-395N and continue onto Howard Street proceed .2 miles and turn right onto Pratt Street proceed .2 miles then turn right onto Charles Street proceed .2 miles and the hotel is on the right.

From North

Take Interstate 95 South through the Fort McHenry Tunnel to Interstate 395 North. Follow I-395N for 1 mile, continue on to Howard Street and turn right on Pratt Street. Turn right on Charles Street and the hotel is on the right.

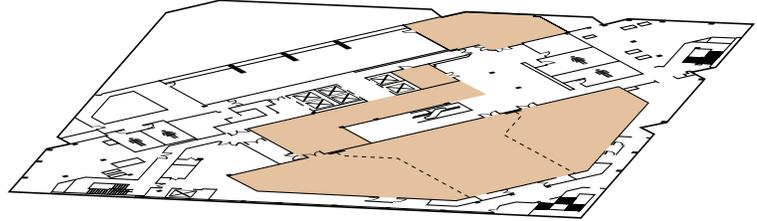
From West

Take Interstate 70 East to I-695 South (Exit #91, Outer Loop). Travel 4.5 miles to I-95 North (Exit #11). Travel 2.5 miles to I-395 North and continue on to Howard Street. Turn right onto Pratt Street, right onto Charles Street and the hotel is on the right.

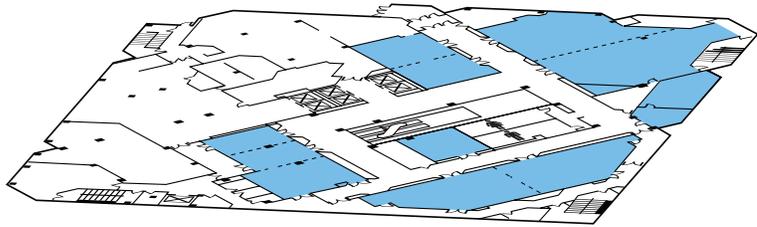
Sheraton Inner Harbor Hotel

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Third Level
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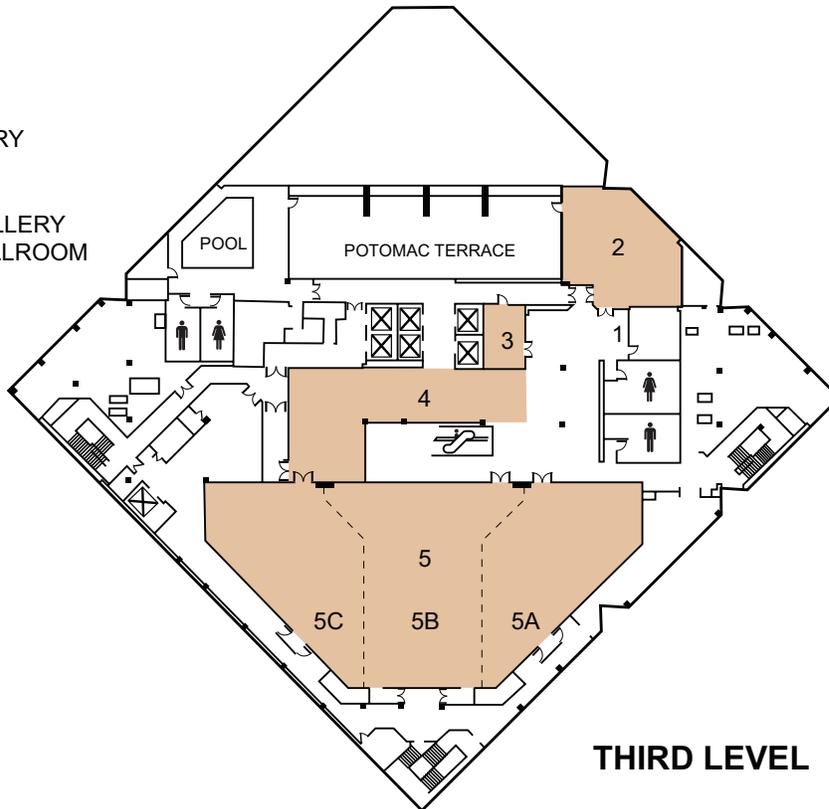
Second Level
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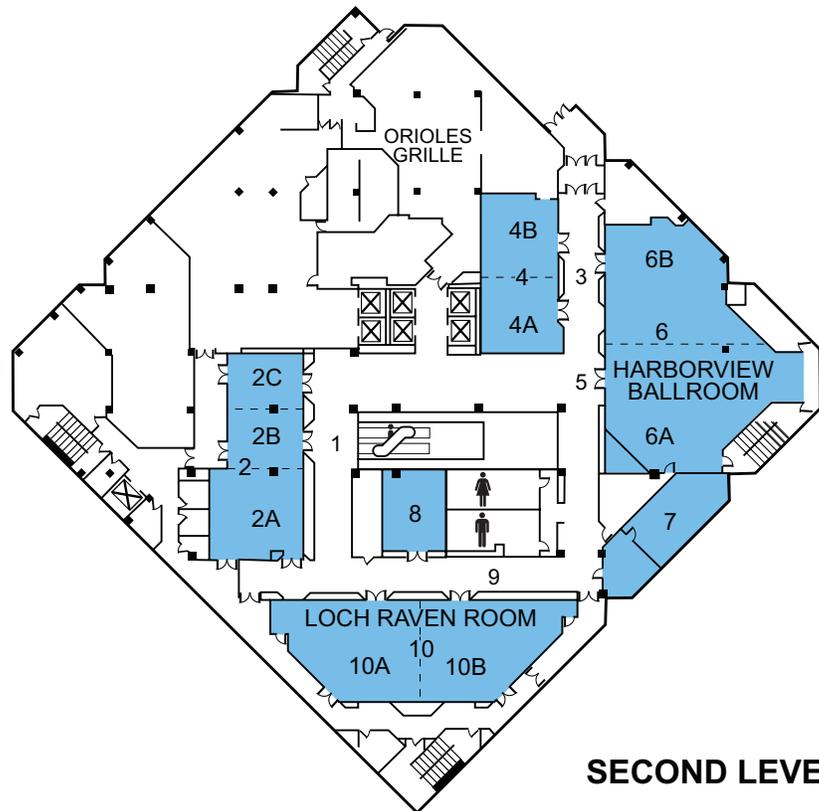
- 1. POTOMAC GALLERY
- 2. POTOMAC ROOM
- 3. PATAPSCO
- 4. CHESAPEAKE GALLERY
- 5. CHESAPEAKE BALLROOM
- 5A. CHESAPEAKE I
- 5B. CHESAPEAKE II
- 5C. CHESAPEAKE III



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- 1. SEVERN GALLERY
- 2. SEVERN ROOM
- 2A. SEVERN I
- 2B. SEVERN II
- 2C. SEVERN III
- 3. CAMDEN GALLERY
- 4. CAMDEN ROOM
- 4A. CAMDEN I
- 4B. CAMDEN II
- 5. HARBORVIEW GALLERY
- 6. HARBORVIEW BALLROOM
- 6A. HARBORVIEW I
- 6B. HARBORVIEW II
- 7. BOARD ROOM
- 8. SASSAFRAS
- 9. LOCH RAVEN GALLERY
- 10. LOCH RAVEN ROOM
- 10A. LOCH RAVEN I
- 10B. LOCH RAVEN II



2010 Veterans Health Administration Comprehensive Emergency Management Program
Evaluation and Research Conference:

Planning Committee

Aram Dobalian, PhD, JD (Chair)

Research Health Scientist, Department of
Veterans Affairs, Greater Los Angeles HSR&D
Center of Excellence for the Study of Healthcare
Provider Behavior
Associate Adjunct Professor, Department of
Health Sciences, UCLA School of Public Health

Peter Brewster

Director, Education/Training, Emergency
Management Strategic Health Care Group,
Department of Veterans Affairs

Kelley Brix, MD, MPH

Program Director for DoD-VA Transition,
Office of the Assistant Secretary of Defense for
Health Affairs Force Health Protection and
Readiness

**Mary Pat Couig, MPH, RN, FAAN, Rear
Admiral (ret.)**

Intermittent Program Manager, Special Projects,
Emergency Preparedness, Office of Nursing
Services, Department of Veterans Affairs

Geraldine Coyle, RN, EdD, CNAA

Deputy Chief Consultant, Administration,
Emergency Management Strategic Health Care
Group, Department of Veterans Affairs

Victoria J. Davey, PhD, MPH, RN

Acting Chief Public Health and Environmental
Hazards Officer, Department of Veterans Affairs

Curt E. Dill, M.D.

Clinical Service Chief for Emergency Medicine,
Department of Veterans Affairs
Assistant Professor of Emergency Medicine at
the New York University School of Medicine

Shawn L. Fultz, MD, MPH

Acting Deputy Chief Public Health and
Environmental Hazards Officer, Department of
Veterans Affairs

Lewis R. Goldfrank, MD

Chairman and Professor, Department of
Emergency Medicine, New York University
Medical Director, New York City Health
Department's Poison Center

Laura Greci, MD, MPH

Associate Director of the Emergency
Department, Department of Veterans Affairs,
San Diego Healthcare System

**Ann R. Knebel, RN, DNSc, FAAN, Rear
Admiral**

Deputy Director for Preparedness Planning,
Office of the Assistant Secretary for
Preparedness and Response, US Department of
Health and Human Services

Deborah Levy, PhD, MPH, CAPT, USPHS

Chief, Healthcare Preparedness Activity, Office of the
Director, Division of Healthcare Quality Promotion,
Centers for Disease Control and Prevention

F. Christy Music, MS, MT(ASCP)SBB

Office of the Assistant Secretary of Defense for
Homeland Defense & Americas' Security
Affairs, Department of Defense

Sally Phillips, RN, PhD

Director, Public Health Emergency Preparedness
Program, Agency for Healthcare Research and
Quality

Jeanne S. Ringel, PhD

Deputy Director, RAND Center for Public
Health Preparedness

Josef Ruzek, PhD

Director, Dissemination and Training Division of
the National Center for Post-Traumatic Stress
Disorder, Department of Veterans Affairs Palo
Alto Health Care System

Debra Saliba, MD, MPH

Anna & Harry Borun Chair in Geriatrics at the
David Geffen School of Medicine at UCLA
Research Physician, Department of Veterans
Affairs Greater Los Angeles Healthcare System
Sepulveda & West Los Angeles Division
Geriatric, Research, Education, Clinical Ctr.
Natural Scientist, RAND Corporation

Susan L. Santos, PhD, MS

Assistant Professor, Health Education and
Behavioral Sciences Division of the UMDNJ-
School of Public Health
Risk Communication Specialist for the War
Related Illness and Injury Study Center in East
Orange, New Jersey, Department of Veterans
Affairs New Jersey Health Care System

Kris Siddharthan, PhD

Senior Health Researcher, Patient Safety Center,
Tampa Department of Veterans Affairs Medical
Center

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Mildred Williams-Johnson, PhD, DABT
Director, the U.S. Public Health Service
Extramural Research Program, Science and
Public Health Practice Coordinating Office for
Terrorism Preparedness and Emergency
Response, Centers for Disease Control and
Prevention

**Project Staff at VA Greater Los Angeles
Healthcare System:**

Maria Claver, PhD, MSW
Research Health Scientist

Darya Friedman, MPH
Project Manager

Contact Information:

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Speakers' Biographies

Joseph A. Barbera, M.D

*Co-Director of the George Washington University Institute for Crisis, Disaster, and Risk Management
Associate Professor of Engineering Management, Clinical Associate Professor of Emergency Medicine,
George Washington University*

Joseph A. Barbera, M.D. is Co-Director of the George Washington University Institute for Crisis, Disaster, and Risk Management (ICDRM) – www.gwu.edu/~icdrm. He is an Associate Professor of Engineering Management and Clinical Associate Professor of Emergency Medicine at The George Washington University. Dr. Barbera created and teaches Masters and Doctoral level academic courses in emergency management at the George Washington University. He has completed multiple research projects focusing on health and medical systems in emergency response, including principle investigator of a Sloan Foundation supported project that defines a single system for managing bioterrorism or any other mass casualty incident: The Medical and Health Incident Management (MaHIM) System, available on the ICDRM web site. With Dr. Macintyre, he coauthored a handbook on hospital preparedness and response for mass casualties, including injuries and illness from chemical and biological terrorism: Jane's Hospital Mass Casualty Handbook: Hospital Emergency Preparedness and Response (Jane's Information Group at www.janes.com). He was co-principal investigator for a strategy guide on managing medical surge, a project sponsored by DHHS and performed under contract with The CNA Corporation. The product, Medical Surge Capacity and Capability: A Management System for Integrating Medical and Health Resources during Large-Scale Emergencies was updated and re-published by DHHS in 2007. A companion handbook focusing specifically upon healthcare coalitions during response has also been completed. Dr. Barbera was also the principle investigator for developing the extensive curriculum guide Emergency Management Principles and Practices for Healthcare Systems through the Veterans Health Administration, Department of Veterans Affairs. This initiative includes the development of an extensive competency set for healthcare system emergency response.

Dr. Barbera has enjoyed a two-decade career as an emergency responder and consultant on emergency management. He was the lead medical consultant for the Federal Emergency Management Agency (FEMA) in the development of the National Urban Search & Rescue (US&R) Response System, and performed the same role for the Office of U.S. Foreign Disaster Assistance (OFDA) in developing the International Search & Rescue program. His experience includes scene-response to hurricanes (2005 Hurricanes Katrina and Wilma and others), mine disasters, earthquakes (Baguio City Philippines 1990, Northridge California 1994, Tou-Liu Taiwan 1999, and Haiti 2010), mass terrorism (the Oklahoma City Bombing and the 9-11 Pentagon and World Trade Center attacks), biological terrorism (Anthrax 2001), tsunami (Banda Aceh, Indonesia), and school collapse (Haiti 2008). He has wide experience in hospital emergency management and response, and has participated extensively in the development and expansion of the emergency healthcare coalition in Washington DC.

Scott D. Barnett, PhD

*Epidemiologist/Biostatistician, James A. Haley VAMC, HSR&D/RR&D Center of Excellence
Department of Veterans Affairs*

Scott D. Barnett, Ph.D. is an Epidemiologist / Biostatistician at the James A Haley VAMC, HSR&D/RR&D Center of Excellence: Maximizing Rehabilitation Outcomes as well as Courtesy Faculty in the Department of Aging and Mental Health Disparities at the University of South Florida, Tampa, Florida. Dr. Barnett has been at the COE for 1 year after 10 years in Northern Virginia. With over 65 peer-reviewed publications, Dr. Barnett has over 15 years experience in statistical analysis, research

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design and database management. After completing his postdoctoral fellowship in geriatric medicine from the University of Miami, Dr. Barnett went on to work with the Army Medical Surveillance Group, located in Washington DC., and lead biostatistician with the Virginia Cardiac Surgery Quality Initiative (VCSQI), a Virginia statewide data repository combining cardiac surgical clinical outcomes data with financial data. Dr. Barnett has published extensively on evidence-based outcomes involving large datasets including cardiac surgery, geriatric medicine and pulmonary outcomes.

Janet K. Benini

*Associate Director for Policy and Plans, Office of Intelligence Security and Emergency Response
Office of the Secretary of Transportation, U.S. Department of Transportation*

Janet Benini leads the Department of Transportation's work in the Security Policy. Her Division coordinates the Department's activities with the White House National Security Council, and assures her department's implementation of laws and executive orders related to security and emergency preparedness. She recently led DOT's development of the National Transportation Disaster Recovery Strategy.

Ms. Benini is a career emergency manager, who joined DOT in 1998 as the Deputy Director of the Office of Emergency Transportation. From 2003 – 2005, she served a detail at the White House Homeland Security Council as the Director of Response and Plans. She was the lead for the team that developed the Homeland Security Scenarios, and the National Response Plan.

She received a Hammer Award for Reinventing Government from the Vice President for her work in preparing for Y2K, a Special Commendation medal from the Transportation Secretary for her work following the attacks of 9/11, and together with other colleagues, a Secretarial Gold Medal for the response to Hurricane Katrina.

Ms. Benini is a part-time college professor, in master's and PhD programs at Georgetown University Public Policy Institute and George Washington University.

She is married to Aldo Benini, an international crisis manager and researcher. She has two daughters and four grandchildren.

Arnold B. Bierenbaum

*Director, Safety and Technical Services
Department of Veterans Affairs*

COL Daniel J. Bochicchio, M.D., FCCP

*Attending Physician, Baltimore VA Medical Center, Department of Veterans Affairs
Assistant Professor of Anesthesiology, University of Maryland*

Daniel J. Bochicchio, M.D., FCCP, a decorated combat surgeon joined the staff of the Baltimore VA Medical Center in October 2009 after completing a five year tour on active duty. Previously, he served as Vice Chief Surgeon on the Joint Staff of the National Guard Bureau in Arlington, Virginia. The Office of the Surgeon addresses medical issues related to domestic disaster preparedness and the development and implementation of policies to ensure smooth integration of National Guard medical assets into civilian disaster response plans. Colonel Bochicchio's responsibilities included establishing and maturing strategic relationships with key Department of Defense, Federal and state partners to promote the unity of effort required by the National Response Framework. In 2005 Colonel Bochicchio was the Battalion

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Surgeon for Task Force 1-172 (Armored), 2nd Marine Division in Iraq, where he was responsible for the coordination and delivery of emergency and routine medical care to soldiers and Marines during combat operations in Al-Anbar Province, Iraq. From 2004 to 2005 he was responsible for planning and developing the National Guard domestic chemical, biological, radiological and nuclear (CBRN) medical response as Chief of Domestic Medical Operations for the National Guard Bureau. He developed and implemented the medical aspects of the National Guard CBRNE Enhanced Response Force Package teams and Weapon of Mass Destruction (WMD) Civil Support Teams. Colonel Bochicchio's previous assignments have included Chief of the Division Medical Operations Center, Division Support Command, 29th Infantry Division and Commander of Company C, 229th Support Battalion, 29th Infantry Division. Dr Bochicchio is a Graduate of the US Army War College, and the US Army Command and General Staff College. He has been a member Army National Guard for 23 years. Prior to attending medical school Dr Bochicchio worked as an Engineer in the commercial nuclear power industry. He has published several journal articles and book chapters in the area of disaster medicine. Dr Bochicchio is board certified in Anesthesiology and Critical Care Medicine and has been a faculty member of the University Of Maryland School Of Medicine since 1996.

Lisa M. Brown, PhD

*Associate Professor, Department of Aging and Mental Health Disparities
University of South Florida*

Lisa M. Brown, Ph.D. is an Associate Professor in the Department of Aging and Mental Health Disparities at the University of South Florida, Tampa, Florida. After completing her internship and postdoctoral fellowship at the James A. Haley Veterans Hospital, she joined the faculty at the University of South Florida. Dr. Brown's clinical and research focus is on aging, health, vulnerable populations, disasters, and long-term care. Since 2004, Dr. Brown has studied the acute and long-term psychosocial reactions and consequences of natural and human-caused disasters. Recent research efforts have focused on disaster mental health literacy, psychological first aid, access and use of disaster mental health services, and the effects of disasters on vulnerable populations including people from racially and ethnically diverse backgrounds, homeless people, and nursing home residents. Her research has been funded by the National Institute of Aging, the Centers for Disease Control, Department of Veterans Affairs Health Services Research and Development Service, and the Agency for Healthcare Administration. She was selected for the Disaster Mental Health Research Mentoring Program, National Institute of Mental Health. Dr. Brown has won several awards for her research including a Mental Health Services Research Investigator Award from the National Institute of Mental Health and a Blue Ribbon Award for Excellence in Scientific Presentation from the American Psychological Association, Division of Neuropsychology. She was the recipient of a University of South Florida Teaching Award sponsored by the University of South Florida Ambassadors and Alumni Association. In addition to her scholarly activities that include co-editing a textbook on the psychology of terrorism and writing book chapters and journal articles on disasters and older adults, she also served as a volunteer mental health clinician after the 2004 and 2005 hurricanes.

In June 2008, Dr. Brown was appointed by U.S. Department of Health and Human Services Secretary to the Disaster Mental Health Subcommittee of the National Biodefense Science Board Federal Advisory Committee, U.S. Department of Health and Human Services. Since 2006, she has been a member of the Long-Term Healthcare Work Group of the U.S. Department of Homeland Security. In 2007, Dr. Brown was appointed to serve as the Assistant Clinical Director of Disaster Behavioral Health Services by the Florida Crisis Consortium, Florida Department of Health. She helped write the state disaster behavioral health response plan and develop regional disaster behavioral health teams. Her recent work with the Florida Emergency Support Function-8 (Public Health and Medical Services) and the Florida Department

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of Health is focused on planning for pandemic flu and hurricanes. She currently serves as an advisor for the Florida Department of Health Special Need Shelter Interagency Committee and as a committee member of Florida Health Care Association's Disaster Preparedness Committee. For nearly eight years she served as an Institutional Review Board member at Stanford University (2000, 2001) and at the University of South Florida (2004 to present).

Willie K. Carley

*Network Emergency Management Program Coordinator, Veteran Integrate Service Network (VISN) 3
Department of Veterans Affairs*

Education:

Currently, Mr. Carley is attending Capella University for his doctoral degree in Public Safety Leadership with a concentration in Emergency Management and serves as the President for the Emergency Management Honor Society.

Professional Specialization:

-Emergency Management with a specialization in Health Care Emergency Management and Business Continuity Planning

Professional Membership:

-Federal Emergency Management Agency (Master Exercise Practitioner) & (Incident Command System Train-the-Trainer)
-Disaster Readiness Institute (DRII) (Associate Business Continuity Professional)
-Journal of Homeland Security and Emergency Management (JHSEM) (Article and Book Reviewer)

Volunteer Membership:

-James J. Peters Veterans Affairs Medical Center (Coach and Mentor)
-Veterans Health Administration Continuity of Operations Sub-Committee; Education Sub-Committee; and as a Comprehensive Emergency Management Program (Liaison)
- American Red Cross Volunteer (Government Liaison)
-Disabled American Veterans (Lifetime)

Family:

Mr. Carley is married for the past 18 years to TroyLynn and has three children Darrius (23), Willie (15), and Christian (10).

Patrick S. Card, MBA

*Emergency Management Coordinator,
EMRT & DEMPS Program Manager, VAMC Memphis, Department of Veterans Affairs*

Cliff Cheng, PhD

American Red Cross of Santa Monica

Ph.D., USC, Policy and Organization

Taught at – UCLA, USC, UCI.

Ascendant Scholar, Western Academy of Management.

Published in Academy of Management Review, Journal of Applied Behavioral Science, Academy of Management Executive

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Editorial Boards – Academy of Management Executive, Leadership and Organizational Development
Journal. Professional Leadership – Academy of Management - All-Academy Council.

Consultant – Emergency/COOP Plans, Training, Exercises, Organizational Effectiveness.

Clients – LA/Long Beach/LA County Operational Area, Cedars-Sinai Medical Center. Cigna. Daniel
Freeman Hospitals. Executive Life. Far East Bank. Health Net. International Thompson. Kaiser
Permanente.

PacifiCare. Pfizer. Prentice-Hall. State Farm. United States Coast Guard. UCLA Hospitals. UniHealth.
University of Southern California (USC). Upjohn. Value Health Sciences. West Publishing. World
Population Council.

Trainer – ICS, COOP, HSEEP, WMD/Bomb/Rad-Nuke Awareness.

FEMA Professional Development Series, Haz-FRO, Intermediate TLO.

ICS Jobs – RADO, COML, INTS, LO.

Executive Director, ICSWMD4LA - Regional Emergency Management & Homeland Security Training
Program.

Former Expert Witness – EEO, Privacy.

Former Advisory Boards - EEOC, Calif. Fair Employment & Housing Commission, Privacy Rights
Clearinghouse.

Former Los Angeles City Commissioner, Human Relations.

FCC Commercial & Amateur (Extra, AC6C) Radio Licenses Nat'l Alliance Radio/TV Engineers,
Certified Tech. 4.

Ass't Communication Unit Leader (Incident Communications Officer) Operation Golden Phoenix, 2008.

Communication Unit Leader (Incident Communications Officer) Trainee.

Trainer, American Radio Relay League EmComm Course.

Chair, Communication Track, SAR City (southwest regional SAR school).

Red Cross Communicator Since 1976.

Also Member – Amateur Radio Emergency Service, LA School Em, Radio Network, Former Member
RACES (DCS).

Several Top 5 National Rankings in Public Service.

Presidential Voluntary Service Award.

Matthew Clark, Ph.D.

*Director, Office of University Programs, Science and Technology Directorate, Department of Homeland
Security*

Dr. Matthew Clark is Director of the Office of University Programs (OUP) in the Department of
Homeland Security's Science and Technology Directorate (S&T). With a \$50 million annual budget, Dr.
Clark has developed one of the Federal government's most effective and responsive research and
education programs, which includes the DHS Centers of Excellence, the DHS Career Development
program, and the Minority Serving Institutions' Scientific Leadership program. The COE program has
produced measurable benefits in lives saved and property losses avoided that exceed its costs. The Office
of University Programs is developing the long-term fundamental research, technologies and permanent
scientific and engineering workforce needed to protect the U.S. from the effects of terrorism and natural
disasters. Dr. Clark was formerly Chief of Research for OUP. Prior to that, he created an economics and
decision sciences research program at the U.S. Environmental Protection Agency's (EPA) Office of
Research and Development, and was an economist for EPA's Office of Water. Dr. Clark also worked for
state and local government agencies and as a consulting economist on environmental and energy issues
for public and private sector clients at all levels.

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Maria L. Claver, PhD, MSW

*Research Health Scientist, Department of Veterans Affairs, Greater Los Angeles Healthcare System
HSR&D Center of Excellence for the Study of Healthcare Provider Behavior
Assistant Professor, Gerontology Program, California State University, Long Beach*

Education: B.A. (1997) Psychology, UCLA. M.S.W. (2001) and Ph.D. (2006) in the Department of Social Welfare, College of Public Affairs, from UCLA.

Research Interests: I was trained to be a researcher with a focus on qualitative methodology and content in social support networks, disaster response, and communication within long-term care facilities. My educational background also includes emphasis on developmental disabilities and the special needs of aging veterans. My previous research has included an examination of decisions to use the emergency room by older veterans and current research addresses the adoption of health information exchange partnerships, evacuations of nursing homes following a disaster and the role of service learning in changing student knowledge and attitudes about aging.

Social Work Practice: I have worked with clients ranging in age from middle school to geriatric, dealing with a variety of mental illnesses at facilities such as the UCLA Neuropsychiatric Institute, the Veterans Affairs Medical Center and a private school for teens with severe emotional disturbances. I have extensive background in health promotion, program planning, implementation and evaluation. I have served as a bereavement support group leader and co-created a Comprehensive Care Clinic for older veterans coping with chronic physical and mental illnesses.

Teaching: I have been an Assistant Professor in Gerontology at California State University, Long Beach since 2007, responsible for teaching an introductory undergraduate Gerontology course and a variety of Master's level courses ranging from Social Policy to Aging and Dementia. Additionally, I am the faculty advisor for the CSULB Gerontology Honor Society and chair the Gerontology Certificate Program.

Geraldine Coyle, EN, EdD, CNAA

*Deputy Chief Consultant, Administration, Emergency Management Strategic Health Care Group,
Veterans Health Administration*

Dr. Coyle's clinical and administrative experience of almost 30 years has been as a nurse practitioner or administrator in a variety of inpatient and outpatient settings. Most recently she was Associate Medical Center Director, Nursing Programs and Medical Center Education at the Martinsburg VA for almost seven years. Since December 2005 she has been Deputy Chief Consultant of Administration/Logistics/Finance at EMSHG. She has held a variety of clinical and administrative certifications. Over the years, she has held clinical faculty appointments on the graduate and under graduate levels. Professional interests and publications have been in the area of patient safety, employee safety, and emergency preparedness.

Adam Darkins, MD, MPH

Chief Consultant, Care Coordination Services, Department of Veterans Affairs (VA)

Adam Darkins, MD, MPH, Chief Consultant, Care Coordination Services, Department of Veterans Affairs, leads the National Care Coordination/Telehealth Program within the Department of Veterans Affairs (VA). Care Coordination/Telehealth within VA involves the use of health Informatics, telehealth and disease management technologies to enhance and extend care and case management. Under his leadership, VA has developed the clinical, technology and business underpinnings to successfully

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implement and sustain enterprise-wide, telehealth-based services that improve access to care for patients, reduce utilization of health care resources and are associated with very high levels of patient satisfaction.

VA is seen as a national/international leader in telehealth with over 200,000 patients receiving care annually. The mission of these programs is to provide the right care, in the right place, at the right time to the appropriate patient. The associated aim is providing care for patients in the most convenient setting whenever safe, appropriate, effective and cost-effective. The VA experience shows telehealth can bring about transformative change in the management of high incidence chronic diseases in the population, ones that pose an ever-increasing challenge for all health care systems.

Adam Darkins has worked in health services development using new information technologies in the US and UK since 1991 and has a prior clinical background in neurosurgery.

Victoria Davey, PhD, MPH, RN

*Acting Chief, Public Health and Environmental Hazards Office
Department of Veterans Affairs*

Ms. Davey is the Deputy Chief of the Office of Public Health and Environmental Hazards of the Department of Veterans Affairs (VA) where she plans, coordinates and communicates public health policies and programs for the VA health care system. The Office focuses on public health aspects of infectious diseases of special concern to the veteran population, including HIV, hepatitis C, seasonal influenza, healthcare acquired infections and emerging infections; environmental exposures of veterans; women veterans' health; occupational health; and emergency planning and management. Most recently, Ms. Davey has done extensive work in seasonal and pandemic influenza planning and programs for VA. Prior to joining VA in November 1999, she was an intensive care unit nurse and a HIV clinical research coordinator at the National Institutes of Health (NIH), and from 1991 to 1999 served as Associate Clinical Director of the National Institute of Allergy and Infectious Diseases (NIAID), NIH, where she was a manager of NIAID's intramural clinical research operations, including facilities, staff, clinical quality, and clinical protocol review.

Ms. Davey received an AB in Biology from Smith College, a BS in Nursing from Boston University, an MPH from the Uniformed Services University of the Health Sciences, was a Senior Executive Fellow at the John F. Kennedy School of Government, Harvard University, and is currently a PhD candidate at Uniformed Services University of the Health Sciences completing a dissertation in epidemic modeling.

Aram Dobalian, PhD, MPH, JD

*Research Health Scientist, Department of Veterans Affairs, Greater Los Angeles Healthcare System
HSR&D Center of Excellence for the Study of Healthcare Provider Behavior
Associate Adjunct Professor, Department of Health Sciences, University of California, Los Angeles
(UCLA) School of Public Health*

Dr. Dobalian received his PhD in Health Services from the UCLA School of Public Health with an academic cognate in Social Psychology, and his JD from Whittier Law School where he was Editor-in-Chief of the Whittier Law Review. He received his MPH in Health Services from UCLA, and his BS in Physics from Vanderbilt University. From 2001-2004, Dr. Dobalian was an Assistant Professor in the Department of Health Services Research, Management and Policy at the University of Florida, where he taught health law, health ethics, and health policy. He currently teaches in the UCLA Executive Master of Public Health (EMPH) program. From 2006-2007, he was the Associate Director of the UCLA Executive Education Programs in Healthcare Management & Policy and the EMPH Program.

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In mid-2004, Dr. Dobalian began a VA HSR&D-funded career award which initially focused on improving advance care planning and palliative care among veterans in nursing homes. In early 2006, he shifted the career award to disaster research with an emphasis on disasters and long-term care. Also in 2006, Dr. Dobalian was awarded a VA HSR&D-funded pilot grant to examine emergency preparedness in VA nursing homes following Hurricanes Katrina and Rita. This study analyzed the effects of evacuation, sheltering, and hosting on veterans who were residents in nursing homes.

His research focuses on public health emergency preparedness including the public health impact of bioterrorism, hurricanes, earthquakes, and other natural and human-caused disasters. His current and past research spans nursing, long-term care, nursing home malpractice, advance care planning, and the role of pain in the use of health services. He was the PI of an AHRQ-funded U01 grant to examine the provision of care after the acute phase of a mass trauma event. This study focused on psychological disorders as well as other chronic health conditions, and the role of disasters in exacerbating pre-existing disparities in Florida's healthcare system. He was also co-PI on a related grant awarded by HRSA.

In addition to chairing the planning committee for the development of a national VA emergency preparedness program evaluation and research agenda, Dr. Dobalian is the PI of the National Program Evaluation of the VA Nursing Academy: Enhancing Academic Partnerships Program. He is the author of about 30 peer-reviewed articles, reports, and book chapters.

W. Michael Dunaway, DSc, MA

Human Factors/Behavioral Science Division, Science and Technology Directorate, Department of Homeland Security

Michael Dunaway joined the Science & Technology Directorate of the Department of Homeland Security in 2007, where he serves as Program Manager for the Community Resilience and Preparedness program in the Human Factors/Behavioral Science Division. The program directs research to further understanding of resilience in American society and enhance preparedness, response and recovery of communities impacted by natural and man-made disasters and terrorist incidents. Principal customers of the program are first responders, state and local government authorities and civic leaders, private sector entities, and agencies of the federal government.

Prior to joining DHS, he was senior engineer and program manager for an engineering firm in Arlington, Virginia, and was assigned to the Cognitive, Neural and Social Science Division of the Office of Naval Research.

In 2002, Mr. Dunaway served on a Philadelphia-based task force to develop strategies for managing complex medical emergencies and mass-casualty terrorist events. While on that project, he wrote one of the first guidebooks for scenario-based emergency planning (Strategies for Incident Preparedness) published in 2002 by Drexel University. In 2003, he was founding chairman of the Chesapeake Critical Incident Partnership, a public-private sector partnership in Annapolis, Maryland to coordinate planning and resource management between emergency management, local government, and the private sector.

From 1973-2000 he served as a surface line officer in the U.S. Navy, retiring as a Captain after 27 years of service. He is a graduate of the United States Naval Academy and holds a M.A. (International Relations) from the Fletcher School of Law and Diplomacy at Tufts University, and a DSc. (Systems Engineering) from the George Washington University School of Engineering and Applied Sciences.

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Jackie Fox

*Senior Science Writer and Director of Communications, Center for Biosecurity of the University of Pittsburgh Medical Center (OPMC)
Managing Editor, Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science*

Ms. Fox is the Senior Science Writer and Director of Communications at the Center for Biosecurity of UPMC. She serves as the Managing Editor of the journal *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science*.

Prior to joining the Center in March 2004, she was the Executive Editor and Director of U.S. Journals for Oxford University Press (1996 to 2003). At Oxford, she managed the publication of all U.S.-based journals, with primary responsibility for journals published in the scientific and medical fields, including the *American Journal of Epidemiology*, *Public Health Reports*, *Journal of Urban Health*, and *Toxicological Sciences*.

With more than 35 years of experience in the publishing field, Ms. Fox has served as the Director of Publications for the American Public Health Association and the Director of Publications for the American Occupational Therapy Association, as well as working in publications at the American Counseling Association and the American Society of Association Executives. She has a BA in Communications from the College of Notre Dame and is a member of the Council of Science Editors.

Darya Friedman, MPH

Project Manager, VA Greater Los Angeles HSR&D Center of Excellence, Department of Veterans Affairs

Shawn L. Fultz, MD, MPH

*Acting Deputy Chief, Public Health and Environmental Hazards Office
Department of Veterans Affairs*

Shawn L Fultz, MD MPH joined the Department of Veterans Affairs, Veterans Health Administration, Office of Public Health and Environmental Hazards (OPHEH) in December 2006 as Senior Medical Advisor. Dr. Fultz provides clinical input to the Emergency Management Strategic Health Care Group, as well as advises the Chief Public Health and Environmental Hazards Officer on areas of public health and emergency management. Prior to joining the OPHEH, he was Assistant Professor of Medicine at Yale University School of Medicine and Staff Physician at the VA Connecticut Healthcare System. His research career, funded by a VA Health Services Research and Development Career Development Award, focused on HIV infection and comorbid illnesses including liver injury, hepatitis C, and anemia. He has coauthored over 16 publications in peer-reviewed journals and over 40 abstracts submitted to scientific meetings.

Dr. Fultz completed his undergraduate degree at Pennsylvania State University and his medical degree at the University of Pittsburgh School of Medicine. His residency in Internal Medicine and a General Medicine Fellowship both were completed at the University of Pittsburgh Medical Center. Dr. Fultz also obtained a Master of Public Health degree in Community and Behavioral Health Sciences from the University of Pittsburgh Graduate School of Public Health.

James Geiling, MD, FACP

Chief of Medical Service, White River Junction VA Medical Center, Department of Veterans Affairs

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Dr. Jim Geiling currently serves as Chief of the Medical Service and Director of the Intensive Care Unit at the Veterans Affairs Medical Center in White River Junction, VT, a component of Dartmouth-Hitchcock Medical Center. Following his undergraduate education at Bucknell University, he attended the Uniformed Services University in Bethesda, Maryland where he received his MD degree in 1982. He then embarked upon a 25-year career in the Medical Corps of the US Army, which included serving 9 years in Germany and deploying to the Ukraine, Bosnia-Herzegovina, and elsewhere. During his career he completed his medical training in Internal Medicine in San Francisco and later Critical Care Medicine at Walter Reed Army Medical Center. He also studied disaster preparedness and medical response during a one-year fellowship with the DHHS' Office of Emergency Preparedness. In 2000 he assumed command of the 200-person medical clinic in the Pentagon, a position where he ironically was called upon to practice his training in preparedness on September 11, 2001 and later that year during the anthrax attack. Dr. Geiling retired from the Army in 2003 to come to his current position. In addition to his clinical, teaching, and administrative duties with the VA, he serves as Co-Director of DHMC's New England Center for Emergency Preparedness. In 2010 with Dartmouth and in support of Partners in Health, he led a disaster-response team to Port Au Prince, Haiti following its earthquake. He has written and spoken extensively in the field of disaster medicine, with recent work focusing on mass critical care. Finally, he served in leadership positions for disaster-related activities for both the Society of Critical Care Medicine and American College of Chest Physicians.

Robert J. Glass, PhD, MS

Leader of the Complex Adaptive Systems of Systems Engineering Initiative, Sandia National Laboratories

Dr. Robert J Glass leads the Complex Adaptive Systems of Systems (CASoS) Engineering Initiative at Sandia National Laboratories, Albuquerque, NM. Dr. Glass has degrees from Haverford College (BS, Ecology) and Cornell University (MS and PhD, Agricultural and Biological Engineering). He worked for many years in the general field of Subsurface Science where his discoveries of phenomena and creation of new modeling approaches influenced problems ranging from water and contaminant transport in fractured rock (e.g., Yucca Mountain, Nevada) to the remediation of aquifers contaminated with Dense Non-Aqueous Phase Liquids (DNAPL such as TEC and PCE). Joining the National Infrastructure Simulation and Analysis Center (NISAC, joint between Sandia and Los Alamos National Laboratories) in 2004, Dr. Glass has grown a research team that focuses on the analysis and control of CASoS as embodied by many critical infrastructures and socio-economic-technical systems. Example applications range from: assessment of cascading failure in multi network infrastructure such as power grids, economic supply networks, and telecommunications (with colleagues at NISAC); design of robust and resilient large scale national emergency response policies for the Veterans Health Administration (with the Department of Veterans Affairs' Chief Officer of Public Health and Environmental Hazards); assessment of competitive strategies (with the Department of Defense's Joint Improvised Explosive Device Defeat Organization); analysis of global financial system stability given ongoing changes in fiscal and monetary policies (with colleagues at NISAC); assessment of the global energy system for national security applications (with direction from Sandia's Laboratory Directed Research and Development program, LDRD); and mitigation policy design and evaluation for bovine tuberculosis (with the New Mexico Livestock Board).

Laura Greci, MD, MPH

*Associate Director, Emergency Department
VA San Diego Healthcare System*

Dr. Laura Greci currently works at the VA San Diego Healthcare System (VASDHS) where she is the Associate Director of the Emergency Department (ED). She is also an Assistant Professor at the University of California, San Diego (UCSD) and a fourth year medical school course

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director. Dr. Greci is board certified in Internal Medicine and Preventive Medicine and has a Masters in Public Health from Yale. She does research through Health Science Research & Development (HSR&D) studying data visualizations of crowding metrics in the ED and virtual reality emergency preparedness training utilizing multi user virtual environments. Dr. Greci currently spends her time as an attending physician in the ED, teaching medical students and residents, and doing HSR&D research.

Jennifer M. Griffith, DrPH, MPH

Associate Research Scientist, Office of Special Programs and USA Center for Rural Public Health Preparedness; Adjunct Assistant Professor, Department of Health Policy and Management, Texas A&M Health Science Center School of Rural Public Health

Dr. Jennifer Griffith is an Associate Research Scientist in the Office of Special Programs and USA Center for Rural Public Health Preparedness and an adjunct assistant professor in the Department of Health Policy and Management at the Texas A&M Health Science Center School of Rural Public Health. She teaches Rural Public Health Systems in the Department of Health Policy Management, a core course for all masters students in the school. In addition, she teaches Program Evaluation in the Department of Social and Behavioral Health.

Dr. Griffith's work focuses primarily in the area of evaluation for public health practice and research. Within the Office of Special Programs and USA Center she develops and manages all data collection, analysis and evaluation activities for center projects including the Hurricane Ike Registry (HIkeR) and the Hurricane Ike Longitudinal Assessment (HILA).

Prior to her position with the USA Center for Rural Public Health Preparedness, Dr. Griffith served as the Director for the Decision Support Lab at the Sheps Center for Health Services Research at the University of North Carolina- Chapel Hill. Dr. Griffith has a BA in Biology from Texas A&M University, an MPH in Social and Behavioral Health from the School of Rural Public Health at the Texas A&M Health Science Center, and a DrPH in Health Education and Behavior from the University of North Carolina- Chapel Hill.

Edward J. Hickling, PsyD

Research Psychologist, James A. Haley VA, Department of Veterans Affairs

Edward J. Hickling, PsyD is a research psychologist at the James A. Haley VA in Tampa Florida. He holds faculty appointments at the University of South Florida, Department of Aging and Mental Health Disparities, and in the College of Nursing, and is also an adjunct professor at the State University of New York, University at Albany, and clinical faculty at the Albany Medical College. After completing his internship in clinical psychology at the Albany Psychology Internship Consortium, he was on staff as a consultation liaison psychologist and Director of Training at the Samuel Stratton VAMC in Albany NY. He left after five years to begin a full time practice, as well as begin working out of the Center for Stress and Anxiety Disorders at SUNY Albany where he was a Co-PI and Senior Research Scientist until 2005. His research has largely focused on the assessment and treatment of psychological effects of trauma. His recent interests have included innovative treatment efforts such as online interventions, positive changes following trauma and Psychological First Aid. He has published nearly 100 articles, abstracts and chapters in books, as well as co-authored 6 books dealing with motor accident related trauma and treatment. He joined the James A. Haley VA in 2009, where current research interests have included psychological first aid, impact of disaster on vulnerable populations (including those with PTSD), gender and PTSD.

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James James, MD, DrPH, MHA

*Director, Center for Disaster Preparedness and Emergency Response
American Medical Association*

James J. James, MD, DrPH, MHA, is Director of the American Medical Association (AMA) Center for Public Health Preparedness and Disaster Response, and Editor-in-Chief, Disaster Medicine and Public Health Preparedness, a peer reviewed, MEDLINE indexed publication of the American Medical Association. In less than five years, this Center has received over \$3 million in grant funding, has overseen the development and deployment of the National Disaster Life Support suite of courses and has expanded to 10 personnel. Dr. James brings over 30 years of experience in the public and private health care sectors—as a clinician, researcher, professional personnel manager and program director—to this challenging and critical undertaking. He is board certified in general preventive medicine, earned a doctorate in medicine at the Cincinnati College of Medicine, a doctorate in public health from UCLA's School of Public Health, and a masters in health care administration from Baylor University. Dr. James served 26 years with the U.S. Army Medical Department, serving in a multitude of capacities. From 1999 through December 2002, Dr. James served as Director of the Miami-Dade County Health Department. There he was responsible for the oversight and supervision of public health programs throughout the county. He was charged with the management of a \$60 million budget and the supervision of approximately 1000 employees. Over the past year, Dr. James has been appointed to numerous boards, commissions and committees addressing national policy and operational issues around preparedness and response. He serves as a constant and active participant on several Institute of Medicine forums and roundtables. He is the chair of the National Disaster Life Support Foundation Board of Directors and the co-chair of the National Disaster Life Support Education Consortium executive committee. In December 2007 he was appointed to the very prestigious National Biodefense Science Board (NBSB) and in 2008 the Defense Health Board (DHB).

Lisa G. Kaplowitz, MD, MSHA

Director, Office of Policy and Strategic Planning, Office of the Assistant Secretary for Preparedness and Response, U.S. Department of Health and Human Services

Dr. Kaplowitz is the Director of the Office of Policy and Planning in the Office of the Assistant Secretary for Preparedness and Response in the U.S. Department of Health and Human Services. She was the Deputy Commissioner for Emergency Preparedness and Response (EP&R) at the Virginia Department of Health (VDH), a position she held since August, 2002. In this position, she was responsible for the development and implementation of Virginia's public health response to all natural and manmade emergencies. She also coordinated the health department's planning and response with the response of hospitals, the health care system and all state emergency response agencies and organizations in Virginia, as well as coordinating Virginia's response with that of adjacent states and the District of Columbia. Dr. Kaplowitz is Principal Investigator for both the CDC and HRSA grants to VDH that provide federal funding for public health and healthcare emergency preparedness and response in Virginia.

Prior to joining VDH, Dr. Kaplowitz was a faculty member in the Department of Medicine at Virginia Commonwealth University for 20 years and Director of the VCU HIV/AIDS Center. In her role as Director of the VCU HIV/AIDS Center, she developed HIV clinical and training programs, and was involved extensively in HIV legislative and policy issues at both state and federal levels. She also was Medical Director of Telemedicine and Ambulatory Care for the VCU Health System. She obtained her MD degree from the University Of Chicago Pritzker School Of Medicine, and completed her residency in Internal Medicine and Fellowship in Infectious Diseases at the University of North Carolina in Chapel Hill. She was a health policy fellow with the Institute of Medicine in Washington D.C. in 1996-1997.

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During her fellowship, she worked in Senator Jay Rockefeller's Office on a number of health policy issues including Medicare, the State Children's Health Insurance Program, other health financing issues, and end of life care issues. She completed a Masters of Science in Health Administration (MSHA) at Virginia Commonwealth University in 2002. In addition to public health and emergency preparedness, she has a strong interest in health policy, health care financing and improving access to health care.

Expertise/Interests: Emergency Preparedness and Bioterrorism, HIV/AIDS, Medicare and Medicaid, Telemedicine

Arthur L. Kellermann, MD, MPH

Director, RAND Public Health Systems and Preparedness Center

Senior Principal Researcher, Paul O'Neil-Alcoa Chair in Policy Analysis, RAND Corporation

Dr. Arthur Kellermann recently joined the RAND Corporation as the Paul O'Neil-Alcoa Professor in Policy Analysis. He is based in RAND's Washington D.C. office, where he directs RAND's Public Health Systems and Preparedness Initiative, which has played a leading role in helping state and federal agencies improve the nation's preparedness for public health emergencies.

Before joining RAND, Dr. Kellermann was Professor of Emergency Medicine and Associate Dean for Health Policy at the Emory School of Medicine in Atlanta. From 1999-2007, he served as founding Chair of Emory's Department of Emergency Medicine. He also established the Emory Center for Injury Control, a World Health Association Collaborating Center for Injury Control and Emergency Health Services.

One of our nation's leading emergency physicians, Dr. Kellermann has published landmark research on emergency cardiac care, violence and injury prevention, emergency health services, and treatment of traumatic brain injuries. He holds numerous honors and awards, including career "excellence in science" awards in two fields – emergency medicine and public health.

Elected to membership in the Institute of Medicine of the National Academies in 1999, Dr. Kellermann co-Chaired the IOM Committee on the Consequences of Uninsurance, which issued 6 reports on this topic between 2001 and 2004. He also served on the Institute's Committee on the Future of Emergency Care in the U.S Health System and the IOM Committee on Effectiveness of National Biosurveillance Systems: BioWatch and the Public Health System.

An alumnus of the Robert Wood Johnson Foundation Clinical Scholars Program, Dr. Kellermann earned his M.P.H. degree from the University of Washington in 1985, his M.D. degree from Emory University in 1980, and his B.S. degree, with distinction, from Rhodes College in 1976. He is board certified in the specialties of Emergency Medicine and Internal Medicine.

Lynne R. Kidder

Sr. Vice President, Public-Private Partnerships Business Executives for National Security

Hillary Kleiner, MPH

Associate, Booz Allen Hamilton

Ms. Kleiner is an Associate with Booz Allen Hamilton where she supports the Veterans Health Administration (VHA) in providing studies and analysis support services (i.e., planning, execution, evaluation and analysis) in the emergency preparedness of all VA Medical Centers. Ms. Kleiner uses her

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epidemiological subject matter expertise as the lead of the Comprehensive Emergency Management Program (CEMP) project's data analysis and logistics work streams. She also supports the development, implementation, management, and maintenance of various tools that VHA Assessment Teams utilize to assess VA Medical Centers, Veterans Integrated Service Networks, and VA Central Office throughout the United States. She is an Epidemiologist by training with a combined 10 years of epidemiological, public health, biomedical and clinical trials experience. Ms. Kleiner is knowledgeable of advanced concepts, scientific methods, data analysis, study design and theories of epidemiologic principles which are applicable to areas of biological threats (including emerging threats) as well as infectious and chronic diseases. She is practiced in the delivery of written and oral literature reviews, scientific research, statistical and epidemiological analysis, and policy recommendations related to emergency preparedness.

Jane A. Kushma, PhD

*Associate Professor of Emergency Management, Jacksonville State University
Managing Editor, Journal of Homeland Security and Emergency Management*

Jane Kushma is an Associate Professor of Emergency Management at Jacksonville State University in Alabama. Dr. Kushma has been teaching emergency management at the university level for more than fifteen years, and has provided leadership for curriculum development efforts at both the graduate and undergraduate levels at several institutions. She currently serves as the Managing Editor of the Journal of Homeland Security and Emergency Management.

Dr. Kushma has a Ph.D. in Urban Policy and Public Administration from the University of Texas at Arlington and a Masters in Social Work from the University of Pittsburgh. Her research interests include public policy and emergency management, vulnerable populations, and long-term community recovery from disaster.

Before joining academia, she spent many years with the American Red Cross where she coordinated national headquarters' initiatives for catastrophic disaster planning and served on many large-scale disaster relief operations. She has served as a consultant to FEMA, National VOAD, and the Alabama Emergency Management Agency.

CAPT Roberta Lavin

Director of the Office of Human Services Emergency Preparedness and Response, DHHS Administration for Children and Families (ACF)

CAPT Roberta Lavin is the Director of the Office of Human Services Emergency Preparedness and Response. Prior to joining ACF she served as the Chief of Staff to the Assistant Secretary for Public Health Emergency Preparedness at the Department of Health and Human Services, was the Director of the Secretary's Operations Center from October 2001 to March 2003 and has served 19 years as a U.S. Public Health Service Officer. CAPT Lavin received her PhD from the Uniformed Services University for the Health Sciences and Master of Science in Nursing from the University of Tennessee. She also has a Master of Arts in Disaster and Emergency Management.

Mary E. Mather, MSN, RN, CNL

South Texas Veterans HealthCare System, Department of Veterans Affairs

Ms. Mather is a Master's prepared Clinical Nurse Leader. Her professional experience includes working at the South Texas Veterans HealthCare System for the past six years, five years in long term physical rehabilitation and the last year in the Geriatric Evaluation and Management Clinic. Previous experience includes long term care and dialysis for seven years. For the last five years I have been involved with the

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Hospital Emergency Response Team and Disaster Emergency Medical Personnel training and planning for disaster preparedness. Other related experience involves formally teaching VA staff communication strategies in the novice nurse program, the Rapid Response Team educational rollout, and CREW project to improve civility, respect, and engagement in the workplace. She was invited as a guest speaker to present these communication strategies to the nursing students at the University of the Incarnate Word. She has been recognized by the National Nursing Honor Society for contributions as a nursing leader, and serves as secretary to the local chapter of the National Gerontological Nurses Association.

Brian Mittman, PhD

*Director, VA Center for Implementation Practice and Research Support (CIPRS)
Veterans Health Administration*

Brian Mittman, PhD is Director of the VA Center for Implementation Practice and Research Support, a resource center within VA's Quality Enhancement Research Initiative. He is also Senior Social Scientist at the VA/UCLA/RAND Center for the Study of Healthcare Provider Behavior, both at the VA Greater Los Angeles Healthcare System. He served as a Visiting Professor in the Department of Health Services, UCLA School of Public Health from 2003-2006 and taught at the UCLA Anderson Graduate School of Management (Visiting Lecturer to Visiting Associate Professor) from 1986 to 1993. From 2002-2004 he served as interim associate director of VA's Health Services Research and Development Service, directing the VA Quality Enhancement Research Initiative (QUERI). He was a founding member of the Institute of Medicine Forum on the Science of Quality Improvement and Implementation (2006-2008) and is a consultant and member of the Editorial Board for the AHRQ Health Care Innovations Exchange, a new initiative to classify innovative strategies to increase implementation of evidence-based clinical practices and enhance the efficiency and effectiveness of healthcare delivery. He convened and chaired the planning committee that launched the new journal *Implementation Science* (www.ImplementationScience.com) and serves as co-editor in chief of the journal. He served on the NIH review committee (Special Emphasis Panel) on Dissemination and Implementation Research in Health in 2006 and chaired the Panel in March and October 2007. His research interests include implementation science, healthcare quality improvement and healthcare management. His published research appears in the *Journal of the American Medical Association*, *Annals of Internal Medicine*, *Medical Care*, *Health Services Research*, and other journals, and he is a frequent speaker to US and international audiences on implementation research.

Scott A. Mugno, JD

*Managing Director, Corporate Safety, Health and Fire Protection
FedEx Corporation*

Beth Neiley, RN, MS

Project Manager, Booz Allen Hamilton

Ms. Neiley, a senior associate at Booz Allen Hamilton, is a registered nurse with over 20 years of health care experience spanning consulting, clinical patient care and management. Ms. Neiley has been with Booz Allen Hamilton since 2003 and is currently the project manager of HHS' Healthcare Preparedness Program's Technical Assistance Contract as well as the project manager for the VHA Emergency Management Program Studies, Support and Analysis project. Her consulting experience includes healthcare preparedness planning and response, hospital preparedness assessments and surveys, healthcare capability modeling and simulation, and program review. Her nursing background and expertise is in surgical intensive care and she held the position of Clinical Manager in a surgical ICU and a Cardiothoracic Recovery Room at a large teaching facility in Washington D.C.

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Carol S. North, MD, MPE

*Nancy and Ray L. Hunt Chair in Crisis Psychiatry, Director of the Program in Trauma and Disaster
VA North Texas Health Care System
Professor, Division of Homeland Security at UT Southwestern Medical Center in Dallas, Texas*

Carol S. North, MD, MPE, is the Nancy and Ray L. Hunt Chair in Crisis Psychiatry and Director of the Program in Trauma and Disaster at the VA North Texas Health Care System and also a Professor in the departments of Psychiatry and Surgery/Emergency Medicine in the Division of Homeland Security at UT Southwestern Medical Center in Dallas, Texas. Dr. North completed medical school and residency training in psychiatry at Washington University School of Medicine in St. Louis, Missouri, followed by a NIMH fellowship and a Masters degree, both in psychiatric epidemiology, at the same institution.

For more than two decades, Dr. North has continuously conducted federally funded research investigation into mental health effects of disasters, psychiatric aspects of medical illness, psychiatric issues in homeless populations, and has developed specialized training programs for professionals, patients, and families. Dr. North has been an international leader in shaping the science of disaster mental health epidemiology. She and her research team have studied nearly 3,000 survivors of major disasters, including the bombings in Oklahoma City and the US Embassy in Nairobi, Capitol Hill anthrax attacks, the September 11th terrorist attacks on New York City, and Hurricane Katrina. Dr. North has trained thousands of mental health and other health professionals on disaster preparedness and has provided expertise and leadership for major disaster response operations.

Ronald L. Olney, PhD

*Health Science Specialists in the HSR&D/RR&D Center of Excellence,
James A. Haley Veterans Hospital, Tampa Florida*

Ronald L. Olney, Ph.D. is a Health Science Specialists in the HSR&D/RR&D Center of Excellence: Maximizing Rehabilitation Outcomes co-located with the James A Haley Veterans Hospital in Tampa, Florida.

While completing his doctorate in Education at the University of South Florida, Dr. Olney was funded as an investigator on a large Department of Defense (DOD) grant focusing on cultural change and international engagement. Dr. Olney's research focused on barriers and facilitators to cultural change within large bureaucracies with special emphasis on cultural identity, imposed change and building resilient organizations. Since 1982, Dr. Olney has studied, taught and practiced in the fields of emergency management, training management and operational leadership within diverse populations and cultures. His research and local/international practice have been funded by DoD, the Federal Emergency Management Agency (FEMA) and State funding.

In addition to his scholarly activities that include co-authoring manuals on Terrorism Counteraction, Use of Force and Special Reaction Team (SWAT) Operations, he also served as both a mentor and an evaluator for federal, state and local emergency response exercises and taught post baccalaureate courses in leadership and training management.

In September 2008, Dr. Olney joined the HSR&D/RR&D Center of Excellence and has worked as an investigator and project manager for research grants focused on medical cost/benefit ratios and rehabilitation of patients with traumatic brain injury, spinal cord injury, pressure ulcers, lower extremity amputations and post-traumatic stress disorder. In addition, he is a center expert for emergency

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management operations and adult curriculum and instruction. For two years he has served as adjunct faculty at the University of South Florida (2008 to present).

Joan Rave

*ESF #6 Section Chief, Individual Assistance Division, Recovery Directorate Operations,
Federal Emergency Management Agency, U.S. Department of Homeland Security*

Joan Rave began her career with FEMA in 1990, as a local-hire Reports Officer on a Washington State flood response. In the 20 years since then she has led or managed nearly 50 disaster response and recovery operations throughout the United States, serving in a variety of disaster field positions including Federal Coordinating Officer and Deputy Federal Coordinating Officer, Chief of Staff, Tribal Liaison Officer, Operations Section Chief, and Human Services Branch Chief.

In January 2007, Ms. Rave was selected to lead the newly-created Emergency Support Function #6 (ESF #6) Section in the Individual Assistance Division at FEMA Headquarters. As the FEMA ESF #6 Section Chief, she is responsible for FEMA Direct Housing Operations, Voluntary Agency Coordination, and Mass Care programs and staff. As the National lead for ESF 6, she is responsible for coordinating federal and voluntary agency response planning, including the development of the ESF 6 Annex to the National Response Framework. During federal disaster activations, she is responsible for ensuring that national plans are implemented and the ESF 6 missions are delivered.

Ms. Rave holds a BS degree from Western Washington University (1980) and a BA degree from University of Puget Sound (1990). She presently resides in Arlington, Virginia; she is married to public policy scholar Kurt Lang, currently enrolled in George Mason University post-graduate studies.

Jeanne S. Ringel, PhD, MA

Senior Economist, RAND Corporation

Dr. Ringel is a Senior Economist and the Deputy Director of the Public Health Preparedness program at RAND. In addition, she is a faculty member of the Pardee RAND Graduate School and an adjunct lecturer in the School of Policy Planning and Development at the University of Southern California. Prior to coming to RAND, Dr. Ringel was an assistant professor in the economics department at Louisiana State University. She has conducted research on a variety of topics including public health preparedness and health care financing and organization. In the area of public health preparedness, Dr. Ringel's work has focused on pandemic influenza preparedness. She has participated in a series of projects under a contract with the Department of Health and Human Services that involved a review the national pandemic influenza preparedness plan, the development of benchmarks and milestones for gauging progress toward pandemic preparedness, and the development of a pandemic influenza decision making guide. Currently, Dr. Ringel is leading an evaluation of the federal response to the 2009 H1N1 influenza pandemic. In addition, she has worked on several vaccine policy projects. She provided technical assistance to the National Vaccine Program Office in the updating the National Vaccine Plan and led an evaluation of the National Vaccine Advisory Committee. In the area of health care financing and organization, Dr. Ringel has conducted analyses of the recent health reform legislation estimating the effects on insurance coverage and costs. In addition, she co-led a series of projects funded by the Veterans' Administration (VA) that modeled differences in treatment costs between the VA's regional networks in an effort to improve the VA's budget allocation methods.

Josef I. Ruzek, PhD

Director of the Dissemination and Training Division, National Center for PTSD

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Josef I. Ruzek, Ph.D., is Director of the Dissemination and Training Division of the National Center for PTSD. He specializes in early intervention for trauma survivors and has been active in development and evaluation of early preventive interventions for disaster and terrorism survivors, returning Iraq War personnel, and patients seen in hospital trauma centers. He is an author of the Psychological First Aid manual created jointly by the National Center for PTSD and the National Child Traumatic Stress Network for the SAMHSA's Center for Mental Health Services, and more recently of the Skills for Psychological Recovery crisis counseling manual. He is co-chair of the Early Intervention special interest group of the International Society for Traumatic Stress Studies, where he currently sits on the Board of Directors. He also serves on the Disaster Mental Health subcommittee of the National Biodefense Science Board.

Kasia Smith-Alexander

*Acting Manager, Public Health Emergency Preparedness Program
Memphis and Shelby County Health Department*

Bob Smith, EdD, EdS, MCP, MA, BS, CPO (RET) U.S. Navy

*DEMPS National Program Manager
Emergency Management Strategic Healthcare Group (EMSHG), Department of Veterans Affairs*

Provide overall management of the DEMPS Program including the development and implementation of processes and procedures to ensure program effectiveness. This includes the development of educational materials, conferences, and training sessions to facilitate and otherwise promote the program. A key component of the management process is the integrity of the DEMPS database.

University of West Florida	EdD	December 1999
University of West Florida	EdS	December 1995
Troy State University	MS	December 2001
Webster University	MA	December 1991
Baptist College at Charleston	BS	May 1986

In 2001 Dr. Smith began working for the VA as a National Project Manager for the Employee Education System of VHA. His duties included the overall management of the Veterans Health Initiative Program as well as the education advisor to the Secretary's American Former POW Committee. Prior to arriving at the VA Dr. Smith worked as an Instructional System Specialist for the U.S. Navy. Dr. Smith also taught high school and before teaching high school he spent 21 years on active duty in the U.S. Navy as a Cryptologic Technician. Dr. Smith currently teaches in the PhD program for Capella University and is an Adjunct Assistant Professor for Embry Riddle Aeronautical University.

Dr. Smith has received numerous awards associated with active duty. While on active duty he qualified as a Naval Aircrewman in the P-3 Orion and was an Aviation Warfare Specialist.

He has received his 30 year award for federal service and an award of appreciation from the Viet Now organization for his dedication to serving Veterans.

Dr. Smith is married to the most understanding person in the world, Carol. They have two children Brandon, 21; and Cereina 19, who is currently serving on active duty in the U.S. Army.

Mike Vojtasko, MA

*Chief Consultant, Emergency Management Strategic Health Care Group,
Department of Veterans Affairs*

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Greg Watts

VA Regional Manager, Seattle/EMSHG Region X

Darlene Weisman, MS

*Regional Emergency Manager,
Emergency Management Strategic Health Care Group (EMSHG)*

Kenneth Robert Wheeler, Jr.

Area Emergency Manager, EMSHG Region IV Office, Atlanta, GA

Experience:

Mr. Wheeler is the VISN 7 Area Emergency Manager in Atlanta, GA. He came to EMSHG in 2004, previously serving as the Area Emergency Manager in Philadelphia, PA and Birmingham, AL. During an extensive military career as a Flight Nurse and unit administrator, he placed heavy emphasis on operational readiness and emergency preparedness. He served as the primary point of contact for patient reception at the 911th Airlift Wing, Pittsburgh, ARS, PA. As the military planner for NDMS exercises, he coordinated and produced highly comprehensive exercise plans. Following graduation from nursing school in 1975, Mr. Wheeler was employed as a staff nurse in the Medical Intensive Care Unit at VAMC White River Junction, VT. A member of the Air Force Reserve, he was commissioned a Second Lieutenant and became a Flight Nurse in 1978. In 1981, he accepted a position as Assistant Director of Nursing at Porter Memorial Hospital, Valparaiso, IN. In 1983, he reported to the 911th Aeromedical Evacuation Squadron at Pittsburgh IAP ARS to re-enter civil service as a full-time Air Reserve Technician (ART). Exemplifying a steadily upward career progression, he served the 911th AES as Administrator, Flight Instructor, Flight Examiner, Training Officer, Medical Readiness Officer, Executive Officer, Chief Nurse, and Commander. He has accumulated over 2,800 aeromedical evacuation mission flight hours in nine different aircraft types, including combat hours. Mr. Wheeler deployed to areas of operations during Operations Desert Storm, Southern Watch, Joint Guard, and Iraqi Freedom. Mr. Wheeler retired from the Air Force Reserve in July 2006 after reaching the rank of Colonel.

Education:

- Wesley-Passavant School of Nursing, Chicago, IL, Diploma in Nursing, 1975
- Geneva College, Beaver Falls, PA, Bachelor of Science of Human Resources Management, 2003
- Air University, Maxwell AFB, AL, Air War College Non-Resident Program, 2003
- Geneva College, Beaver Falls, PA, Master of Science of Organizational Leadership, 2004

Awards and Recognitions:

Mr. Wheeler received annual Performance Awards during his careers with the Department of Defense and the VHA, including several Sustained Superior Performance Awards. In addition, he is a recipient of the Southwest Asia Service Medal, the Global War on Terrorism Service Medal, the Armed Forces Expeditionary Medal, the Air Force Outstanding Unit Award with Valor Device, and the Department of Veterans Affairs Hero award for deployments in support of hurricane response and recovery.

Personal Information:

Mr. Wheeler was born in Newport, Vermont in 1946. He received an honorable discharge from the U.S. Air Force for service from 1967 to 1971. Mr. Wheeler has accumulated 33 years of Federal service through combined military and civil service careers. Mr. Wheeler is a life member of both the Reserve Officer's Association of the United States and the Veteran's of Foreign Wars of the United States. He is

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married to the beautiful Christine Lynne Stewart of Birmingham, Alabama. She has two sons, Frederick and Derek. Mr. Wheeler has a daughter, Kari and a son, David from a previous marriage.

CAPT Mildred Williams-Johnson, PhD, DABT

Director for Extramural Research Programs in the Office of Public Health Preparedness and Response (OPHPR), Centers for Disease Control and Prevention (CDC)

CAPT Mildred Williams-Johnson, PhD is the Director for Extramural Research Programs in the Office of Public Health Preparedness and Response (OPHPR), Centers for Disease Control and Prevention (CDC).

CAPT Williams-Johnson earned her B.S. in Chemistry, her Ph.D. in Pharmacology, and she is a Diplomat of the American Board of Toxicology. She began her public health career as a toxicologist with the Division of Toxicology (now the Division of Toxicology and Environmental Medicine) in the Agency for Toxic Substances and Disease Registry (ATSDR). Her early responsibilities included developing and managing ATSDR's internationally recognized Toxicological Profiles for Hazardous Substances found at hazardous waste sites. She played a key role in the development and implementation of ATSDR's Substance-Specific Applied Research Program (SSARP), determining the research agenda for several high priority toxic chemicals, such as trichloroethylene, and leading the development of ATSDR's largest applied research program and, at that time, its primary mechanism for filling research needs for toxic substances found at waste sites. CAPT Williams-Johnson's list of publications includes one of the first Concise International Chemical Assessment Documents for the World Health Organization.

CAPT Williams-Johnson co-authored the policy for establishing separate organizational units for developing, peer reviewing, and administering CDC's extramural research programs and implemented the new program structure at the CDC National Center for Environmental Health (NCEH) and ATSDR. At CDC OPHPR, she led the development of its Extramural Research Program (ERPO) and the establishment of the Preparedness and Emergency Response Research Centers (PERRCs). As the ERPO Director for OPHPR she leads the team responsible for developing and overseeing a national research program to address public health preparedness priorities at the federal, state, local, territorial and tribal level.

April D. Wood, BSN, RN, CEN, EMT

*Manager, Disaster Health Services
American Red Cross*

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Paper Session I: Workforce & Communication

Establishing a Comprehensive Healthcare Emergency Management Competency Framework and Taxonomy

Joseph Barbera, MD

Institute for Crisis, Disaster and Risk Management, George Washington University

Co-Authors: Anthony G. Macintyre, MD; Gregory L. Shaw DSc; Lissa T. Westerman, RN, BSN

Background and Objectives: Competencies were first developed by business management researchers to better align individual job requirements with the central objectives of the organization. In 2004-2005, VHA/EMSHG tasked George Washington University researchers with developing emergency response and recovery competencies for use by VHA in its emergency management program. A competency framework and taxonomy was developed, based upon research on the historical use of competencies, to promote the development of objective, measurable competencies for direct use by VHA emergency planners. The resultant competencies were finalized in 2006. Deployment competencies were developed later, based upon the same framework. The objectives of this current research are:

1. Determine whether the competencies were applied within the VHA EMSHG program.
2. Catalogue the uses and impact of the competencies on the VHA emergency management program and its products.

Study Design and Methods: Informal interviews of EMSHG personnel were conducted and relevant documents were analyzed, focusing upon any specific use of the competencies and the programmatic changes associated with that use. Direct, specific evidence of utilizing the competency material was required for inclusion as "competency use." Actual implementation of VHA program elements was required for inclusion as evidence of "competency impact."

Findings/Results (Lessons Learned): The competency framework and competencies were used in the following areas:

1. As a basis for developing the capabilities categories and a number of assessment items in the Emergency Management Strategic Health Care Group VHA Capabilities Assessment Program. Impact: The three-year assessment of all VHA facilities using this instrument (through Booze Allen Hamilton) is underway with very positive feedback.
2. As the basis for developing the current basic certification program training and testing for VHA Emergency Program Managers. Impact: The basic certification program has been administered as a pilot program. Certification programs for other major healthcare job groups are in development.
3. In the VHA Disaster Emergency Medical Personnel System (DEMPS) program, the competencies were used for a DEMPS gap analysis, for DEMPS program changes, and for training development. Impact: The gap analysis was completed in 2009 and the program changes and training development are underway.

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4. The competencies are referenced and promoted in multiple areas throughout the Department of Veterans Affairs Emergency Management Guidebook, particularly in those areas that provide education and training guidance. Impact: the 2009 Guidebook has been in use and revision to that Guidebook are underway.

Conclusions and Implications for Policy, Practice, and Research: In developing individual competencies, careful attention to a well constructed competency framework and taxonomy promotes development of objective and measurable competencies with wide application in healthcare emergency management. The competency framework should be based upon historical management research that demonstrated the use of individual job competencies to achieve the objectives of the organization.

Relevance to Veterans or VA: Further study on the use of competencies to improve emergency management programmatic elements, such as the use of competencies in exercise design and evaluation, in corrective action planning, and in other program areas may provide additional benefit. The development of competencies at the functional unit level (e.g., DECON team) and individual position competencies, using the current framework, may promote consistency within each individual VHA facility and across the VHA network.

Understanding the Public Health Impact of Hurricane Ike: a Longitudinal Assessment with the Hurricane Ike Registry

Jennifer M. Griffith, DrPH, MPH

Texas A&M Health Science Center School of Rural Public Health

Co-Authors: S. Kay Carpender, BS; Jill J. Artzberger, MPH; Barbara J. Quiram, PhD

Background and Objectives: In 2008 the USA Center for Rural Public Health Preparedness at the Texas A&M Health Science Center School of Rural Public Health created HIkeR, a registry of individuals affected by Hurricane Ike, to conduct activities and research studies to aid policy makers and the response community with understanding the public health impact of evacuation, sheltering, and recovery processes. The first longitudinal assessment was conducted in the spring of 2009 followed by discussion groups in the impacted areas. Topics covered by this first round included: preparedness and communication, evacuation vs. non-evacuation, and recovery.

Study Design and Methods: The registry was used to contact individuals either via email or by letter about the assessment as well as the discussion groups. Screening for eligibility could be completed via phone or online for the assessment and via phone for the discussion groups. Two versions of the assessment were used, one for those who evacuated before during or after Hurricane Ike and one for those who did not evacuate, to capture the evacuation experiences and to determine the ability to obtain resources and materials immediately after the storm respectively. Descriptive analyses were conducted to obtain frequencies. Eligible discussion group participants were asked to indicate which dates and times, from a selected list, they would be available for a discussion group and then scheduled to participate.

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During discussion groups, participants were asked a series of questions related to their experiences with Hurricane Ike including evacuation and non-evacuation experiences, recovery, and returning home after the storm. Transcripts of the discussion groups were coded and analyzed to identify key themes for each topic.

Findings/Results (Lessons Learned): Results indicate that there are areas of the evacuation, sheltering and recovery processes that have improved while others would benefit from additional education to the public and public health workforce. Various sources of communication are used at different stages of a disaster and understanding where individuals seek information before, during and after a disaster could alleviate many issues related to preparedness and communication. Many participants reported self-evacuation and reported relatively few issues encountered with previous evacuation and sheltering experiences. In addition, those who did not evacuate provided insight into their decisions and preparation strategies. Measurement of recovery was found to be very subjective and contextual. Various resources and groups were identified as key components of the recovery process including relief agencies and friends and family, while other resources may not have been as effective.

Conclusions and Implications for Policy, Practice, and Research: These results highlight the need to continue to educate and communicate the roles and responsibilities of individuals and agencies during all hazards events to continue to improve evacuation, sheltering and recovery processes. In addition, these findings also indicate that some issues encountered with previous hurricanes may have been fully or in part addressed.

Relevance to Veterans or VA: The findings from this work are relevant to veterans and the VA (and VA entities) as they are part of the overall community and may be an integral part of a local response and recovery following hurricanes and other all hazard events.

The Veterans Health Administration's Disaster Emergency Medical Personnel System (DEMPS): Competency Based Training Program Using Emerging Technologies

Bob Smith, EdD
EMSHG VHA

Background and Objectives: Virtual Worlds are increasingly seen as tools for improving human performance. Virtual Worlds offer a rich, realistic environment similar to the “real world” with the advantage of providing training anytime, anywhere in many settings, to many users. With multiple providers of virtual worlds, each offering different capabilities, selecting the right platform can be a challenging task but one that is crucial for success. This paper shares the approach used by the Veterans Administration (VA)'s Disaster Emergency Medical Personnel System (DEMPS) to select a virtual world platform to address human performance requirements.

Study Design and Methods: Selection of the Virtual World was driven by an analysis of human performance requirements. While some performance requirements were documented, many were not. Multiple approaches to gaining insights into the requirements were used including a review

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of current training, a gap analysis, media analysis, documented competencies, and visioning. Recognizing the need for user acceptance, the team addressed stakeholder engagement from the start and will share results and insights on that aspect of human performance as well as analysis used to determine key capabilities.

Findings/Results (Lessons Learned): The end result is selection of a virtual world to improve DEMPS volunteer performance.

Conclusions and Implications for Policy, Practice, and Research: DEMPS volunteers are deployed to care for veterans during an emergency or disaster and provide interagency support under the National Response Framework. The DEMPS Volunteer is a full-time VA employee at one of the 153 VA Medical Centers located across the U.S., Puerto Rico, Guam, and the Philippines. With over 9000 geographically dispersed volunteers, providing education and training is a monumental task. Missions vary depending on the type and location of the disaster. Existing training primarily focused on awareness and administrative functions (such as timekeeping, travel), the use of a Virtual World will expose the volunteers to the tasks they perform in an actual disaster.

Relevance to Veterans or VA: Development of Virtual Reality training solutions will enable the DEMPS Program to train DEMPS Volunteers who are scattered around the U.S.

Clinicians Infrequently Participate in Emergency Management Training Within the Healthcare Industry

Willie K. Carley, MS, MEP, ABCP
Department of Veterans Affairs

Background and Objectives: Historically clinicians infrequently participate in the emergency management training provided at the Veteran Affairs Medical Centers (VAMC) for various reasons, primarily due to their focus on the immediate needs of their patients versus the probability of a disaster occurring within their community or medical centers. The objectives of this study are to determine how to increase the amount of clinician participation training within emergency management at the VAMCs, by identifying both the gaps and barriers in the participation of clinicians in emergency management training and by providing a preliminary recommendation for the increase in physician participation in emergency management training at each VAMCs.

Study Design and Methods: The research design for the study shall consist of a mixed method methodology. The intent of the survey is to collect data on the amount of clinician participation within emergency management and the barriers that prohibit the training from a sample population experiment. To conduct a more detailed analysis of the Booz Allen Hamilton Survey of VA Medical Centers' Emergency Preparedness. To continue to perform a Literature Review of Peer Reviewed articles related to clinicians participation in emergency management training.

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Findings/Results (Lessons Learned): According to BAH (2005) VA should devote the necessary resources to provide a greater accountability in training for clinicians (p.54). Hsu et al. (2004) states “Disaster drills appeared to be an effective way to improve clinicians’ knowledge of hospital disaster procedures” (p.35). Clinicians themselves have emphasized their lack of skills and knowledge in this area; there should be a rapid development and dissemination of problem-based learning CME courses in bioterrorism preparedness (Hartwig, Burich, Cannon et al, 2009, p.47). Healthcare industries with the assistance of the education services should provide targeted emergency management training for clinicians.

Conclusions and Implications for Policy, Practice, and Research: Clinicians are deficient in emergency management training within and outside the Department of Veteran Affairs. Clinicians have a need for targeted training in Chemical, Biological, Radiological, Nuclear, and Explosive events outside of the basic courses currently provided. Recommendations for further research should focus on the barriers in training for clinicians. Research should target areas within the healthcare industries to maximize clinician training in emergency management and its benefits to healthcare. Further analysis should be performed of the 2009 Booz Allen Hamilton Needs Assessment.

Relevance to Veterans or VA: Increase the emergency management capabilities of the clinicians within the Healthcare Industry.

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Paper Session II: Vulnerable Populations

Florida Veterans and the 2004-2005 Hurricane Seasons: an Analysis of PTSD and Mental Health Utilization

Scott D. Barnett, PhD

HSR&D/RR&D Center of Excellence: Maximizing Rehabilitation Outcomes

Co-Authors: Edward J Hickling, PsyD; Lisa M Brown, PhD; Ron Olney, PhD; Robert R Campbell, PhD; Gustave FP Sison, PhD

Background and Objectives: In FY09, VISN 8 (Florida [Peninsula], southern Georgia and Puerto Rico) comprised 11% of the age 75+ unique users of the VHA system – at least 50% greater than the next largest VISN. The majority depend on the VHA for medical and pharmaceutical needs. The 2004 -2005 time period produced one of the most active hurricane seasons in Florida history with 47 named storms; 9 reaching category 3 or greater status. While the cost of disasters can be readily calculated for structural damages, the cost of hurricanes in terms of human suffering on vulnerable populations is difficult to document. Some preliminary reports suggest that veterans who carry a diagnosis of post traumatic stress disorder (PTSD) may in fact be at greater risk for recurrence or exacerbation of PTSD symptoms following a natural disaster, as well as experiencing change in patterns of general care and psychosocial stressors.

Study Design and Methods: Data from The Veterans Health Administration (VHA) Outpatient Medical Dataset was used for a retrospective comparison of health utilization for veterans who carried a diagnosis of PTSD that were in Florida counties directly impacted by hurricanes and compared with cohort veterans in Florida counties that were not in the direct path of the hurricanes.

Findings/Results (Lessons Learned): During the 3 year study period, 153,511 Florida veterans accounted for 1,492,057 daily mental health encounters; PTSD veterans accounted for 9.9% of the encounters (n=15,331). Florida veterans averaged 59.1 ± 14.8 years of age (PTSD: 57.8 ± 11.6 ; non-PTSD: 59.2 ± 15.1), 91.5% male (PTSD: 92.4%; non-PTSD: 91.4%) and 48.9% married (PTSD: 56.8; non-PTSD: 48.0). Veterans from hurricane affected counties averaged 59.1 ± 14.8 years of age, 91.5% male and 48.9% married compared to non-hurricane affected counties 58.0 ± 14.2 years of age, 91.9% male, and 91.9% married. PTSD veterans comprised 9.6% of the hurricane affected counties vs. 10.2% for non-hurricane affected counties. PTSD Veterans residing in counties affected by hurricane paths and diagnosed prior to hurricane season demonstrated an immediate 28% increase in utilization following landfall when contrasted with veterans residing in non-hurricane affected counties (+28.0% vs. -6.5%, $p < 0.001$). Additionally, veterans in affected counties were found to utilize more group psychotherapy treatment sessions overall (30.3% vs. 27.2%, $p < 0.001$).

Conclusions and Implications for Policy, Practice, and Research: These findings have implications for the service utilization of veterans with PTSD and the provision of mental health

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services. The effects of future hurricanes or other types of disasters require consideration of specific services as well as targeting of mental health needs in this vulnerable population with preexisting mental health diagnoses.

Relevance to Veterans or VA: These situations present opportunities for interventions that may be applicable to both pre- and post disaster, e.g., psychological first aid (PFA). PFA attempts to mitigate the impact of trauma and increase efficiency of already burdened mental health providers in the acute phase following a natural disaster. PFA provides a framework for providing acute mental health services by personnel without extensive mental health training.

Use of Outpatient Mental Health Services by Homeless Veterans after Hurricanes

Lisa M. Brown, PhD

University of South Florida and James A. Haley Veterans Hospital

Co-Authors: Scott Barnett, PhD; Edward J. Hickling, PsyD; Robert Campbell, JD, MPH, PhD; Ron Olney, PhD; John A. Schinka, PhD

Background and Objectives: Since the 2005 hurricanes, more than 300 scholarly articles have been published noting the psychological effects on residents who became homeless after the storms. To date, none have examined the impact of these extreme weather events on people who were already homeless when the hurricanes struck. This study examined the effects of hurricanes and VA outpatient mental health service utilization by homeless veterans living in Florida.

Study Design and Methods: Data from the Veterans Health Administration Outpatient Medical Dataset during VHA fiscal years 2004-2006 was used to capture all outpatient mental health encounters for select CPT (Current Procedural Technology) codes. Outpatient data was coded using the International Classification of Diseases – 9th Revision (ICD-9-CM). Mental health encounters were abstracted for a primary diagnosis: ICD-9-CM 290-319. Veterans included were homeless prior to the 2004 hurricane season. Five separate mixed effects models were calculated, one for each CPT, to assess the relationships of hurricane county residence, homelessness, age, gender, service connectedness, and marital status on average monthly CPT utilization rate per veteran. Statistical significance was assumed.

Findings/Results (Lessons Learned): During the study period, homeless veterans comprised 0.7% (n=1,033) of all Florida veterans (n=153,511). Veterans from hurricane affected counties comprised 39.6% (n=60,840); homeless veterans 1.0% (n=551). Homeless veterans residing in hurricane affected counties were significantly more likely than homeless veterans living in non-affected counties to receive more treatment for anxiety (94.6% vs. 5.8%, p<0.001) and PTSD (20.0% vs. 12.9%, p<0.002). Homeless veterans in hurricane affected counties were also significantly more likely than their non-hurricane affected counterparts to participate in group psychotherapy (32.4% vs. 13.4%, p<0.002), but less likely to participate in individual therapy (3.55% vs. 17.3%, p<0.001).

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Conclusions and Implications for Policy, Practice, and Research: These findings have implications for homeless programs, policy initiatives, future research endeavors, and provision of VA mental health services to homeless veterans post-disaster. Currently, evacuations of over 1,000 people occur more than three times a month and on average slightly more than one presidentially declared disaster occurs weekly in the United States. Nationally, approximately 107,000 veterans are homeless. Homeless veterans may be at particular risk for experiencing negative outcomes after disasters due to their pre-existing mental health functional status and general lack of resources. Previous research indicates that even with the specialized mental health programs offered by the VA system, homeless veterans with mental illness are at increased risk of mortality compared to the general population. Disasters amplify risk for morbidity and mortality.

Relevance to Veterans or VA: This study is the first to document the effects of hurricanes on use of outpatient mental health services by homeless veterans. The VA has approximately 4,000 agreements with community partners. Unlike hospitals, nursing homes and other health care systems that are well integrated with existing emergency operation centers, public officials, and emergency planners, little is known about the ability of community agencies to assist homeless veterans during and after disasters. While the federal government has granted more than \$11 billion for state and local governments to develop comprehensive emergency management plans, it is rare that the needs of homeless people are addressed in these plans.

Pilot Application of Psychological First Aid Specifically Designed for the VHA

Edward J. Hickling, PsyD

Tampa VA, Research Center of Excellence

Co-Authors: Lisa M. Brown, PhD; Scott Barnett, PhD; Robert Campbell, JD, MPH, PhD; Gustave F.P. Sison, PhD; Ronald Olney, PhD

Background and Objectives: Psychological first aid (PFA) is a brief intervention, originally funded by SAMHSA and developed by the National Center for Posttraumatic Stress Disorder (NCPTSD) and National Child Traumatic Stress Network (NCTSN), to treat affected populations in the aftermath of a disaster. The overarching goal of PFA is to limit adverse psychological consequences by mitigating stress and enhancing adaptive coping skills. Although endorsed by the Institute of Medicine and Homeland Security and routinely used by the American Red Cross and the Medical Reserve Corp, PFA has not been formally adopted and used by the VHA. In part, this is because the PFA Field Operations Guide was developed for mental health responders providing care in community settings. There are ongoing efforts to adapt PFA for use in diverse settings. This research project tailors the PFA Guide to meet the needs of disaster exposed veterans, VHA staff who provide the intervention, and the institutional requirements of the VHA system.

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Study Design and Methods: The development of the PFA guide for VHA utilizes a research protocol successfully used to modify, test, and evaluate a PFA program previously developed for use by nursing home staff with residents after disasters and traumatic events. Primary program development steps include modifying existing materials for PFA application, removing irrelevant content and adding information specific for the VHA population and systems. The next steps will include a pilot trial of the manualized intervention, training VHA staff to deliver the intervention and conducting an evaluation of training success. Feasibility of intervention will be undertaken, as well as utility of application over a trial period of time.

Findings/Results (Lessons Learned): VHA has many at risk populations, including the catastrophically disabled, older, and vulnerable adults (e.g. polytrauma, dementia). In 2009, of the 5.7+ million users in the VHA that year, over 405,000 were over 85 years of age, 280,000 were estimated to be catastrophically disabled, 850,000 had serious mental disorders, and 95,000 were receiving PTSD specialized services. The VHA average daily census in nursing home care was over 34,000 residents.

Conclusions and Implications for Policy, Practice, and Research: PFA is a needed and critical component of both disaster medicine and public health preparedness within the VHA. PFA potentially provides a level of protection to those most at risk. PFA intervention is consistent with the overall mission of the VHA. The VHA PFA Guide and training program in development is designed to prepare health personnel and improve overall level of preparedness. Use of PFA can impact VHA emergency response and policies, as well as clinical practice and application. This study potentially will aid veterans at greatest risk following disasters.

Relevance to Veterans or VA: Although PFA is now considered the treatment of choice for trauma exposed populations, it has not been tailored for VHA staff or tested with a veteran population. There is growing recognition of the value of PFA as an early intervention for traumatic events. Yet, few PFA materials have been developed with an evaluative component. The VHA health care system is uniquely aligned to ultimately allow comparisons to be made to aid in the empirical investigation for the PFA program of intervention.

Do Disasters Cause Alcoholism? An Empirical Study of Survivors of 10 Disasters

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VA North Texas Health Care System and University of Texas Southwestern Medical Center at Dallas

Co-Author: Richard V. King, PhD

Background and Objectives: A number of studies have suggested that alcohol use may increase after disasters. It has not been established, however, whether increased alcohol use after disasters leads to new disorders. It is also unknown where alcohol prevention and treatment services can most effectively be targeted after a disaster.

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Study Design and Methods: Data were merged from research on 10 disasters involving 697 directly exposed disaster survivors studied using consistent research methods. The findings were examined to determine the relationship of pre-disaster and post-disaster prevalence of alcohol use disorders and to determine the incidence of alcohol use disorders developing after these disasters.

Findings/Results (Lessons Learned): Nearly 1 in 5 survivors had post-disaster alcohol abuse/dependence. However, most of these cases were pre-existing, and few new cases of alcohol abuse/dependence developed after the disaster. Individuals with an alcohol use disorder were 4 times as likely to report that they coped with their post-disaster emotions by drinking alcohol.

Conclusions and Implications for Policy, Practice, and Research: Post-disaster alcohol use did not appear to regularly result in new cases of alcohol abuse/dependence. Thus, not all drinking after a disaster is necessarily pathological. Apparent discrepancies in the literature on alcohol and disasters may stem from methodological differences with some studies examining alcohol consumption and others examining alcohol use disorders. Survivors with pre-existing drinking problems and those in recovery may be at risk for relapse or escalation of problem drinking following a disaster.

Relevance to Veterans or VA: VA personnel may be deployed in support of emergencies both internal and external to the VA. Affected populations served by VA and other response personnel may include civilians as well as veterans, and alcohol use disorders may be found in both populations. Prevention efforts may be most appropriately directed toward individuals with pre-existing alcohol problems, including those in recovery before the disaster.

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Paper Session III: Systems Capabilities & Recovery

Evacuation of Veterans from Nursing Homes Due to Katrina and Rita

Aram Dobalian, PhD, MPH, JD

VA Greater Los Angeles Healthcare System

Background and Objectives: Existing research within and outside VA does not adequately address health issues for frail and/or mentally ill elders during evacuations, and this is particularly true within nursing homes. Limited research on evacuation exists in other settings (e.g., hospitals). This exploratory project evaluated the evacuation of veterans from nursing homes in areas affected by Hurricanes Katrina and Rita. The evacuation of New Orleans and surrounding areas following Hurricane Katrina was the largest non-military evacuation of civilians in the United States. The healthcare systems in many of these areas were also further affected by a secondary event, Hurricane Rita. Katrina led to the permanent closure of the Gulfport VAMC, and the temporary closure of the New Orleans VAMC. A third VAMC in Biloxi, MS was significantly damaged. The objectives are: 1) To understand the processes related to variations in evacuation and effective disaster-response in VA nursing homes following Hurricanes Katrina and Rita. (2) To understand the impact of the evacuations on the care of veterans who were residents in these facilities.

Study Design and Methods: Data were collected via semi-structured key respondent interviews with organizational representatives (healthcare providers, administrators, and policymakers) from VA. We conducted 13 interviews with key respondents from four VA Medical Centers. We used computer software, ATLAS.ti, designed specifically for narrative interview and/or field notes, to synthesize the qualitative data. This process involved reviewing the interview transcripts, assigning content themes, reviewing the derived themes, and coding the interviews.

Findings/Results (Lessons Learned): We found that (1) administrators primarily relied on local resources, prior experience, and local planning rather than state and federal emergency response systems; (2) there is substantial difficulty in evacuating frail nursing home residents; (3) it is difficult to retain staff and a viable organization during and after a disaster; and (4) key lessons learned could be incorporated into future planning. Although VA's response to Hurricanes Katrina and Rita was generally viewed as positive, most respondents stated that some of this success was the result of good fortune. All voiced concerns regarding what might occur during the next disaster. Despite local and regional efforts to improve preparedness for future disasters in the time since the hurricanes, respondents identified a number of substantial unaddressed preparedness needs that remain.

Conclusions and Implications for Policy, Practice, and Research: These disasters provided a unique opportunity to examine the VA's ability to respond to system-wide challenges and ensure access to high-quality services. The devastating scope of these two disasters allowed us to better understand the health needs of residents during and after evacuation, and examine a range of system, coordination, and integration issues related to the post-disaster delivery of health

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services for frail and elderly veterans in nursing homes. The two hurricanes brought unanticipated challenges and pointed out potential operational flaws in existing disaster response plans. Future research could focus on VA emergency preparedness practices that might be effectively integrated into routine practice. Over time, these systematic, evidence-based practices could be implemented and subsequently evaluated after future disasters.

Defining and Evaluating Threats and Designing Strategies for VA Healthcare

Robert J Glass, PhD

Sandia National Laboratories

Co-Authors: Walter E. Beyeler; Arlo L. Ames; Thomas W. Moore; S. Louise Maffitt; Victoria J. Davey

Background and Objectives: VHA is the largest integrated healthcare system in the U.S. with an FY 2009 budget of over \$40 billion, and over 200,000 employees, volunteers, and trainees working in the system on any given day at 153 medical centers, 882 clinics, 136 long term care facilities, 92 home-based care programs, 45 residential rehabilitation programs and 207 counseling centers. The VHA OPHEH is committed to improving the health of veteran populations through professionally-developed policies and programs relating to surveillance, prevention and treatment of natural or manmade events. The challenges inherent in studying disaster preparation and mitigation are apparent—disasters are difficult to evaluate effectively because of their unpredictable timing, chaotic nature, and primary humanitarian focus. A new initiative underway at Sandia National Laboratories advances the application of computational tools for policy design and actualization within Complex Adaptive Systems of Systems (CASoS). CASoS are ubiquitous and include corporations, cities, infrastructure, and governments—all vastly complex physical-socio-technical systems. A national integrated healthcare system such as that of VA, with its complex networks of local and national organizational structure, reliance on local and national providers of supplies and utilities, and with its varied relationships with other healthcare entities and personnel, is a complex system that would benefit from analysis as a CASoS.

Study Design and Methods: In collaboration with Sandia National Laboratories, the VHA OPHEH has begun a project to first define and evaluate threats and then design effective mitigation strategies for VA Healthcare. Computational modeling is central to this process and makes use of a unique generalized modeling system called Loki. Loki is a networked agent computational system based in complexity theory that treats entities (individuals and groups) explicitly as “agents”. Individual agents are endowed with behavioral rules for internal states and interaction with other agents or the external environment. Loki further represents the connections between agents as overlapping networks. Loki has been applied to assess vulnerabilities of power grids, payment systems, analyze terrorist group dynamics, and design strategies to mitigate infectious disease events. Within context of Sandia’s Loki modeling system, policies for mitigating natural and manmade threats to VA healthcare will be evaluated and the best ones chosen to protect the VA healthcare system, and ultimately, veterans and VA staff.

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Findings/Results (Lessons Learned): In this presentation, we will outline our developing collaboration, our classification/systemization of threats elicited through site visits, an overall conceptual model for the VHA and its operations at both the local and national system scales, and our first problem definition for computational analysis.

Conclusions and Implications for Policy, Practice, and Research: Analysis of VA healthcare as a complex adaptive system of systems allows identification and focus on threat scenarios of consequence, characterizes a threat scenario's effects on VA healthcare delivery, determines options and operations that might mitigate threats, and informs policy or planning for specific threats.

Relevance to Veterans or VA: The VHA OPHEH is committed to improving the health of veteran populations through professionally-developed policies and programs relating to surveillance, prevention and treatment of natural or manmade events. This project has been undertaken to define actions and policy options that will save lives, prevent harm, and maintain VA healthcare system operations in the face of threats.

Virtual Immersive Platform for Education and Research: Pandemic Flu Patient Surge Planning and Practice

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VA San Diego Healthcare System

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Background and Objectives: Virtual environments can support an approach to learning that emphasizes student-centeredness and enables learning to be related to context and practice. In collaborative learning theory, the learner is seen as an active participant in the learning process, constructing knowledge through interaction with peers and instructors. Within the multi-user virtual environment, a user can interact within the multi-user virtual environment by virtue of an avatar, a computerized character that represents the user. The avatar manipulates and interacts with objects in the virtual world. These virtual worlds are shared spaces where an entire organization of learners can simultaneously experience the same standardized yet evolving online environment. These characteristics make virtual environments more like the real world and less like the static, intermittent, stand-alone exercises and games used in traditional emergency preparedness training.

Study Design and Methods: We will present the results of our three pilot courses to develop a curriculum for ED nurses and Hospital Incident Command staff to deal with a large influx of patients. We will also present our curriculum and show how students learned to: 1) Function in their job class in a virtual world; 2) Obtain Healthcare Incident Command System (HICS)

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training; 3) Practice Emergency Severity Index (ESI) and START (simple triage and rapid transport) triage on simulated virtual patients; 4) Perform several functional team exercises including setting up an outdoor surge area in the parking lot of our virtual hospital; and 5) Visualize and evaluate their own performances during the functional drills.

Findings/Results (Lessons Learned): We will show video clips (machinimas) of the virtual lessons. We will also discuss our Lessons Learned including: 1) improved team communication, 2) planning, 3) team decision making, and 4) the ability to visually debrief.

Conclusions and Implications for Policy, Practice, and Research: We hope that participants will come away with a new appreciation for how this virtual immersive teaching method can support the delivery of disaster management education through all phases of the cycle (mitigation, preparedness, response, and recovery).

Relevance to Veterans or VA: We will be describing a new emergency preparedness curriculum that is being piloted at VA San Diego Healthcare System.

Patient Safety through Effective Communication during Disaster Relief

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South Texas Veterans Healthcare System

Background and Objectives: The Institute of Medicine (IOM) published a report "To Err Is Human" in 1999 that indicated how patient care is delivered in the United States. According to this report, communication errors were identified as a significant factor in medical errors contributing to patient harm or death. The object of this project was to improve patient safety through accurate communication between nurses, physicians, and emergency medical technicians during disaster relief from hurricane Ike.

Study Design and Methods: A handoff strategy which was implemented was designed to improve communication between nurse and physician, and nurse and emergency medical technicians (EMT) during delivery of hurricane evacuees to the medical shelter and continuing their transition of care. Utilizing the SBAR strategy (Situation, Background, Assessment, Recommendation) with the EMT's and physicians elicited them to respond with the same type of information. Then when delivering the acquired information to the assistants that would deliver daily care, the HUDDLE strategy was utilized to come together and discuss a plan.

Findings/Results (Lessons Learned): Improved patient satisfaction, improved communication between all personnel involved with patient care, and improved accuracy in delivery of care were noted. Initially transitioning patients to a shelter from a disaster site is chaotic, but implementing a standardized verbal communication using the best practice strategy to transfer pertinent information facilitated fast and effective admissions. Patient reactions to the efficient transition were positive.

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Conclusions and Implications for Policy, Practice, and Research: This type of communication improves teamwork, nursing accountability, and decreases gaps in communication. Errors in communication have repeatedly been identified as a factor in patient safety events. Ensuring a standardized system for communication and having established group communication times aids to reduce errors caused by poor or no communication.

Relevance to Veterans or VA: Improving communication has relevance to veterans and the VA to improve awareness of problems, to decrease gaps in service, thereby reducing mistakes and negative outcomes.

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Workforce & Communication

Assessment of Training Priorities for the Texas Public Health Workforce

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Co-Author: Sherry Falgout, MPH

Background and Objectives: In Texas, there are 254 counties served by 11 health regions. There are 64 participating local health departments and 80 non-participating local health departments. There are a number of counties that depend solely upon the Texas Department of State Health Services Regional offices to act as their local health departments. The Texas Regional DSHS offices' roles are critical in areas where local health departments have limited or no presence and resources are minimal or non-existent. The purpose of the assessment was to assess the emergency preparedness and public health training needs of Texas DSHS Regional Staff and identify resources needed to improve the effectiveness and availability of CPHP and TPHTC education and training activities.

Study Design and Methods: The assessment was created using models successfully used by the North Carolina Center for Public Health Preparedness and the Northwest Center for Public Health Practice. Assessment questions related to public health training were based on the core public health competencies. Assessment questions related to public health emergency and response were based on the emergency preparedness competencies published by the Columbia University School of Nursing. The training needs assessment was disseminated electronically by the Texas Department of State Health Services Regional and Local Health Services to Regional and Deputy Regional Directors for the Texas Department of State Health Services.

Findings/Results (Lessons Learned): Results and findings include public health workforce experience, occupation, public health training priorities, public health emergency preparedness training priorities, training preferences, and demographics and challenges.

Conclusions and Implications for Policy, Practice, and Research: The training needs assessment will be used to inform the training topics for educational activities to be developed and delivered by the HRSA funded Texas Public Health Training Center and CDC funded USA Center for Rural Public Health Preparedness.

Relevance to Veterans or VA: This emergency preparedness and public health training needs assessment model could be modified and utilized by the VA to assess the training priorities for a similar target audience.

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*Uniting Stakeholders in Rural Communities to Engage in the Pandemic Influenza Response
Planning Process*

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Co-Author: Jennifer Griffith, DrPH, MPH

Background and Objectives: To effectively plan for and respond to public health emergencies in rural communities, public health and other health professionals must engage the community at large in the planning process by integrating a broader group of local stakeholders to participate in infrastructure building and rural emergency response planning. Over the course of two years, the CDC funded USA Center for Rural Public Health Preparedness, in partnership with the Texas Department of State Health Services, assisted thirty-three rural North Texas counties with limited or non-existent local public health services in pandemic influenza preparedness planning activities.

Study Design and Methods: Phase One consisted of Rural Preparedness Roundtables, preparedness planning technical assistance, and table top exercises conducted within county clusters. Phase One results determined further training opportunities necessary to improve counties' preparedness and awareness. Additionally, counties who had not yet complete pandemic influenza response plans required continued support and assistance to review and exercise their plans in the future. As a result, Phase Two of the project was developed to address the unique challenges rural counties face when planning for a pandemic response, focusing on the importance of developing public health infrastructure with limited availability of resources. Sub-regional conferences with culminating table top exercises complemented the education and planning process for these rural counties. The conferences provided counties further along in the planning process the opportunity to display best practices and new ideas with adjacent rural counties. Based upon participant and Texas DSHS feedback, Phase Three focused on bringing the planning and exercise process to the county level. Technical assistance visits were made to each county to discuss county specific planning issues and to provide additional resource materials. Following the visits, ten Rural Preparedness Roundtables were conducted in groups of two to four county clusters. The phase culminated with individual county exercises to help facilitate local planning and increase involvement and diverse stakeholder participation.

Findings/Results (Lessons Learned): Findings and results examine rural strengths and assets, relationships and partners, concerns and gaps in the existing system, training needs, and resources in reference to pandemic influenza planning.

Conclusions and Implications for Policy, Practice, and Research: Conclusions and implications will review the number of individual participants and counties throughout the duration of the project, the types of stakeholders involved in planning activities, strategies to increase participation in planning activities, and how to engage rural community stakeholders in the pandemic influenza planning process.

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Relevance to Veterans or VA: This rural community/public engagement methodology could be utilized by the VA for all hazards response and planning to engage the public in Veteran-related issues.

Texas Rural Communities Respond to H1N1

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Texas A&M Health Science Center School of Rural Public Health

Co-Authors: S. Kay Carpender, BS, Jill J. Artzberger, MPH, Barbara J. Quiram, PhD

Background and Objectives: During the past three years the USA Center for Rural Public Health Preparedness with their partner, Health Service Region 2/3 of the Texas Department of State Health Services has engaged in activities, trainings, exercises, and technical assistance visits related to preparedness planning for pandemic influenza. Preparedness planning is an ongoing effort and requires counties and other entities to revise and modify plans based on actual experiences. As a continuation of this partnership, and in light of the H1N1 outbreak in the spring of 2009, the USA Center and Region 2/3 determined that visits with 39 rural counties in the region were warranted.

Study Design and Methods: Letters were sent to County Emergency Management Coordinators and County Judges informing them of these visits and encouraging them to include others from their community in the meeting who would be involved in a response to pandemic influenza. During these visits counties were asked to share their experiences with the spring H1N1 outbreak in an effort to identify areas where the USA Center along with Region 2/3 may be able to provide resources, tools, or assistance for any future outbreaks.

Findings/Results (Lessons Learned): Technical assistance visits were completed with 36 of 39 rural counties. Counties reported successes and challenges related to the Spring H1N1 outbreak, identified additional needs and resources, issues uncovered as a result of the spring outbreak, and reported on actions being taken.

Conclusions and Implications for Policy, Practice, and Research: These visits highlighted the importance of continuing to engage stakeholders at the county level in the planning and response process. As new threats emerge additional information and adjustments will be needed in order for counties, particularly rural counties, to mount an effective and timely response.

Relevance to Veterans or VA: The findings from this work are relevant to veterans and the VA (and VA entities) as they are part of an overall community and may be an integral part of a local response.

Understanding Rural Health Culture in Disaster Situations: A Case Study Approach

Andrea Jennings, DrPH

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Louis Stokes Department of Veterans Affairs Medical Center-Geriatric Research Education and Clinical Center

Background and Objectives: Rural communities face substantial risks of natural disasters but rural community based outpatient clinics (CBOC's) face multiple obstacles to preparedness. One such obstacle is understanding rural health culture in disaster situations. It is of paramount importance that health care professionals' working in CBOC's become aware of the unique needs that the rural population may have in disaster situations. Objectives for this presentation include: 1) identifying characteristics of rural areas and people 2) exploring cultural values in rural populations, 3) examining spiritual traditions of rural people, and 4) identifying special populations in the rural community and discussing their particular needs in disaster situations.

Study Design and Methods: In order to meet the above objectives, a case study will be available online to health care professionals in CBOC'S located in rural areas in Ohio. Currently, the written version of the case study is being pilot tested with nurses. The case study will provide background information about the characteristics of rural areas, and cultural values, and special populations. A ten question pre test and post test will be completed by each health care professional to gauge the knowledge level prior to and after the exposure to the case study material respectively. In addition, qualitative responses to the following questions will be solicited: 1) Was the content presented in the case study appropriate for all health care professionals? 2) What other content about rural health culture in disaster situations should be incorporated in the case study? 3) Were you satisfied with the case study approach method as the primary teaching strategy?

Findings/Results (Lessons Learned): Thus far, five nurses have completed the pilot testing of the case study and post test scores were higher than pre test scores for each individual. All of the nurses thought that the material presented was appropriate for all health care professionals and some suggested that another case study should be geared toward nurses only. The nurses also reported that a rural health disaster preparedness framework/model would be helpful to the reader when reading the case study. All nurses thought that the case study approach was appropriate and a creative teaching strategy.

Conclusions and Implications for Policy, Practice, and Research: Based on the preliminary results, nurses increased their knowledge about rural health culture and hopefully will incorporate this new knowledge in their practice if a disaster occurs. The findings from the project may continue to illustrate that there is a knowledge deficit in this area and that government at all levels should address this issue by developing policies that focus on educational initiatives and other resources that may benefit this population.

Relevance to Veterans or VA: The case study may be beneficial to healthcare professionals working in CBOC's throughout the VA system. VA Health care professionals working at CBOC's who understand rural health culture in disasters situations can improve overall care to Veterans.

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The "Right Stuff": Competencies for Emergency and Disaster Response

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Background and Objectives: Effective disaster response requires a competent workforce. But what constitutes competence? Competency frameworks have been developed. But what do the experts say about what distinguishes effective vs. ineffective responders?

Study Design and Methods: First, focus groups with experts were conducted to identify the attributes most likely to distinguish effective vs. ineffective disaster responders and leaders. Discussions were transcribed and analyzed. Ten categories of attributes were identified from the content. Definitions of the categories were written. The content was reliably coded into the categories, and frequencies were calculated. Second, a survey was conducted with emergency/disaster responders and leaders to rank order the categories established in the focus groups by their importance to effective disaster response.

Findings/Results (Lessons Learned): The five most important categories of attributes identified for disaster leaders were: (1) problem-solving and decision-making, (2) communication, (3) calm and cool, (4) adaptable/flexible, and (5) teamwork/interpersonal skills. For disaster responders, the most important categories were: (1) teamwork/interpersonal skills, (2) calm/cool, (3) adaptable/flexible, (4) performs role, and (5) communication. Other categories of attributes identified by the focus groups were incident command system knowledge, general knowledge, cognitive skills, and character.

Conclusions and Implications for Policy, Practice, and Research: In addition to disaster-specific knowledge typically learned in training and through experience, a number of general skills and personal characteristics are considered by experts to distinguish the most effective responders from those less effective.

Relevance to Veterans or VA: VA personnel may be deployed in support of emergencies both internal and external to the VA. Optimal performance in multi-casualty disasters and emergencies requires rapid identification and deployment of competent disaster response personnel who possess relevant skills and qualifications, which were explored in this study.

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Response Systems and Capability

State of Texas Assessment: Pandemic Influenza Capacity, Integration and Partnerships

Cara Pennel, MPH

Texas A&M Health Science Center School of Rural Public Health

Co-Authors: Jennifer Griffith, DrPH, MPH, Kay Carpender, BS, Barbara Quiram, PhD

Background and Objectives: For years, experts have agreed that it was not a matter of if an influenza pandemic occurs but a matter of when. The emergence of H1N1 validated these concerns. In order to demonstrate that pandemic influenza funding had improved preparedness efforts to respond, the USA Center for Rural Public Health Preparedness at the Texas A&M School of Rural Public Health conducted an assessment in Texas to determine the effectiveness of pandemic influenza preparedness planning and partnerships. Specifically, this assessment was conducted to better understand the capacity of public health regions to respond to a flu pandemic, the integration of pandemic influenza plans and partners, and the involvement of non-traditional stakeholders in pandemic influenza planning.

Study Design and Methods: The assessment was distributed state-wide using Survey Monkey to full service health departments, county-level emergency management coordinators, and healthcare (hospital/clinic) stakeholders responsible for pandemic influenza planning in their facility. Assessments were analyzed by public health region, job field affiliation (public health vs. emergency management vs. healthcare), and population density (rural vs. suburban vs. urban).

Findings/Results (Lessons Learned): One-hundred three (103) respondents completed the assessment: 51 emergency management coordinators, 36 healthcare stakeholders responsible for pandemic influenza planning and 16 local health department representatives. Preliminary findings show that public health respondents appear to feel more prepared; urban respondents appear to feel more prepared and have greater confidence in their ability to respond; public health and emergency management respondents appear to have more non-traditional partnerships than healthcare; respondents in urban areas appear to have more non-traditional partnerships; urban and suburban-based respondents perceive that capacity has increased with pandemic flu funding over the past three years.

Conclusions and Implications for Policy, Practice, and Research: Programs and funding should support a greater emphasis on rural preparedness to increase preparedness and response capabilities, capacity and non-traditional partnerships.

Relevance to Veterans or VA: Findings for the healthcare stakeholder category could be translated to pandemic influenza planning and response to VA hospitals and clinics, particularly as it relates to allocation of resources in rural-based clinics.

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**Rural Pandemic Influenza Public Engagement Project: A Strategy for Community Education,
Collaborative Planning and Policy Development**

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Co-Authors: Kay Carpender, BS, Barbara Quiram, PhD

Background and Objectives: An emerging emphasis has been placed on the role and involvement of the public in preparedness planning and policy decision-making. Collaborative planning and policy development is even more relevant for issues that may arise in a flu pandemic to result in greater public trust and compliance. It is particularly critical that rural areas engage the community-at-large, given that these communities lack a formal public health and healthcare infrastructure and are frequently dependent upon non-traditional partners and volunteers in preparedness planning and response.

Study Design and Methods: The Texas A&M School of Rural Public Health worked with state, regional and local public health representatives, local officials, and others in two rural Texas counties to implement the Rural Pandemic Influenza Public Engagement (R-PIPE) project. Methods and activities included local and regional planning meetings, steering committee meetings, one educational conference, seven work group meetings per county, town hall meeting, community education campaign in conjunction with National Night Out.

Findings/Results (Lessons Learned): County work groups were created to select and discuss local priority issues and develop public health policy recommendations for these issues. County work group members discussed local challenges related to each of these issues, identified local solution and next steps, and gained support and approval of multi-disciplinary community perspectives.

The project also employed a mixed methods evaluation approach, implementing and utilizing both quantitative and qualitative performance measures and measurement tools, including logistical and process data, individual participant data, and external assessments to triangulate data to demonstrate effectiveness for each measure and objective.

Conclusions and Implications for Policy, Practice, and Research: The public engagement methodology has been successfully used to engage a broad group of rural stakeholders and community members in H1N1 discussions and policy decision-making, which can enhance public education, as well as support and compliance for local policy decisions.

Relevance to Veterans or VA: This public engagement methodology could be employed by the VA for various topics to engage the public in Veteran-related issues.

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Vulnerable Populations

Trends in Emergency Department (ED) Services workload and costs by Veterans 85 and Older.

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Co-Authors: Ron Olney, PhD, Edward J. Hickling, PsyD, Scott Barnett, PhD, Lisa M. Brown, PhD, Andrea M. Spehar, DVM, MPH, JD

Background and Objectives: The VHA provides emergency medical services through Emergency Departments (ED, N=95), Urgent Care Clinics (UC, N=23) or combined emergency and urgent center clinics. Only six of the VA hospitals are configured to provide trauma care, with 96% of facilities reporting that they do not provide major trauma services. This results in veterans relying on non-VHA hospitals and emergency management systems to provide important levels of care. ED service utilization is especially important to frail elderly veterans with major chronic diseases and increased vulnerability to fall-related injuries. The goal of this pilot study was to identify national trends in the use and costs of ED services by elderly veterans 85 years of age and older. VHA and Fee Basis program ED services were analyzed.

Study Design and Methods: This is a retrospective descriptive study of outpatient ED services in veterans 85 years and older for FY 2007-2009. Data was extracted from Medical SAS Outpatient datasets, Decision Support System (DSS) Outpatient workload and cost reports, and Fee Basis Outpatient datasets and reports. ED services major disease categories in the VA and Fee Basis program were identified.

Findings/Results (Lessons Learned): The VHA has experienced dramatic growth in the workload and costs associated with its Emergency Department services for veterans 85 years and older. Between FY2007 and FY 2009, the VHA ED service workload and costs for this cohort more than tripled from \$11.2 M to \$41.5 M. The growth in unique patients seeking ED services in this age cohort more than doubled from 16,675 to 42,066 unique patients. The Fee Basis program ED services in this age group grew from 2,793 unique patients to 3,426. Fee Basis costs grew from \$18.3 M to \$28.5 M. Both programs had similar proportions of visits associated with circulatory, respiratory diseases, and injuries.

Conclusions and Implications for Policy, Practice, and Research: VHA emergency medical planning must continue to ensure the availability of, and access to, high quality ED and trauma services. This necessitates continued study of the patterns of workload and costs associated with these services, both within the VHA and in the non-VHA sector. The frail elderly veteran is vulnerable and reliant on these services especially in times of disaster.

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Relevance to Veterans or VA: In FY 2009 the VHA treated over 885,000 patients in its EDs and expended more than \$789 M. The VA must continue to coordinate with non-VHA providers to ensure that veterans have the full array of emergency medical services available to them. This is especially important in rural areas of the country where one out of three veteran enrollees resides. Continued attention to the recent rapid growth trends in the workload and costs to the VA associated with ED services is warranted. Future research should incorporate Medicare ED workload and cost data on elderly veterans.

Mental Health Preparedness and Community Health Workers

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Texas A&M School of Rural Public Health

Co-Authors: Kay Carpender, BS, Mercedes Duchicela, MPH

Background and Objectives: Within Latino communities, there is often a stigma associated with mental disorders. In a disaster involving high levels of stress among an entire population, this may lead to delays in seeking care, which can have negative consequences on recovery. Thus, the importance of mental health preparedness within Latino communities becomes evident. Disaster situations will necessitate facilitators who possess knowledge of mental health problems, stress reactions, coping mechanisms, and recovery strategies. Promoters are uniquely positioned to fulfill this role in helping the populations they serve begin to recover after a disaster.

Study Design and Methods: Following the identification of a training priority in this area, the USA Center for Rural Public Health Preparedness drew upon various sources of material to develop a three-hour training activity on Mental Health Preparedness for Promoters in the fall of 2007. The objectives of the course were to increase participant knowledge of mental health and mental disorders, as well as traumatic events and stress, so that they might better understand methods to cope with their own stress as responders, as well as the stress experienced by members of their community. The material was presented in a bilingual, multimedia format, and active discussion and participation were encouraged.

Findings/Results (Lessons Learned): A post-training assessment found a significant increase in participant knowledge of the course material, and the participants found the content relevant and would recommend the course to their peers. The majority of participants had never received training on mental health before. A method for further evaluation of participant skills and abilities is being developed.

Conclusions and Implications for Policy, Practice, and Research: Training Community Health Workers in the skills needed for Mental Health Preparedness will better prepare their vulnerable communities to respond and recover in the case of a disaster.

*2010 Veterans Health Administration Comprehensive Emergency Management Program
Evaluation and Research Conference:
Poster Session Abstracts*

Relevance to Veterans or VA: This train-the-trainer methodology could be used by the VA to prepare other vulnerable and underserved communities.



Welcome to VHA CEMPER 2010

Sponsored by the Office of Public Health and Environmental Hazards & the
Emergency Management Strategic Health Care Group

Aram Dobalian, PhD, JD
Planning Committee Chair

May 4-5
Baltimore, MD

Conference Goals

- ▶ To disseminate new knowledge on emergency management relevant to veterans and VA
- ▶ To foster research advances in support of improving emergency management research and evaluation in VHA priority areas
 - Special emphasis on implementation
- ▶ To increase collaboration and research-practice partnerships among VA and non-VA researchers and practitioners



Conference Themes

- ▶ Vulnerable Populations (e.g., behavioral health, frail elders)
- ▶ Emergency Communications (e.g., all-hazards information exchange with diverse audiences)
- ▶ Preparing the Workforce (e.g., workforce management, training, leadership, competencies)
- ▶ Response Systems & Capabilities (e.g., evacuation of facilities, H1N1, supplies, preparedness & response metrics)
- ▶ Recovery (i.e. restoring the affected area to its previous state)



VHA's Emergency Management Role

- ▶ Preparedness and response actions mandated through various Federal laws and regulations to ensure continuity of care and operation
- ▶ VA serves as a primary back up to DoD Military Health Care System during war or national emergency, and assists other federal agencies in providing medical and other services during natural disaster or terrorist attack



VHA's Emergency Management Activities

- ▶ Emergency preparedness budget supports:
 - Pharmaceutical caches, decontamination, personal protective equipment, deployable clinics, Environmental Safety Specialists/ Emergency Coordinators, and training needs
- ▶ Played role in all major presidentially declared disasters since 1992
 - e.g., Hurricane Andrew, Northridge Earthquake, 9/11 Terrorist Attacks
- ▶ On-site support to high-threat events
 - e.g., Olympics, Presidential inaugurations, Papal visits, Super Bowl



Conference Agenda: Tuesday

- ▶ Three sessions on VHA's readiness
- ▶ Concurrent sessions
 - Overview of VA, veterans, VA research funding & VA databases
 - Meet the Editors Panel
- ▶ Perspectives of VA REMS and AEM
- ▶ Transportation Planning: DoT
- ▶ Follow up to last year's conference
 - Final results of VA and veteran literature review
 - Research agenda
- ▶ National Health Security Strategy & Related Research across Federal Agencies
 - ASPR, CDC, DHS, NORAD
- ▶ Implementation Science
- ▶ Poster Session & Reception



Conference Agenda: Wednesday

- ▶ Concurrent panel sessions
 - Go directly to panel sessions after breakfast
- ▶ Session on ESF-6
 - FEMA, ACf
- ▶ Public-private collaborations
 - BENS, FedEx
- ▶ American Red Cross
- ▶ Haiti
- ▶ VA/Local Health Department Collaboration
- ▶ Plenary – Art Kellerman



Acknowledgements

- ▶ **Planning Staff**
 - Maria Claver, PhD, MSW
 - Darya Friedman, MPH
 - Jia Bai, BA
- ▶ **Conference Support**
 - Leslie A. Hurd
 - Program Support Assistant, VA EES Birmingham
 - Shelley Mullinix
 - Budget Analyst, EMSHG
 - Nancy Pancho
 - Staff Assistant, EMSHG
 - Michael Patton, MA, CMM
 - Commanding Officer, POTHOS
- ▶ **Invited Speakers, Panelists & Abstract Presenters**
- ▶ **Anonymous Abstract Reviewers**



Planning Committee

- ▶ **Aram Dobalan, PhD, JD**
 - VA Greater Los Angeles HCS/UCLA
- ▶ **Peter Browster, BS**
 - VA EMSHG
- ▶ **Kelley Brbs, MD, MPH**
 - OASD, DoD
- ▶ **Mary Pat Coulg, MPH, RN, FAAN, RADM (ret.), USPH**
 - VA ONS
- ▶ **Geraldine Coyle, RN, EdD, CNAA**
 - VA EMSHG
- ▶ **Victoria J. Davey, PhD, RN, MPH**
 - VA OPHEH
- ▶ **Curt E. Dill, MD**
 - VA New York Harbor HCS/NYU
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- ▶ **Ann R. Knebel, RN, DNSc, FAAN, RADM, USPHS**
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- ▶ **Deborah Levy, PhD, MPH, CAPT, USPHS**
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 - OASD (H&A&S), DoD
- ▶ **Sally Phillips, RN, PhD**
 - AHRQ
- ▶ **Jeanne S. Ringel, PhD**
 - RAND Corp.
- ▶ **Josef Ruzick, PhD**
 - VA Palo Alto HCS
- ▶ **Debra Saliba, MD, MPH**
 - VA Greater Los Angeles HCS/UCLA/RAND Corp.
- ▶ **Susan L. Santos, PhD, MS**
 - VA New Jersey HCS/UMDNJ
- ▶ **Kris Siddharthan, PhD**
 - James A. Haley VA (Tampa)
- ▶ **Mildred Williams-Johnson, PhD, DABT**
 - CDC



Conference Overview

- ▶ Bring together VA and non-VA researchers, VA emergency management leadership, policymakers, emergency managers, and other stakeholders to discuss research that supports improvements in emergency management
 - About half of participants are VA employees
 - ACF, AHRQ, AMA, ASPR, CDC, DHS, DoD, DoT, Local Health Departments, NGOs, Private sector, RAND, Universities
- ▶ Provide a forum for discussing issues, sharing information, and networking



Housekeeping

- ▶ 9:45 Concurrent Sessions
 - Overview of VA and VA research funding
 - Chesapeake I
 - Meet the Editors Panel
 - Chesapeake II (This room)
- ▶ 5:00 Reception & Poster Session
 - Loch Raven Room (Second Floor)



Housekeeping: 8 AM Wed.

- ▶ Paper Session I: Workforce & Communication
 - Chesapeake II (This room)
- ▶ Paper Session II: Vulnerable Populations
 - Severn I (Second Floor)
- ▶ Paper Session III: Systems Capabilities & Recovery
 - Severn II/III (Second Floor)



Understanding Readiness of the VHA Health Care System

Part 1: The 2005 Web-based Survey of VA Medical Centers and VISN Offices

Beth Neiley, RN, MS



Session Objectives

- Describe the design, implementation, scoring and analysis of the 2005 web-based survey of VA Medical Center and Network Office preparedness.
- Identify and discuss findings and recommendations from this study.



Purpose

- The VA conducted a study to evaluate the level of "all hazards" preparedness of VAMCs and VISNs, with a special emphasis placed on Weapons of Mass Destruction (WMD) agents
- Objectives were to develop a preparedness assessment screening tool and methodology, and conduct a broad independent assessment of the current level of VAMC and VISN preparedness, creating a baseline against which future progress can be measured



Design

- This self-report assessment was based on a survey developed by the Department of Health and Human Services' Agency for Healthcare Research and Quality (AHRQ) and the Health Resources Services Administration (HRSA) to assess preparedness of non-Federal hospitals nationwide in 2005.
- **That** survey was administered to HRSA funded hospitals nation-wide



Design

- The VA Working Group adapted that survey tool by incorporating some elements from the National Fire Protection Association (NFPA) Standard 1600, Disaster/Emergency Management and Business Continuity Programs, in order to create an "all hazards" framework that would be more suitable for longitudinal studies.



Design

- Final product was a VAMC survey of 45 primary preparedness questions (with 224 sub-questions) and nine demographic questions, and 17 preparedness questions (87 sub-questions) and one demographic question for the VISN offices survey.
- Of the 45 VAMC questions, 26 were preserved in the precise format of the AHRQ/HRSA survey to allow some level of comparability with the non-Federal sector.
- Like the AHRQ/HRSA survey, most questions were constructed to capture a continuum of preparedness



Implementation

- VAMC and VISN surveys administered electronically from November 1 through December 6, 2004.
- Survey administrators received a response rate of 100% of the VAMCs and 100% of the VISN Offices.
- One individual in each VAMC or VISN served as the principal responder, and they were responsible for soliciting input from the most appropriate sources within that VAMC or VISN.



Analysis

- Frequency distribution by VAMC
- Frequency distribution by VISN
- Measures of central tendency (mean, median, mode, standard deviation)
- Basic cross tabulations
- Geographic
- Factor Analysis
- Regression Analysis



Scoring

- Preparedness scores used to assess overall preparedness at individual VAMCs and VISNs
- VISN scores were derived from the average of the VAMC survey responses
- Preparedness scores were also geographically mapped in relation to natural disasters and terrorist threats (population-based metrics of vulnerability as used by the Centers for Disease Control and Prevention's Cities Readiness Initiative)

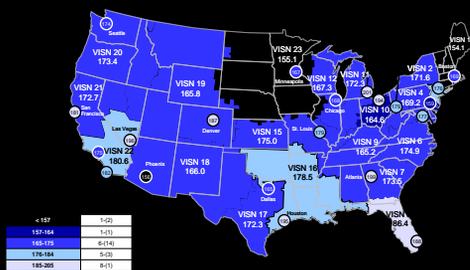


Scoring

- The highest levels of preparedness were found in:
 - VISN 8 (Florida and Puerto Rico) reported the highest average score
 - VISN 3 (New York City/New Jersey)
 - VISN 16 (Mississippi, Louisiana, and Oklahoma)
 - VISN 22 (Los Angeles, California).



Overall Preparedness Scores



Scoring Methodology

Analysis	Questions	Output
Frequency Distribution	All	Number and percentage of respondents in each response category. Provides a baseline description of the state of preparedness for each question
Measures of central tendency (mean, median, mode, standard deviation)	Numeric fill-in responses to questions, such as the number of authorized beds or staffed beds	"Average" response for each question. Mean response and standard deviation used to create categories for further analysis
Basic cross tabulations	Preparedness questions: all Demographic questions:	Differences in preparedness levels between demographic groups



Scoring Methodology

Analysis	Questions	Output
Geographic	Performed against major categories of questions on the basis of risk from terrorism or natural disaster	Maps identifying relative preparedness of VISNs and major urban areas
Factor Analysis	All	Associations and correlations between responses to individual questions and overall survey performance
Regression Analysis	Performed against key indicators, Assessment Parameters, and other selected survey questions	Predictive potential for preparedness at or above the 60th percentile. Aggregate contribution of factors to preparedness



Results suggest that eight factors in combination offer the best predictive model of preparedness

- VAMCs that have designated an **Emergency Management Committee**.
- VAMCs are represented in a **regional planning** group responsible for all hazards preparedness.
- VAMCs with Emergency Operations Plan procedures for **expanding staff availability** during mass casualty events.
- VAMCs that have **agreements in place for additional medications** from outside sources.
- VAMCs that have identified resources necessary for an **Emergency Operations Center**.
- VAMCs that have participated in **community-wide drills** in the past year.
- VAMCs that have prepared and communicated **After Action Reports** following drills.
- VAMCs that provide **all hazards** events training to emergency clinicians.



Other Findings and Recommendations

- Continue to strive for **100% compliance** and greater consistency in planning activities and in establishing command and control structures
- Continue to strive for **100 percent redundancy** of all critical systems at each VAMC structure
- Introduce greater accountability in the approach to training, and place greater emphasis on measurement and the reporting of role based competencies



Other Findings and Recommendations

- ▶ Continue to assess distribution of expensive resources based on threat assessments, community resources, and facility characteristics
- ▶ Consider the use of more standardized and concise checklists to guide and assess minimum levels of preparedness
- ▶ Augment survey data with site visits to selected high scoring and low scoring facilities



Other Findings and Recommendations

- Consider establishing a mentoring program between high and low scoring facilities with otherwise similar characteristics
- Emphasize knowledge sharing and benchmarking with the private sector and other federal agencies, especially HRSA, CDC, and DoD, as well as with the private sector
- Refine this survey and re-administer to track progress; then compare with the AHRQ/HRSA survey of non-federal hospitals
- View preparedness as a dimension of quality and safety, and consider monitoring preparedness with existing internal and external reporting systems



Questions?



Understanding Readiness of the VHA Health Care System

Part 2: The 2009 VHA National Education and Training Needs Assessment

Geraldine A Coyle, RN, EdD, CNAA



Session Objectives

- Describe the design, implementation, scoring and analysis of the 2009 web-based Emergency Management Education and Training Needs Assessment Survey of VA Medical Center and Network Office staff.
- Identify and discuss findings and recommendations from this study.



Design: Competency Framework

- The development of a competency framework to guide VHA's education efforts included a nationwide peer review web survey in 2007.
- Primary and supporting competencies for "all personnel" (core) and six "job groups" were developed.
- These reflected program-level and emergency operations-level competencies.



Competencies

- Competencies describe the necessary knowledge, skills, and abilities that instructional activities (education, training and drills) are designed to provide, and that evaluative activities (exercises) measure.



VHA Health System Emergency Management Competency Framework

- All Personnel (core competencies)
 - Healthcare System Leaders
 - Patient Care Providers
 - Clinical Support
 - Facilities Engineering
 - Police and Security
 - Emergency Program Managers
- “Job Groups”



Design

- GWU developed a glossary, competency framework and curriculum as a basis for VHA's "Emergency Management Academy."
- In order to understand how to focus education and training efforts, EMSHG and the Employee Education System developed a needs assessment survey in late 2008.
- It was designed for "job group" participants to report *their perceived proficiencies* with program- and emergency operations-level capabilities.



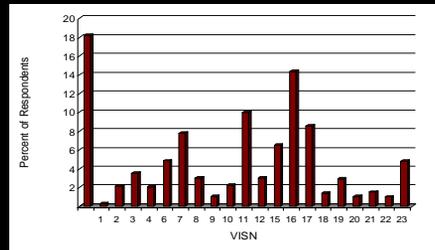
Implementation

- From February 6th-20th, 2009, VHA conducted a National Emergency Management Education and Training Needs Assessment, requesting all VISN and VA Medical Center Directors to encourage key staff to participate in the survey. 2,917 completed the survey.



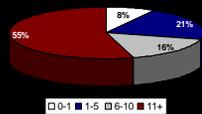
Overall Participant Demographics

Percent of Respondents Located in Each VISN

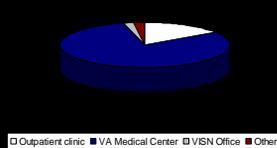


Overall Participant Demographics

Years of Experience in Emergency Management Role

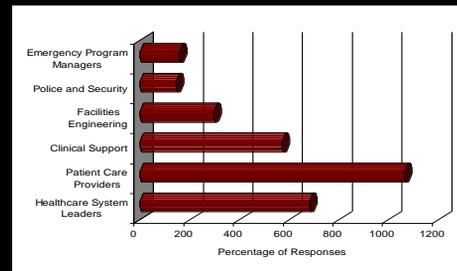


Type of Medical Facility



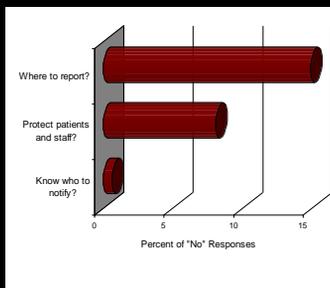
Overall Participant Demographics

Percentage of Respondents Working in Each Job Grouping



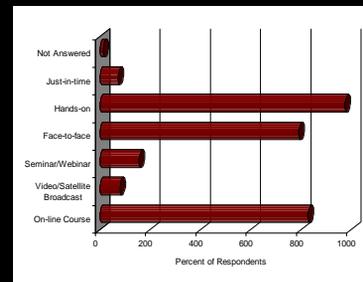
Overall Participant Demographics

Perceived Deficiencies in General Emergency Management Responsibilities



Overall Participant Demographics

Educational methods considered most effective



Training Needs: Health System Leader

Performance Excellence

Top 3 Areas of Strength

- Maintaining Authorized Leadership Succession
- Incident Recognition, Activation and Initial Notification
- Internal Communications

Top 3 Training Needs

- Connectivity with HHS e.g., ASPR, CDC and Other Federal Agencies
- Satellite Telephones
- Maintenance of Voice and Data Communication through Satellite link



Training Needs: Patient Care Providers

Performance Excellence

Top 3 Areas of Strength

- Personal Protective Equipment
- Ambulatory Clinical Services
- Specialty Outpatient Services

Top 3 Training Needs

- Bed expansion under DOD/VA
- National Disaster Medical System NDMS
- Mass Fatality Management



Training Needs: Clinical Support

Performance Excellence

Top 3 Areas of Strength

- Personal Protective Equipment
- Incident Recognition, Activation and Initial Notification
- Isolation Rooms

Top 3 Training Needs

- Bed expansion under DOD/VA
- Mass Fatality Management
- National Disaster Medical System NDMS



Training Needs: Facilities Engineering

Performance Excellence

Top 3 Areas of Strength

- Personal Protective Equipment
- Evacuation
- Participation in an Emergency Management Committee process to support the Emergency Management Program

Top 3 Training Needs

- Staff and Family Mass Prophylaxis
- Biohazard Infection Control Surge Services during Emergencies
- Shelter for Family of Critical Staff



Training Needs: Police and Security

Performance Excellence

Top 3 Areas of Strength

- Perimeter Management
- Incident Recognition, Activation and Initial Notification
- Internal Communications

Top 3 Training Needs

- Staff and Family mass Prophylaxis
- Biohazard Infection Control Surge Services during Emergencies
- Mass Fatality Management



Training Needs: Emergency Program Managers

Performance Excellence

Top 3 Areas of Strength

- Incident Recognition, Activation and Initial Notification
- Initial Incident Management/Emergency Operations Center
- Administrative activities to ensure the Emergency Management Program meets its mission and objectives

Top 3 Training Needs

- Maintenance of Voice and Data Communication through Satellite link
- Staff and Family Mass Prophylaxis
- Satellite Telephones



Additional Findings

- 75% received education and training on their roles and responsibilities from their facility's Emergency Operations Plan.
- 55% were involved in a disaster or emergency while at work at a VA or with another health care organization. Those who had been involved in an emergency rated a natural hazard (59%) as the top cause of the most significant disaster or emergency faced, followed by man-caused (22%) and technological hazard (20%).



Additional Findings

- Out of the 15% of respondents currently enrolled as members of the VA's Disaster Emergency Medical Personnel System (DEMPS), 7% have been deployed to support Federal recovery efforts in the last 4 years.
- Participants indicated that disaster training is offered twice a year (35%) or once a year (25%). However, 37% of respondents did not know how often disaster training is offered at their facility. Yet 74% of total respondents participate in these trainings and/or exercises offered at their facility.
- The majority (99%) of respondents can access a computer at work for education and training.



Questions?






Review of VHA CEMP Evaluation and Research Agenda

Aram Dobalian, PhD, JD
Maria Claver, PhD, MSW

Acknowledgements

- ▶ Office of Public Health and Environmental Hazards
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 - Geraldine Coyle, RN, EdD, CNAA
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- ▶ VA Greater Los Angeles Healthcare System
 - Darya Friedman, MPH
 - Deborah Riopelle, PhD(c)
 - Tamar Wyte, DPT, MPH
 - Ismelda Canelo, MA




Developing the Agenda

- ▶ Bring together researchers and practitioners to discuss recommendations regarding future VHA Emergency Management research
 - Integrated, comprehensive plan for emergency management program evaluation & research at VHA
 - Research as a foundation for development of services to meet needs of our nation's veterans & the nation during national emergencies




2009 Conference Workgroup Topics

- ▶ Behavioral Health
 - Examples: Mental health; substance use/abuse; psychological first aid; worried well
- ▶ Workforce
 - Examples: Education/training of personnel; DEMPS; competing family concerns
- ▶ Communication & Information Flow
 - Examples: Decision-making; inter-organizational collaboration; risk communication




Workgroup Topics (cont)

- ▶ Sustainability & Resilience
 - Examples: Dual-use systems; community resilience
- ▶ Systems Capabilities
 - Examples: Broad health systems issues, e.g., evacuation, pandemic influenza; methods; inter-organizational collaboration




Workgroup Tasks

- ▶ List, refine & prioritize key issues in topic, both resolved and unresolved
- ▶ Refine top priorities
- ▶ Identify research questions/topics
- ▶ Identify barriers and tools/strategies to overcome them
- ▶ Strategies for implementation/dissemination




Research Gaps/Opportunities

- ▶ Identify gaps based on current evidence
 - Consider needs of VA & veterans
 - Which conditions/diseases should be prioritized?
 - Consider broad health system & populations issues
- ▶ Establish priorities, including consideration of gaps & areas of opportunity
 - Consider high-impact areas
 - Consider best ways to leverage prior research
 - Consider potential areas of innovation v. "saturation" (e.g., do we know enough about surge capacity?)



Research Gaps/Opportunities

- ▶ Consider how you may distinguish VA's emergency management priorities from those of other funders
 - Build on VA's advantages
 - Consider vulnerable populations
- ▶ What is needed to foster VA research?
 - Refine barriers to emergency management research that are specific to your area
 - What types of RFAs, initiatives, and infrastructure support are needed?



Workgroup Process

- ▶ Workgroups met separately
 - Led by pre-selected facilitator with assistance of recorder
- ▶ Workgroup reports to panel (15 minutes/group)
- ▶ Panel comments & large group discussion
- ▶ Work product from workgroups reviewed by experts to ensure priorities were in accordance with VA's Comprehensive Emergency Management Program and accurately reflected current status of VA's work in emergency management



Behavioral Health Workgroup

- ▶ Priorities:
 - Preventing and treating post-disaster development or exacerbation of behavioral health problems among veterans
 - Examining the impact of large-scale emergencies and disasters on behavioral health needs of veterans
 - Identification and evaluation of existing post-disaster mental health interventions among veterans



Workforce Workgroup

- ▶ Priorities:
 - Fair amount of funding devoted to education and training *but*
 - Rigorous research about the effectiveness of training and education programs is lacking
 - Research should differentiate between demonstrating competencies of individuals from systems capacity, which is dependent on infrastructure



Communication & Information Flow Workgroup

- ▶ Priorities:
 - Decision-making process
 - Communication with external audience
 - Crisis communication strategies and management
 - Internal communication, decision-making and information management
 - Communication tools and techniques
 - Media
 - Culture and culture change



Sustainability & Resilience

- ▶ **Priorities:**
 - Emergency management visibility and capability building
 - Community integration
 - Supply chain limitations
 - Especially pharmaceutical caches and hospital bed capacity
 - Staff resilience and other resilience issues
 - Special needs patients



Systems Capabilities

- ▶ **Priorities:**
 - Evacuation and sheltering in place
 - Develop "off-the-shelf" evaluation protocols and surveys for use in the immediate aftermath of an event
 - Developing common standards of practice, looking both nationally across VAs as well as within local community settings
 - Staffing variables to consider when responding to a multi-casualty incident since VAMCs are typically not acute trauma centers
 - Breakdown of communication within a community, in particular when regular communication lines are down
 - Assessing actual volunteer capabilities



Summary

- ▶ VHA provides a unique national laboratory for conduct of high quality research to improve VHA's and our Nation's emergency medical and public health preparedness
 - Consensus was that VHA needs to build program evaluation capacity, increase awareness and visibility of VHA's emergency management research, and build bridges to research partners at agencies with longstanding commitments to advancing emergency management research



Next Steps

- ▶ Reconvene VHA CEMP Evaluation and Research agenda-setting process within 5 years
 - Findings and recommendations based on the current best available data
 - New VA emergency management program evaluation and research will yield rapid advances
 - Translates into a rapidly changing landscape and a new set of knowledge and investigators who should be brought together to reappraise, re-energize, and recommit to next phase of VA emergency management evaluation and research






Overview of VA and VA Research Funding for Non-VA Researchers

Aram Dobalian, PhD, JD

Overview

- ▶ Background on VA, VHA, & Veterans
- ▶ VA Research Funding
 - Investigator Initiated Research proposals
 - Career Development Awards
- ▶ Review of VA and non-VA Databases




U.S. Department of Veterans Affairs

- ▶ Mission:
To fulfill President Lincoln's promise -

**“To care for him who shall have borne
the battle, and for his widow, and his
orphan”**

- by serving and honoring the men and
women who are America's veterans




U.S. Department of Veterans Affairs

- ▶ Department of Veterans Affairs
 - Veterans Health Administration (VHA)
 - Veteran Benefits Administration (VBA)
 - Compensation benefits/vocational assistance to disabled veterans
 - National Cemetery Administration (NCA)




VA Health Care System

- ▶ Health care settings in all 50 states, DC, Puerto Rico, Virgin Islands, Guam, Samoa & Philippines
 - 153 medical centers
 - 783 community-based outpatient clinics
 - 135 nursing homes, 47 residential rehabilitation treatment programs, 108 comprehensive home-care programs
 - 232 Vet Centers
 - Readjustment counseling & outreach services to all veterans who served in combat zone




VA Health Care System

- ▶ FY2010 projected spending: \$112.8 billion
 - VHA: \$48.0 billion
- ▶ About 300,000 employees
- ▶ Provided care to over 5.7 million veterans in 2009
 - More than 750,000 inpatients
 - Over 60 million outpatient visits




Mission #1 of VHA

- ▶ Medical Care
 - Improve health/functioning of veterans
 - Reduce impact & burden of illness, injury, & disability



Mission #2 of VHA

- ▶ Medical Education & Health Professions Training
 - Affiliated with 107 medical schools, 55 dental schools & 1,200+ other schools
 - About 90,000 health professionals trained in VA medical centers annually
 - More than half of physicians practicing in US had some of their professional education in VA



Mission #3 of VHA

- ▶ Research
 - Focus on areas of concern to veterans
 - Basic science, clinical trials, health services research
 - Budget authority: \$442 million for FY 2009



Mission #4 of VHA

- ▶ Emergency Management
 - Preparedness and response actions to ensure continuity of care and operation
 - Support the DoD medical system in wartime
 - Provide medical backup for national emergencies through National Disaster Medical System (NDMS)
 - Federal partners: DHHS, FEMA, DoD
 - Support under National Response Framework
 - Disaster Emergency Medical Personnel System (DEMPS)
 - Database with information on VHA medical personnel who have volunteered to be deployed in the event of a disaster



VHA's Fourth Mission

- ▶ Emergency preparedness budget supports:
 - Pharmaceutical caches, decontamination, personal protective equipment, deployable clinics, Environmental Safety Specialists / Emergency Coordinators, and training needs
- ▶ All major presidentially declared disasters since 1992
 - e.g., Hurricanes Andrew & Katrina, Northridge Earthquake, 9/11 Terrorist Attacks
- ▶ On-site support to high-threat events
 - e.g., Olympics, Inaugurations, Papal Visit, Super Bowl



Characteristics of Veterans

- ▶ Veterans are Americans who have been discharged from military service
 - U.S. citizens, typically English speaking
 - Men and women 18 years old and older
- ▶ About 26 million in U.S. (2000) (13%)
 - Nearly 4% decline since 1990 (1 million deaths)
 - From 10% to 17% of civilian population/state
 - Veterans are diverse group...but...
 - most are White, non-Hispanic married males (average age 58), mostly employed high school graduates

Source: 2001 National Survey of Veterans

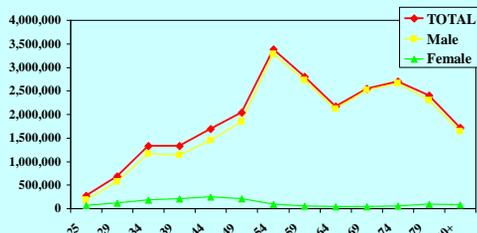


Socioeconomic Characteristics of Veterans

- ▶ Gender:
 - About 93% of veterans are male
 - 49% in general U.S. population
- ▶ Race and ethnicity:
 - White non-Hispanic: 80%
 - African-American non-Hispanic: 11%
 - Latino/Hispanic: 6%
 - Other: 4%



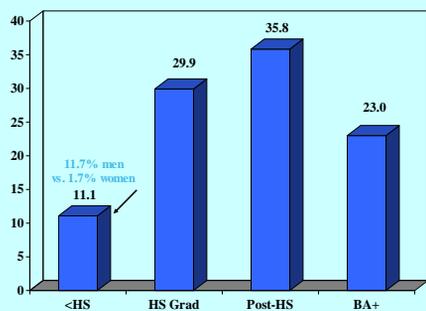
Age Distribution of Veterans (2001)



Total 25,196,000 veterans
Source: 2001 National Survey of Veterans



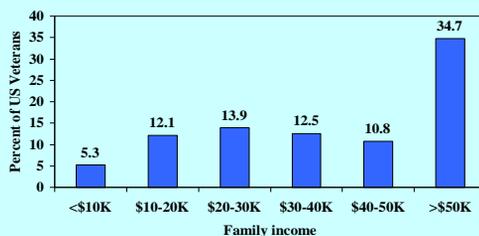
Veterans' Educational Attainment



Source: 2001 National Survey of Veterans



Veterans' Family Income



Source: 2001 National Survey of Veterans



How Do VA Users Compare to Non-Users?

Characteristic	VA User	Non-VA User	General Population
Age 65+	36%	31%	17%
Nonwhite	25%	12%	23%
Not married	36%	19%	39%
<HS education	26%	15%	25%
Income <\$20K	70%	26%	33%
Income <\$10K	28%	9%	15%

Source: Wilson & Kizer, Health Affairs, 1997



Health Status of Veterans

- ▶ General Population of Veterans / VA users
 - Eye or vision problem (56%) → 63-76%
 - High blood pressure (34%) → 40-48%
 - Arthritis or rheumatism (26.8%) → 39-55%
 - Heart trouble (16%) → 20-28%
 - Severe chronic pain (15%) → 27-54%
 - Stomach or digestive disorder (13%) → 19-37%
 - Other ear, nose or throat condition (13%) → 19-28%
 - Diabetes requiring insulin or dietary treatment (11%) → 12-18%
 - Kidney or bladder trouble (10%) → 14-24%

Source: 2001 National Survey of Veterans



Veterans' Special Needs

- ▶ Environmental Exposure
 - Radiation fallout (e.g., nuclear weapons testing)
 - Biological weapon exposure
 - Iatrogenic exposures (e.g., vaccine "cocktails")
 - Agent Orange
 - Gulf War syndrome
 - Infectious disease agents (exotic and tropical)
 - Post-traumatic stress disorder ("shell shock")
 - Chemical weapon exposure
- ▶ Military Trauma/Violence
 - Combat exposure
 - Physical assault and trauma
 - Stress-related illness and injury
 - Emotional trauma
 - Military sexual trauma
 - Transitions back to civilian life



VA Funding for Research

- ▶ Office of Research & Development (ORD)
 - Biomedical Laboratory Research & Development Service
 - Biological or physiological principles in humans or animals
 - e.g., pre-clinical models and investigations of tissues, blood or other biologic specimens from humans
 - Clinical Science Research & Development Service
 - Research focusing on intact human beings as the unit of examination
 - e.g., interventional and effectiveness studies, clinical, epidemiological and technological studies



VA Funding for Research (cont'd)

- ▶ Office of Research & Development
 - Health Services Research & Development Service (HSR&D)
 - Interface of health care systems, patients and health care outcomes
 - e.g., quality, access, patient outcomes and health care costs
 - Rehabilitation Research & Development Service
 - Improving the quality of life of impaired and disabled veterans
 - e.g., technology that gives veterans back functional independence, career opportunities that encourage rehabilitation research education



VA Funding for Program Evaluation

- ▶ Office of Public Health and Environmental Hazards
- ▶ Office of Mental Health Services
- ▶ Other VA Offices
 - Office of Academic Affiliations



HSR&D Priorities

- ▶ Access/Rural Health
- ▶ Care of Complex, Chronic Conditions
- ▶ Equity and Health Disparities
- ▶ Health Services Genomics
- ▶ Healthcare Informatics
- ▶ Implementation and Management Research
- ▶ Long-Term Care and Caregiving
- ▶ Mental Health (PTSD, substance abuse, suicide)
- ▶ Post-Deployment Health (TBI, polytrauma, pain)
- ▶ Research Methodology
- ▶ Women's Health



HSR&D Statistics

- ▶ 2008 Budget: ~\$88 million (HSR&D & QUERI)
- ▶ Investigators: ~600
- ▶ Career development awardees: ~50
- ▶ Active research projects: ~400
- ▶ 14 Centers of Excellence & 13 Research Enhancement Award Programs (REAP)
 - REAP sites support groups of investigators at VA medical centers not affiliated with a COE
 - History of HSR&D research and career development funding



Primary Funding Mechanisms for HSR&D

- ▶ Investigator Initiated Research (IIR)
- ▶ New Pilot Project Program
- ▶ Scientific Merit Review Research Announcements (RFA)
- ▶ Service Directed Projects (SDP)
 - Targeted response to mandates & requests from Congress, federal agencies, the Secretary of VA, HSR&D Service, and other VA health care system managers and administrators
- ▶ Post-doctoral program
- ▶ Career Development Award program



IIRs

- ▶ PIs must have paid VA appointment of at least 5/8 time
- ▶ May request up to four years of funding
 - "Projects that can produce useful findings in a shorter timeframe are encouraged"
- ▶ Funding (direct costs): Projects that exceed \$350,000 in any one year or a total of \$1.1 million will not be accepted without a previous waiver from the HSR&D Director
- ▶ Calendar: Due June 15 and December 15



IIR Applications

- ▶ Introduction for Resubmissions (3 pages max)
- ▶ Research Plan (25 pages max)
 - Specific Aims (1 page recommended)
 - Background (2 pages)
 - Significance (2-3 pages)
 - Research Design & Methods (15 pages)
 - Dissemination &/or Implementation Plan (2 pages)
 - Project Management Plan (2 pages)
- ▶ Human Subjects & Vertebrate Animals
- ▶ Multiple PD/PI Leadership Plan
- ▶ Consortium/Contractual Agreements
 - Consultants limited to \$500 per consultation/ \$2,500 per year
- ▶ VAMC Director's Letter
- ▶ Letters of Support



Submission & Review of IIRs

- ▶ Grants.gov and eRA Commons
- ▶ Notification of intent to submit is required
- ▶ Application Review
 - First: HSR&D Scientific Merit Review Board (SMRB)
 - "Study section"
 - Traiging, summary statements, etc. similar to NIH
 - Second: HSR&D portfolio managers and Director
 - Relevance and responsiveness of study to mission, programs & priorities



HSR&D Pilot Projects

- ▶ Funding cannot exceed \$100,000
- ▶ PIs must have paid VA appointment of at least 5/8 time
- ▶ Application:
 - Table of Contents
 - Narrative research plan (10 page limit)
 - Objectives of proposed work and how it will contribute to the quality, design or conduct of a larger proposal
 - Next steps in planned research (and ultimate anticipated contributions)
 - Expertise of key project personnel and how the project team will complete the work in a timely manner with high quality data
 - Timeline for proposed activity (no more than one year) displayed in a GANTT chart;
 - References
 - Endorsement from the Medical Center Director and ACOS/R&D



HSR&D Career Development Award (CDA) Program

- ▶ Briefly review history of VA CDA program
- ▶ Review purpose, goals and expectations
 - Including distinctions between VA and NIH KS
- ▶ Describe types of CDAs
 - CDA-1, CDA-2, and CDEA (Career Development Enhancement Award)
- ▶ Review eligibility requirements and applicant qualifications



History of VA CDA Program

- ▶ Over 25 year history of funding junior investigators to pursue a VA career
- ▶ Historical emphasis on basic science
- ▶ Emphasis on MDs (PhDs added ~2003)
- ▶ CDAs funded in each Research Service
 - Biomedical/Laboratory, Clinical Sciences, Rehabilitation R&D, and HSR&D



CDA Program Purpose & Goals

- ▶ Designed to attract, develop and retain talented VA investigators
 - May be used to develop local investigators OR to recruit from universities or other agencies
- ▶ HSR&D focus is on capacity building
- ▶ Emphasis is on recent trainees
 - with exception of CDEA, which is mid-career
 - Separate Research Career Scientist (RCS) & Senior RCS awards for mid/senior career
- ▶ Builds the next generation of researchers with mentorship and resources



CDA Program Purpose & Goals

- ▶ Salary-based awards designed to facilitate full or nearly full-time research activities under mentor supervision
- ▶ Activities should lead to expertise in awardee's interest area, manuscript publication, and development and submission of scientific proposals as PI
- ▶ Candidate, mentors, local research and institutional environment under as much review as proposed research



CDA Expectations*

- ▶ Work in area of particular VA importance
- ▶ Candidate envisions a VA-based career
- ▶ Candidate will become "independent"
 - Obtain VA and non-VA funding as PI
 - Publish peer-reviewed papers
 - Eventually mentor other investigators
- ▶ CDA-1s will go on to get CDA-2s (path)
- ▶ An academic life in addition to VA service

* Applicants for all VA CDA types must be U.S. citizens.



VA CDA vs. NIH K Awards

- ▶ Historically, CDAs were 3-year awards while NIH K awards were 5-year awards
 - To better compete with NIH, VA changed program to accommodate 5-year awards
- ▶ Choice of award depends on career plans
 - Is area of interest sufficiently important to VA?
 - VA or university as main academic "home"?
 - But some investigators have been successful at getting K awards at VA
 - And VA funding levels much better than NIH



Types of CD Awards: CDA-1

- ▶ Highly structured mentored research development experience
 - Designed for junior investigators who have not had a research fellowship
 - Could be postdoc alternative (better salary) but harder to get
- ▶ Up to 2 years' salary support
- ▶ Must be 5/8ths VA at time of award and minimum 75% effort on research



CDA-1 Eligibility

- ▶ Must be no more than 2 years beyond completion of training
 - For clinicians → residency, clinical fellowship, etc.
 - For non-clinicians → PhD or equivalent
- ▶ Academic rank cannot be above “Instructor”
- ▶ Not PI on any peer-reviewed, independent research project supported by a national level, public or private organization
- ▶ Demonstrate commitment to HSR
- ▶ Okay to have no published papers yet
 - Goal → 1 or more 1st-authored papers by end of CDA-1



Types of CD Awards: CDA-2

- ▶ Mentored research experience with goal of becoming independently funded VA researcher
- ▶ 3-5 years of salary support
- ▶ Must be 5/8ths VA at time of award
 - Non-clinicians 100% research
 - Clinicians 75% research (25% devoted to clinical care)
- ▶ Request up to \$50K/yr project funding *unless* at COE



CDA-2 Eligibility

- ▶ Must be no more than 5 years beyond completion of training
- ▶ Cannot be above Assistant Professor
- ▶ Should have some research accomplishments but NOT PI on a peer-reviewed independent project funded by national level, public or private organization in excess of \$50K/year
- ▶ Minimum one 1st-authored research publication pertinent to general proposed area of research (e.g., HSR&D)
 - *Reality* is that applicants have many more papers
 - Some exceptions (e.g., critical or emerging topics)



CDA-2 Expected Trajectory

- ▶ All awardees should have submitted a VA merit proposal by the end of the award
 - Review committee expects to see 1-2 planned submissions by end of 5-year award
- ▶ Evidence of productivity
 - Papers (in press or submitted), abstracts, poster and/or oral presentations at national meetings
 - Unspoken expectation that you will NOT take on major service functions (no IRB committee roles, no major teaching commitments)
 - Unspoken expectation that you will generally NOT take on co-investigator roles



What Does Independence Mean?

- ▶ Different things to different people but some things constant:
 - Independently funded as PI on one or more VA and/or non-VA grants
 - 1st-authoring papers in your research area
 - Increasing visibility and service (e.g., SMRB and/or national work groups)
 - Begin mentorship of fellows, others
 - Building research portfolio and later team



What Does Independence Mean?

- ▶ For non-clinicians, “independence” can be more challenging due to funding needs
 - Seeking salary coverage by end of 3-5 years
 - In HSR&D, will require >1 grant
 - HSR&D does NOT fund PI's at 100% (max 30-40%)
 - Hard to manage multiple grants
 - Not advisable to submit >1 grant in any one cycle
 - Need to be strategic without losing independence or focus
 - Selected co-PI or co-I roles, technical consultation projects, build collaborations in area(s) of interest



Types of CD Awards: CDEA

- ▶ To provide opportunity to a very select number of committed, independent VA investigators to learn new research skills or conduct special experiments at unique facility
 - Both clinicians and non-clinicians eligible
- ▶ Max 6 months salary support (non-renewable)
 - Clinicians contingent on matching support from local VA
- ▶ Requires local VAMC approval of “educational leave”
- ▶ Requires Sponsor who will facilitate research program, provide training and consultation
- ▶ 6+ years track record and current PI on non-mentored studies, exceptional productivity



Proposal

- ▶ Career Plan
 - Research background & interests
 - VA service and other involvement
 - Relationship between nominee's interest and proposed mentors
 - Potential impact of the proposed CDA experience
 - Expected results of the experience in terms of the benefit to VA
 - Formal & Informal training
 - Future research plans
- ▶ Research plan
 - Objectives
 - Background
 - Significance
 - Relevance to Veterans Health
 - Work accomplished
 - Work proposed



Funding within HSR&D

- ▶ Funding
 - <http://www.hsrd.research.va.gov/funding/default.cfm>
- ▶ Solicitations for Research Proposals
 - <http://www.research.va.gov/funding/solicitations/#HSRD>
- ▶ VA HSR&D Research Career Development Program
 - <http://www.hsrd.research.va.gov/funding/cdp/>



VA Data, Information Systems & National Databases

- ▶ Overview of VA Databases for Research
- ▶ Policies Governing Researchers' Access to Data
- ▶ Getting Help



Many Sources of VA Data

- ▶ Administrative/operations data
- ▶ Clinical
- ▶ Financial
- ▶ Data from other agencies
- ▶ Veteran Population Surveys



Levels of Data

- ▶ Local Facility Level
 - Information may reside only at local facility
- ▶ VA Network Level: VISN Warehouses
 - Specific to VISN; scope varies
- ▶ Corporate (National) Level
 - Mandate for some local data may include uploading a standardized component to a central location



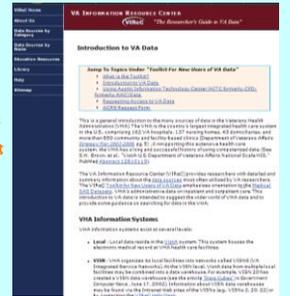
VHA Corporate Databases Monograph

- Produced by VA Office of Information National Data Systems
 - http://vawww.va.gov/NDS/CorporateDatabasesMonograph/Monograph_2008.pdf
 - Includes 106 databases and information systems



Introduction to VA Data

- VA Information Resource Center (VIREC) website:
 - <http://www.virec.research.va.gov/Support/Training-NewUsersToolkit/introToVAData.htm>



VA Databases

- VA Inpatient Data
- VA Outpatient Data
- VA Pharmacy Data
- VA Decision Support System (DSS) National Laboratory Data
 - Integrates expenses, workload & patient utilization
- VA Rehabilitation Data
- Centers for Medicare and Medicaid Services (CMS) Data Acquired by VA
- VA Corporate Data Warehouse (CDW)
- VA Vital Status Dataset



VA Inpatient Data

- General Description:
 - Inpatient services are recorded in the "MedSAS" Inpatient datasets
 - Common dataset structure, generally stable over time
 - Maintained at the Austin Information Technology Center (AITC)
 - The Medical SAS Inpatient Datasets cover four main categories of care:
 - Acute, Extended, Observation, and Non-VA
 - Four datasets within each: Main, Bed Section, Procedure, and Surgery



VA Inpatient Data

- Data element examples
 - Patient demographics
 - Primary/Secondary Diagnosis
 - Length of Stay
 - ICD-9 Procedure and Surgery Codes
- Website/More information:
 - <http://vawww.virec.research.va.gov/References/RUG/RUG-Inpatient06.pdf>
 - <http://vawww.va.gov/nds/>
 - (Access to VAWW websites is limited to computers behind VA firewalls)



VA Outpatient Data

- General Description:
 - Outpatient services recorded in MedSAS Outpatient datasets:
 - Visit datasets files: One day's occasions of service for patient
 - Event datasets: One ambulatory encounter by patient
- Data element examples:
 - Patient identifier (Scrambled SSNs)
 - Patient demographics (Age, date of birth, race, marital status)
 - Date of encounter
 - Means Test Indicator
 - Patient eligibility code
 - Procedure (CPT-4) codes & Diagnoses (ICD-9) codes
 - Type of provider



VA Outpatient Data

- ▶ Website/More information
 - <http://vaww.va.gov/nds/>
 - <http://vaww.virec.research.va.gov/References/RUG/RUG-Outpatient06.pdf>



VA Pharmacy Data

- ▶ General Description:
 - Data on medications dispensed from VA pharmacies
- ▶ Data element examples:
 - Drug name, quantity, days supply, dispensing date, costs
- ▶ Website/More information
 - Pharmacy Benefits Management (PBM): www.pbm.va.gov
 - DSS: <http://vaww.dss.med.va.gov/>



VA DSS National Laboratory Data

- ▶ General Description:
 - VHA Decision Support System (DSS) is designated Managerial Cost Accounting (MCA) System of VA
 - Includes Four DSS Clinical National Data Extracts (NDE)
 - Lab (utilization and costs)
 - Lab Results
 - Pharmacy—Prescription Data
 - Radiology



VA DSS National Laboratory Data

- ▶ Data Element Examples:
 - Actual Total Cost
 - Laboratory fixed direct, variable direct, & indirect costs
 - Dates
 - Ordering provider
 - Laboratory test results
- ▶ Website/More information
 - <http://vaww.dss.med.va.gov/>



VA DSS National Laboratory Data

- ▶ Lab test examples:
 - Total Cholesterol
 - Hemoglobin
 - Hemoglobin A1c
 - HIV Viral Load
 - Arterial blood gases
 - Post dialysis levels
 - Some drug levels (Lithium, Theophylline)



VA Rehabilitation Data: FSOD

- ▶ General Description:
 - Functional Status Outcomes Database (FSOD) includes inpatient rehab events
 - Housed at the AITC in Austin TX
- ▶ Data Element Examples:
 - Demographic information and evaluations using Functional Independence Measure (FIM)
 - Rehabilitative services
 - Treatment location
 - Bed section variable
 - ICD-9 procedure codes
 - Diagnostic fields



VA Rehabilitation Data

- ▶ Website/More information:
 - <http://vaww1.va.gov/rehab4veterans/page.cfm?pg=12>



CMS Data Acquired by VA

- ▶ General Description:
 - CMS data are available about veterans who are enrolled in, eligible for, or have used VHA care
 - Select non-veteran data are also available
- ▶ Data Available Include:
 - Medicare Enrollment and Claims Data
 - Medicaid
 - Medicare Current Beneficiary Survey (MCBS)
 - U.S. Renal Data System (USRDS)
 - Long-Term Care Minimum Data Set (MDS)
 - Home Health Outcome & Assessment Information Set (OASIS)



CMS Data Acquired by VA (cont)

- ▶ Data Element Examples:
 - Demographics
 - Admission and discharge dates
 - Diagnosis and procedure codes
 - Billing data
- ▶ Status
 - Since January 2007, VIREC has been working closely with CMS, ADUSH-PP, Office of Privacy Compliance Assurance, OGC, ORD, and a Research Advisory Board (RAB) to resume distribution of CMS data for research
 - VIREC is currently unable to process requests for CMS data
 - Currently, VA researchers cannot obtain CMS data directly from CMS
- ▶ Website/More information
 - www.virec.research.va.gov



VA Corporate Data Warehouse (CDW)

- ▶ General Description:
 - National repository
 - Data from several VA clinical and administrative systems into one standard database structure
- ▶ Data Element Examples:
 - Patient and Staff demographics
 - Prosthetics
 - Outpatient encounters
 - All ICD-9 and CPT Codes
 - Vital Signs
- ▶ Website/Where to go to find more information:
 - <http://vhacdwa09.vha.med.va.gov:8080/>



VA Vital Status

- ▶ General Description:
 - Provides multiple sources of mortality information.
 - Contains one record for every SCRSSN-DOB-gender combination found in VA utilization, enrollment and compensation and pension files
 - Sources include BIRLS death file, SSA death master file, PTF file, and Medicare Vital Status
- ▶ Data element examples:
 - date of death, date of birth, gender, veteran status



VA Vital Status

- ▶ Website/More information
 - **Access information:**
<http://vaww.va.gov/NDS/DataAccess/VitalStatus.asp>
 - **Documentation:**
<http://www.virec.research.va.gov/DataSourcesName/VitalStatus/VitalStatus.htm>



Who Can Use VA Data For Research?

- › Employment status
- › Purpose
- › Ownership/Management/Authorizations
- › Physical Location/Format
- › Sensitivity of Information



Requirements for Research Data Access are Multi-Departmental

- › VHA Office of Research and Development (ORD)
- › VHA Privacy Office
 - Reviews request packet re: HIPAA and Privacy Act requirements
- › VHA Security Liaison Office
 - Reviews Data Use Agreements for technical details
- › VA OI&T, Information Security Officer
 - Reviews for technical data transfer/storage
- › VHA Local Management
 - Director, VISN Director, etc.
- › Data Custodian
 - Examples: VIREC, Local



Policies governing researchers access to data

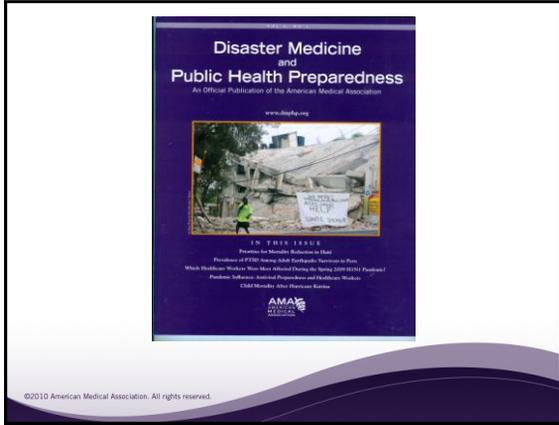
- › VHA Handbook 1200.12 (March 9, 2009)
 - Use of Data and Data Repositories in VHA Research
 - http://www1.va.gov/vhapublications/ViewPublication.asp?pub_ID=1851



Getting Help

- › VIREC Help Desk
 - <http://www.virec.research.va.gov>
 - Research User Guides (RUG)
 - Variable-level information about VA databases
 - Technical Reports
 - Web-site "Toolkit for New Users of VA Data"
 - Monthly Data Issue Briefs
 - virec@va.gov





The slide features the AMAA logo at the top right. The title is 'Disaster Medicine and Public Health Preparedness' in a large, bold, italicized font. Below the title is '2009 Editorial Operations Review' and the author's name 'James J James, MD, DrPH, MHA'.

Average Number of Days Between Receipt of Manuscript and Date of First Decision		
2007	2008	2009
32 days	38 days	53 days

Acceptance Rate of Unsolicited Manuscripts		
2007	2008	2009
33%	31%	20%

Total Number of Reviewers		
2007	2008	2009
105	218	343

Total Submissions by Type						
Type	2007		2008		2009	
Original Research	51	35%	70	44%	89	50%
Review Article	7	5%	14	9%	21	12%
Editorial	45	31%	9	6%	25	14%
Special Topics	28	19%	31	20%	20	11%
Concepts in Disaster Medicine	10	7%	23	14%	5	3%
Commentary	4	3%	8	5%	11	6%
Letter to Editor	0	0%	3	2%	7	4%
TOTAL	145		158		178	

Meet the Editors

Jane Kushma, PhD

VHA CEM Program
Evaluation and Research
Conference
May 2010
Baltimore, MD

JHSEM Profile

- History
- Profile
- Statistics

History

- Founded in 2003 by John Harrald and Claire Rubin
- Published by The Berkeley Electronic Press
- Serving a diverse audience in homeland security and emergency management.

Profile

- Now in its 8th year of publication
- Content includes research articles, book reviews, opinions, and news/communication.
- 16-person editorial board – internationally known scholars and practitioners
- Editorial team – executive editor, managing editor, book review editor, four assistant editors, business manager, copyeditor

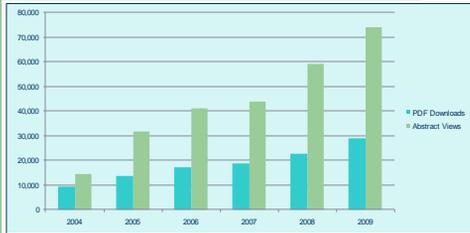
Profile (cont.)

- 225-person reviewer database
- Tracked by 10 indexing services
- ISI Ranking (2008) – ranks #17 out of 28 journals in the category of public administration, with an impact factor of 0.608.
- Text is crawled and indexed by Google and Google Scholar.
- New Facebook presence

Selected statistics

- Reaches more than 100,000 scholars and practitioners
- More than 80,000 receive email notifications of newly published content
- Over 661 major institutions subscribe worldwide and 94,000 individual subscribers
- 80 articles downloaded each day
- Manuscripts processed in about 40 days

JHSEM Downloads



Research Article Overview (2008)

- Homeland security themes dominated.
- Practice considerations overshadowed policy and theory.
- Topics related to preparedness and response were more popular than prevention/mitigation and recovery.
- JHSEM mirrors broader policy and practice environments.

Book Review Overview (2008)

- For the past two years, roughly 1/3 of books dealt with homeland security.
- Most of the books provided general explanatory information; the # of books in this category has gradually increased.
- There were fewer event-specific books than anticipated.
- Some coverage of components of terrorism, e.g., bio and agroterrorism

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Journal of Homeland Security and Emergency Management

Jane Kushma, Managing Editor
jkushma@jsu.edu

<http://www.bepress.com/jhsem/>

Understanding Readiness of the VHA Health Care System

Part 3: The 2007-2010 Emergency Management Capability Assessment Program

Hillary Kleiner, MPH
Beth Neiley, RN, MS



Session Objectives

- Describe the design, implementation, scoring and analysis of the 2007-2010 on-site assessments of VA Medical Center and Network Office preparedness.
- Identify and discuss findings and recommendations from this study.
- Identify and discuss findings related to the 2005 and 2009 surveys.



Are we ready?

How do you find out?



Key Terms

- Summative evaluation – is conducted for accountability - providing a “grade.”
- Formative evaluation – is conducted for providing feedback for positive change.
- Emergency management program – an assessment of the day-to-day activities necessary for an effective program.
- Emergency operations – an assessment of readiness of procedures, training, personnel, equipment and supplies.



Terminology

- The Department of Homeland Security defines “preparedness” as the existence of plans, procedures, policies, training, and equipment necessary at the Federal, State, and local level to maximize the ability to prevent, respond to, and recover from major events. The term “readiness” is used interchangeably with preparedness.
- The Joint Commission and VHA use a “comprehensive emergency management” approach where preparedness is one phase within a cycle that includes mitigation, preparedness, response, and recovery activities.



Development Process

- The Veterans Health Administration (VHA) Capability Assessment Program (CAP) was developed over a six month period, involving approximately 100 subject matter experts from VHA, other Federal agencies, and the private sector.
- The design of the CAP methodology took advantage of past and current practices, and used two pilot sites to refine the approach.



Organizational Priorities

- Occupant safety is the primary initial and on-going concern, followed by continuity of service delivery and business functions.
- If conditions allow, the organization will try to expand service delivery (surge) and support its partners, the community and/or the Nation.
- An incident management system is used to coordinate these activities.
- The operational readiness of these capabilities are developed on a day-to-day basis through a deliberate planning process.



Resultant Capability Framework

- Program level
 - Mitigation and preparedness activities
- Emergency operations level
 - Incident management activities
 - Occupant safety activities
 - Resiliency/continuity of operations activities
 - Medical surge capacity/capability activities
 - External support activities



Design Challenges

- The challenge of the design process included:
 - How to maximize the learning potential of such an assessment, while at the same time, balancing the need to provide an objective appraisal of the operational readiness?
 - How to integrate all of the various requirements into this formative assessment process?



EM-related Regulations, Standards & Internal Requirements

- OSHA / EPA
- EMTALA
- HIPAA
- Joint Commission
- DHS
 - NIMS
 - COOP
- NFPA
- VHA
- Occupant Safety
- Continuity of Patient Care & Access
 - Decon
 - Rx Cache
 - Communications
- Support to Community & Nation
 - Patient Reception (VA-DoD, NDMS)
 - ESF 8



Design

- The methodology includes a pre-survey (self report); a defined set of capabilities; and, a four day on-site, independent third-party assessment process that uses document review, interview, observation, and capability demonstration methods.
- The assessment team blends key disciplines (hospital administration, clinical, technical, and emergency management expertise) and uses a standardized site visit agenda, interview questions, and scoring tool.



Implementation

- In February 2007, pilots of VAMC protocol were conducted at the Miami, Florida and San Francisco, California VAMCs. The VISN office protocol was piloted at three sites (VISN 8, Bay Pines, Florida; VISN 16, Jackson, Mississippi; and VISN 22, Los Angeles, California).



Scoring

- For each session in the site visit agenda, there is a lead assessor who conducts the interviews, capability demonstrations, and table top exercises. At least one other assessor is present and both individuals record their notes from the discussions.
- Scoring is based on a 5 point Likert scale. At the conclusion of the onsite visit, the team leader presents an interim report and conducts an exit briefing with VAMC or VISN leadership and key staff. Within 30 days, a detailed final report is provided to VHA Central Office, VISN, and the VAMC Director.



Analysis

- Data collected from these assessments was analyzed using SPSS for Windows, Release 12.0. In addition to descriptive analysis, averages (means and standard deviations) were used to describe overall results from the individual facility assessments.



2008 Leading Indicators of Preparedness

- In October 2008, two expert panels were assembled with the goal of identifying indicators of readiness from the set of 69 program- and emergency operations-level capabilities.
- The panels included hospital administrators; an emergency room physician; nurses; general and biomedical engineers; an epidemiologist; and two emergency managers. One panel included non VA staff and the other was exclusively VA staff
- All members had field experience applying the VAMC protocol on at least two site visits.
- *All eight "leading indicators of preparedness" appeared in both those lists.*



Leading indicators of preparedness

- All eight leading indicators of preparedness identified in the 2005 study were matched with an appropriate capability(ies) from the 2008 study.
- These eight "associated capabilities" are used in this report as key indicators of general preparedness and are found bolded and underlined in the following slide.



Strengths

- Fire Protection and Rescue Services for Response to Incidents
- Development, Implementation, Management, and Maintenance of an Electrical Power System
- Management of Care for Home-Based Primary Care Patients during Incidents
- Interoperable Communications with VAMC Facilities'
- Maintaining Fuel, Fuel Storage, and Fuel Pumps for Generators, Heating, and Vehicles Resiliency
- **Response/Interface with State and Community Emergency Management Authorities and State and Local Public Health**
- **Response/Interface with Community Healthcare Organizations**
- Maintaining Authorized Leadership (Leadership Succession)
- Public Information Management Services during an Incident
- Maintaining Information Technology and Computing Resiliency



Opportunities for Improvement

- Processes and Procedures for Sheltering Family of Critical Staff
- Transporting Critical Staff to the Facility During an Emergency
- Processes and Procedures for a Return to Readiness of Staff and Equipment
- Processes and Procedures for Sheltering-in-Place
- Processes and Procedures for Demobilization of Personnel and Equipment
- Processes and Procedures for Managing a Hazardous Substance Incident
- Incorporation of Accepted Improvement Recommendations into the Emergency Management Program and its Components such that the process becomes one of a Learning Organization
- **Incorporation of Comprehensive Instructional Activity into the Preparedness Activities of the Facility's Emergency Management Program**
- Processes and Procedures for Staff and Family Mass Prophylaxis During an Infectious Outbreak (i.e., Influenza)
- **Demonstration of Systems-Based Evaluation of the Facility's Overall Emergency Management Program and its Emergency Operations Plan**



Conclusions

- Knowledge of the key indicators of preparedness will help inform program enhancements, resource allocation decisions, and future research efforts.
- Study results are being used by individual VAMCs to improve preparedness by enhancing capabilities identified in the site visit.
- VISNs are also using the collective findings to improve regional operations across the facilities in their VISN.
- Aggregated findings from the surveys are being used to develop a national emergency management strategic plan, budget, education, training, and performance improvement program.



Learning Needs

Program Level Capabilities

- Incorporation of Continuity Planning into the Activities of the Facility's Emergency Management Program to ensure Organizational Continuity and Resiliency of Mission Critical Functions, Processes, and Systems
- Development, Implementation, Management, and Maintenance of an Emergency Operations Plan
- Incorporation of a Range of Exercise Types that Test the Facility's Emergency Management Program.

Incident Management Capabilities

- Mobilization of Critical Staff and Equipment for Incident Response
- Public Information Management Services during an Incident
- Processes and Procedures for Demobilization of Personnel and Equipment



Occupant Safety Capabilities

- Processes and Procedures for Sheltering-in-Place
- Processes and Procedures for Sheltering Family of Critical Staff
- Biohazard (Infection) Control Surge Services during Emergencies
- Processes and Procedures for Staff and Family Mass Prophylaxis during an Infectious Outbreak (i.e., Influenza)
- Fire Protection and Rescue Services for Response to Incidents

Resiliency/Continuity of Operations

- Maintaining Sewage and Waste Resiliency
- Maintaining Medical Gases and Vacuum Resiliency
- Maintaining Information Technology and Computing Resiliency
- Maintaining Access to Critical Commodities and Services during Response and Recovery Operations
- Internal and External (to the VA) Alternate Care Sites
- Maintenance of Voice and Data Communication through Satellite Link
- Maintaining Satellite Telephone Resiliency
- Interoperable Communications with External Agencies



Medical Surge

- Management of External Volunteers and Donations during Emergencies
- Management of Volunteers Deployment Support (e.g., DEMPS) during Response and Recovery Operations
- Development, Implementation, Management, and Maintenance of the VA All-Hazards Emergency Cache
- Designated Capability for Expanded Patient Triage, Evaluation and Treatment during Surge
- Integration of Patient Reception, Surge and Decontamination Teams
- Maintaining Laboratory, Blood Bank, and Diagnostic Imaging Surge Capability
- Processes and Procedures for Control and Coordination of Mass Fatality Management

Support to External Requirements

- Provision of Supplemental Health Services to Support the National Disaster Medical System
- VA/DOD Contingency Hospital System
- Response/Interface with Community Healthcare Organizations
- Support under the National Response Framework



Summary

- No comparable, national-level data on the status of preparedness of non-Federal U.S. hospitals. The 2004 and 2008 studies conducted by the Department of Veterans Affairs provide insight into the level of readiness of 173 Veterans Health Administration medical facilities and 21 Veterans Integrated Service Networks (VISNs).



Summary

- "Organizational learning" is a systems-based process for assessing proposed changes to the system, and incorporating accepted proposals to effect lasting change in system performance. This is accomplished through alteration to system structure, process, competencies, facilities, equipment, supplies and other parameters.

Barbera, Macintyre



Summary

- Use of clear performance objectives, provision of financial incentives, coupled with provision of expertise and guidance will create an environment conducive to VAMCs, VISN Offices and VHA Central Office engaging in comprehensive emergency management activities to achieve organizational priorities of occupant safety, continuity/resiliency, medical surge and support to their community and the Nation.



Questions?



Greg Watts, BS
Kenneth Wheeler, MS
Darlene Weisman, MS

VA EMERGENCY MANAGEMENT EMSHG's LEADERSHIP ROLE



VHA Missions



1. **Medical Care for Veterans – Primary Mission**
2. **Teaching**
3. **Research**
4. **Emergency Management**
 - The Emergency Management Strategic Healthcare Group (EMSHG) is executive agent for 4th mission



VHA EMSHG *Emergency Management Mission*



EMSHG provides Comprehensive Emergency Management services to the Department of Veterans Affairs. This includes overseeing the coordination of **medical back-up to the Department of Defense** and assisting the public via the **National Disaster Medical System** and the **National Response Framework**

EMSHG Reorganization To Regions

Goal:

To enhance VA's partnerships and role in Regional planning, training, exercising and operations under the National Response Framework (NRF).

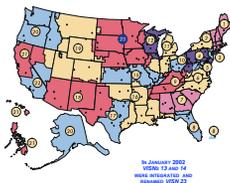
- The Regions were established in July 2008.
- **11** Regional Emergency Managers (**REMs**)
 - 10 Regions that correspond with the FEMA Regions and the National Capital Region.

Organization Presents Challenges in Coordination

10 FEMA Federal
Regions



21 Veterans Integrated
Service Networks
(VISNs)



Support to DoD Required by Public Law 97-174

- VA is the primary backup to the Military Healthcare System (MHS) during war or other emergencies. VA plan provides:
 - **Primary Receiving Centers (PRCs)**
 - Secondary Support Centers
 - Installation Support Centers
- EMSHG Area Emergency Managers (**AEMs**): coordinate with VISNs and VAMCs to develop overall plans, VA bed availability and exercises capabilities.

Acronyms

Chronological Use in Presentation

- **VA** – Department of Veterans Affairs
- **DOD** – Department of Defense
- **HHS** – Department of Health and Human Services
- **DHS** – Department of Homeland Security
- **FEMA** – Federal Emergency Management Agency
- **FCC** – Federal Coordinating Center
- **MOA** – Memorandum of Agreement
- **ESF** – Emergency Support Functions

Acronyms

Chronological Use in Presentation - Continued

- **MERRT** – Medical Emergency Radiological Response Team
- **EO** – Executive Order
- **JFO** – Joint Field Office
- **SOC** – Operations Center
- **IRCT** – Incident Response Coordination Team
- **EOC** – Emergency Operations Center
- **RSU** – Response Support Unit

National Disaster Medical System (NDMS)

- VA, DOD, HHS, DHS, FEMA
- Medical Response (DMATs and other teams)
- Evacuation (DOD Airlift)
- Patient Reception
- Definitive Care – Coordinated by DOD and VA medical facilities that are designated as Federal Coordination Centers.
- EMT/Paramedics have primary responsibility in the assigned VA FCCs for coordination and planning of NDMS with the private sector.

Federal Coordinating Center (FCC)

- A VA or DOD medical treatment facility responsible for the day-to-day coordination of planning and operations in one or more geographic NDMS Patient Reception Areas.
- Local hospitals volunteer to participate and sign NDMS MOA with the FCC in their Area of Responsibility.
- Patient Reception Teams (PRT) established at local civilian or military airfields.



Reorganization of Patient Reception Areas

- In 2009, DOD and VA reorganized patient reception sites for VA/DOD and NDMS.
- Primary Receiving Centers for both VA/DOD and NDMS combined and New List of Federal Coordination Centers developed.
- Reception of DOD Patients operations similar to patient reception operations for NDMS FCC.
- Some new FCC established and some FCCs transferred between DOD and VA with more transfers to VA.



National Response Framework

- VA may be tasked for:
 - **Health and Medical – ESF - 8**
 - Resource Support (purchasing Health and Medical equipment and supplies)
 - Mass Care and Sheltering – **ESF - 6**
 - Engineering Services



ESF- 8: Health and Medical Services

Lead Federal Agency

HHS

Support Agencies

USDA, DOD, DOE, DOJ, DOT, VA, AID, ARC, EPA, FEMA, GSA, NCS, and USPS

Mission

Coordinate Federal assistance to supplement State and local resources in response to public *Health and Medical* care needs following a major disaster or emergency



Radiological Emergencies



- **MERTT** Required under **EO 12657**
- Deployable in response to an accidental or deliberate release of radiation that requires a medical response. MERTT does not deploy as a "first responder" but does so as part of the Federal Radiological Emergency Response Plan (FRERP), NRF, or other authorized Federal response.
- Assist the local medical community and healthcare providers in addressing issues that arise from the discovery of radiation beyond normal background levels.
- Provide expertise in the handling of exposed and contaminated casualties and internal support to VA entities.



Continuity of Operations (COOP)

- EO 12656; PDD 67
- EMSHG responsible for VHA specific COOP planning including development, equipping, and support of primary VHA COOP site.
- Director of EMSHG Plans is designated as the VHA Emergency Planner.



Types of Deployments



- All major presidentially declared disasters
 - e.g., Hurricanes (Andrew, Floyd, George, Katrina, Rita), Northridge Earthquake, 9/11 Terrorist Attacks, Northwest Floods
- On-site support to high-threat events
 - e.g., NATO 50, Olympics, Super Bowl, Inauguration, Papal Visit



EMSHG Cadres Support Deployment Activities

- 5 Cadres that rotate (one Cadre up each month).
- Regional Emergency Managers are leads.
- Every AEM assigned to a Cadre.
- "Go Teams" (one Team up each week) - are ready to deploy within 24 hours.



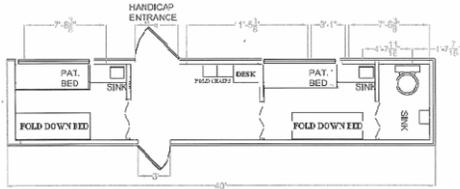
Deployment Roles

- Every REM and AEM is deployable
- Can go to the field, HQ in Martinsburg, or DC
- Can be deployed out of cadre sequence
- Can support VA or other Federal or state organization
 - JFO
 - HHS SOC
 - HHS IRCT
 - State EOC



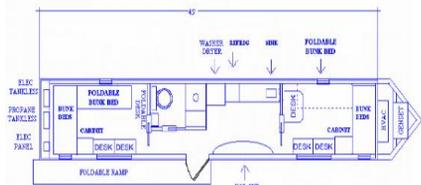
Deployable Medical Unit (DMU)

- 40x8-ft towed outpatient care trailer
- Wheelchair accessible (ramp and hydraulic)
- 2 exam rooms, waiting/triage area, bathroom



Emergency Housing Unit (EHU)

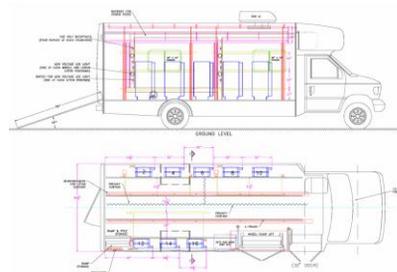
- 40x8-ft towed housing trailer
- Sleeps 10 (5 each room), with central kitchenette, laundry, and bathroom
- Four voice/data jacks



Dual Use Vehicle - Shuttle



Dual Use Vehicle Shuttle Design



Dual Use Vehicle Large Bus



Dual Use Vehicle Interior Large Bus



Practical Application Issues

- Communications & Interoperability
- Managing information overload
- What is important and accurate - What to pass on and in what format?
- Systems/Assets familiarity of all staff
- IT security
- What really works?
- Mobility, Reliability and Maintenance
- Systems/Assets familiarity of all staff...
- Design usable in fields conditions - Take into account staff/user needs and limitations
- Costs - \$\$\$\$\$\$\$
- Maintenance needs
- How mobile is mobile?

Questions???

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U.S. Department of Transportation
Office of the Secretary

Janet K. Benini



National Transportation
Disaster Recovery Strategy: How to Help Your Community Bounce Back

**Recovering from Disasters:
The National Transportation
Recovery Strategy**

Presentation for
VHA Comprehensive Emergency Management
Evaluation and Research Conference
May, 2010



Why

Are we hearing about a transportation recovery plan at a VA Hospital emergency management meeting?

- A. The other speaker cancelled
- B. She was hungry and they told her she could have lunch if she'd do a short presentation
- C. Nobody listens to the speaker right after lunch anyway
- D. Maybe something they learned from developing the transportation recovery plan could help us



Goal

Promote a recovery process for transportation networks – and subsequently of communities overall – that results in a greater level of resilience.

Transportation recovery is a key to community recovery. So is recovery of the health care system.

We need to work together!



Disaster Recovery Planning

- Most disaster planning has focused on immediate response (the CNN phase)
- Recovery planning is a relatively new



Phase One

Strategic Guidance Document : customized access

Completed: www.dot.gov/disaster_recovery

- ✓ Relationship of transportation recovery with overall community recovery
- ✓ Local/state/tribal/Federal roles
- ✓ Federal system and funding programs available
- ✓ Comprehensive resource website



Phase Two

- Guide on leveraging funding sources to best advantage (*Volpe National Transportation Systems Center, under way*)
- “Pre-Planned Recovery and Accepted Practices for Replacement of Transportation Infrastructure “ (*Transportation Research Board, under way*)



Move Toward Resiliency

- Alternate routes and methods of travel
 - Secondary roads vs highway interchanges
 - Fourth of July exit plan in Washington, DC
 - Public transportation vs private cars
 - Bus bridge following Hurricane Katrina
 - Ferries when bridges were damaged in California earthquakes



Move Toward Resiliency

- Building to a superior standard
 - Improving materials and construction methods
 - Using Intelligent Transportation Systems technologies
- Improving transportation links in community
 - Recognizing change in community from before disaster
 - Recognizing change in community due to disaster
 - Encouraging "smart growth" patterns through transportation options



Preparedness for Recovery

- Develop Business Impact Analysis
- Develop Continuity of Operations Plan
- Enter into Mutual Aid Agreements
- Coordinate with government and industry stakeholders
- Improve materials and construction methods
- Evaluate insurance coverage



During the Response Phase

- Begin damage assessments right away
- Sort recovery issues into short-, mid-, and long-term issues
- Begin addressing short-term issues during response
- Work with responders on transition to recovery



Recovery Phase

- Complete damage assessments
- Identify and provide critical resources as necessary
- Provide subject-matter expertise in support of community
- Implement improved materials and construction methods
- Provide personal protective equipment (PPE) to employees as necessary



Federal Responsibilities

- Provide regulatory relief
- Offer Federal funding and grants
- Resume and restore trade across jurisdictional boundaries
- Coordinate with international stakeholders
- Set priorities for national security
- Offer planning and technical advice



Next Steps

- White House disaster recovery effort under way – looking at Federal authorities
- FEMA-led disaster recovery effort to develop a National Disaster Recovery Framework, similar to the National Response Framework



Thoughts for You

- What can we do now to make our health care SYSTEMS (not just structures) more resilient?
- How do we connect in our communities to the local emergency management system and structure?



In a Recent Study of EMS Professionals

- 12% indicated they would not voluntarily report to duty in a pandemic influenza emergency if asked, 7% if required.
- A majority (52%) indicated their unwillingness to report to work if risk of disease transmission to family existed. Confidence in personal safety at work and a high threat/high efficacy (“concerned and confident”) profile distinguished those who were more likely to voluntarily report to duty.
- Although 96% of EMS workers indicated that they would probably or definitely report to work if they were guaranteed a pandemic influenza vaccine, only 59% had received an influenza immunization in the preceding 12 months. *

Gauging U.S. Emergency Medical Services Workers’ Willingness to Respond to Pandemic Influenza Using a Threat- and Efficacy-Based Assessment Framework. Daniel J. Barnett1,2, Roger Levine3, Carol B. Thompson4, Gamunu U. Wijetunge5, Anthony L. Oliver5,6, Melissa A. Bentley7, Patrick D. Neubert5,6, Ronald G. Pirrali8,9, Jonathan M. Links1,2, Ran D. Balcer, www.plosone.org, March, 2010



Personal Thought for You

What plans have I made with my family so I am able to perform my professional responsibilities when disasters strike?

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Informing a VA National Research Agenda on Emergency Management

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- ▶ Roberta Shanman, MLS²
- ▶ Anita Szafran, MLS²

1. **VAGLAHS: Sepulveda HSR&D Center for the Study of Healthcare Provider Behavior**
2. **RAND: The Southern California Evidence-Based Practice Center**




Background

- ▶ Preliminary results reported at this conference last year (May 2009)
- ▶ VA expanded role in emergency management
- ▶ VA emergency management research support does not reflect expanded VA role




Background

- ▶ Gap: Suggests need for comprehensive research agenda spanning spectrum of research sponsored by VA
- ▶ Initial Step: Systematically review literature on VA emergency management research




Research Goals

- ▶ Identify & characterize a subset of emergency management literature related to VA and veterans
 - Identify areas covered in published literature on this topic
 - Identify potential gaps in knowledge related to emergency management
- ▶ Gain insight into potential priorities for future emergency management research in VA




Research Question #1 (of 3)

- ▶ 1: What is the role of VA in emergency management, including mitigation, preparedness, response & recovery?




Four Phases of Emergency Management

- ▶ Mitigation: Prevent hazards from becoming disasters or reduce effects of disaster
- ▶ Preparedness: Develop plan of action for when disaster strikes
- ▶ Response: Mobilize necessary emergency services and first responders in disaster area
- ▶ Recovery: Restore affected area to previous state



Research Question #2

- ▶ 2: For each of the identified VA emergency management activities, what recommendations (“lessons learned”) were made to improve the activity around mitigation, preparedness, response & recovery?



Research Question #3

- ▶ 3. What veteran health needs have been identified as important in emergency management?



Research Design

- ▶ Step 1: RAND search for relevant emergency management articles in appropriate databases
 - Search terms
 - VA or *veterans* in title, abstract, key words
 - Publication dates: 1982–2009



Methods: Databases

Pubmed	Psycinfo
Worldcat	Periodicals Abstracts
News Abstracts	Congressional Universe
Public Affairs Index	PAIS
Social Work Abstracts	SocINDEX
Social Sciences Abstracts	Government Printing Office
Government Accountability Office	NTIS
DTIC	Congressional Research Service



Methods: Sample Search Terms

- ▶ Disaster OR disasters OR emergency preparedness OR civil defense OR terrorism* OR bioterror*
- ▶ VA OR veterans administration OR veterans affairs OR veterans AND...
- ▶ hurricane* OR cyclone* OR earthquake* OR tornado* OR flood* OR pandemic* OR epidemic* OR anthrax OR smallpox OR sarin OR ricin OR SARS OR air disaster* OR tsunami OR blizzard* OR rail disaster* OR landslide*



Research Design

- ▶ Step 2: Preliminary screening for inclusion based on the title or abstract
 - “clearly relevant”
 - “possibly relevant”
 - “clearly irrelevant”
- ▶ Step 3: Pull full articles for “clearly relevant” and “possibly relevant” sources

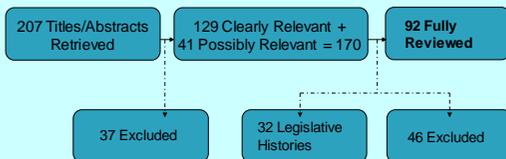


Systematic Review Screener

- ▶ Step 4: Systematic review of full articles using data abstraction form developed for the study
 - Inclusion criteria (as a final check)
 - Discusses emergency management
 - Discusses services directly provided by VA or contracted by VA
 - Study design
 - Methodology
 - Role of VA emergency management
 - VA activities
 - VA lessons learned
 - Veteran health needs



Results



Results: Frequency by Study Design

Article Type	N
Quasi-Experimental/Observational	25
Newspaper Article/Lay Magazine	24
Case Study/Descriptive	23
Commentary/Editorial	9
Policy Brief/Legislative Report	7
Other (e.g., training manuals, brochures)	4
Literature Review/Meta-Analysis	0
Experimental/Randomized Clinical Trial	0
TOTAL	92



Results: Frequency by Methodology

Methodology	N
Quantitative	10
Qualitative	75
Mixed Methodology	7



Results: Role of VA Emergency Management

Role of VA	N
Mitigation/Prevention	17
Preparedness	56
Response	37
Recovery	26



Results: Activities & Lessons Learned

	N Activities	N Lessons
Community Collaboration/Resource Sharing	46	10
Providing Personnel	28	7
Providing Beds/Buildings	27	9
Education/Training: Staff	26	8
Pharmaceuticals	26	14

Note – Multiple activities may apply to a given article



VA HSR&D Center for the Study of Healthcare Provider Behavior

Results: Activities & Lessons Learned

	N Activities	N Lessons
Medical Supplies (including DME)	24	10
Medical Records/EMR	21	13
Continuity of Care	18	9
Transportation	16	7
Communication: Systems	15	11

Note – Multiple activities may apply to a given article



VA HSR&D Center for the Study of Healthcare Provider Behavior

Results: Veteran Health Needs Related to Disaster

	N
PTSD	25
Schizophrenia	8
Depression	7
Unspecified Substance Use or Abuse	7
Other Trauma (not including burns, polytrauma, spinal cord injury, traumatic brain injury)	5

Note – Multiple activities may apply to a given article



VA HSR&D Center for the Study of Healthcare Provider Behavior

Topics for Further Examination

- ▶ Overview of most frequently occurring topics in each category
 - Community Collaboration
 - Education/Training: Staff
 - Communication: Systems
 - PTSD

Community Collaboration

- ▶ 46 mentions
 - No experimental studies
 - 9 quasi-experimental studies
 - 17 descriptive studies
 - 17 commentaries/newspaper articles
 - 2 other (brochures)



VA HSR&D Center for the Study of Healthcare Provider Behavior

Community Collaboration

- ▶ Description of VA as member of NDMS
 - Can VA legally participate?
 - Role will increase as military healthcare system devolves



VA HSR&D Center for the Study of Healthcare Provider Behavior

Community Collaboration

- ▶ VA participation in specific emergencies
 - Hurricane Katrina, New Orleans, LA
 - Winter Storm, Denver, CO
 - Walter Reed Military Hospital
 - Tropical Storm Allison, TX
 - Northridge Earthquake, CA



Community Collaboration

- ▶ Preparedness
 - Bioterrorism
 - Pandemic Flu
- ▶ Resource Sharing
- ▶ Training for Non-VA



Education/Training: Staff

- ▶ 26 mentions
 - No experimental studies
 - 8 quasi-experimental studies
 - 9 descriptive studies
 - 6 commentaries/newspaper articles
 - 3 other (brochures)



Education/Training: Staff

- ▶ Education one of VHA statutory missions
- ▶ Training Support for other Agencies
- ▶ Curriculum Development
- ▶ Four medical emergency preparedness centers mandated by VA Emergency Preparedness Act of 2002



Education/Training: Staff

- ▶ Need increased accountability in training approach
- ▶ Need to emphasize measurement and reporting based on competencies
- ▶ Education/training is vital and must be continuous
- ▶ Process more valuable than written plans



Communication: Systems

- ▶ 15 mentions
 - No experimental studies
 - 4 quasi-experimental studies
 - 5 descriptive studies
 - 4 commentaries/newspaper articles
 - 2 other (brochures)



Communication: Systems

- ▶ VA has resources
- ▶ Communication problems weak link in preparedness & response
- ▶ Secure communication part of VA mission
- ▶ Continuity of care & post-disaster follow up
- ▶ Challenges: incompatible equipment, relying on single method of communication



Veteran Needs: PTSD

- ▶ 18 mentions
 - No experimental studies
 - 9 quasi-experimental studies
 - 3 descriptive studies
 - 5 newspaper articles/commentaries



Veteran Needs: PTSD

- ▶ Overall increase in symptoms post-disaster
- ▶ Overall decrease in service use post-disaster
- ▶ Some researchers posit that post-disaster sense of unity contributed to increased sense of control over symptoms



Results

	Community Collaboration	Education: Staff	Communication: Systems	PTSD
Mitigation	9	7	2	1
Preparedness	39	29	14	3
Response	25	11	9	6
Recovery	9	7	5	13



Discussion

- ▶ Majority qualitative
- ▶ No experimental research
 - Emergency management research within VA: "Blank Canvas"
 - VA in prime position to create portrait of what emergency management research should look like
 - Access to nationwide data
 - Activation in every disaster since 1992
 - Presence throughout the U.S.



Discussion

- ▶ More research is needed in:
 - Veteran health needs: behavior health, older adults, disabilities, physical/functional disorders
 - Social services: funeral/cemetery, living arrangements, family of veterans



Conclusions

- ▶ Strength of this systematic literature review: All-inclusive
- ▶ Experimental research: much to be done to add to our knowledge base through “gold standard” of research
- ▶ VA optimal setting for conducting quality emergency management research



United States Department of Health & Human Services
Office of the Assistant Secretary for Preparedness and Response (ASPR)

Science, Evaluation, and Quality Improvement

Lisa G. Kaplowitz, MD, MSHA
Director, Office of Policy and Planning
Office of the Assistant Secretary for Preparedness and Response
U.S. Department of Health and Human Services

Definition of National Health Security

National health security is a state in which the Nation and its people are prepared for, protected from, and resilient in the face of health threats or incidents with potentially negative health consequences.

What is the National Health Security Strategy (NHSS)?

- First National Strategy for protecting people's health
- Purpose is to galvanize national efforts
- National, not federal, strategy



Objective Seeks to Ensure Science, Evaluation, and QI to Support Health Security

“Ensure that all systems that support national health security are informed by the best available science, evaluation and quality improvement methods”

Investments in 4 Areas Are Required to Achieve the Objective

1. Coordinated research and development
2. Development of performance metrics and standards
3. Monitoring and evaluation
4. Continuous quality improvement



**Investment Area #1:
Coordinated Research and Development**



VISION:

“An evolving multidisciplinary research agenda will strengthen the evidence base for NHS in science, metrics development, and standards setting, while high-quality evaluation efforts will document the translatability of practices to communities, assess their comparative effectiveness, and spur innovation. Such research will be both rigorous and practically relevant.”

6



**Investment Area #1:
Coordinated Research and Development**



- a) Develop, disseminate, and update syntheses of existing research efforts
- b) Develop disseminate a coordinated research agenda
- c) Develop and disseminate standards of proof for evidence-based practices

7



**Investment Area #2: Development of
Performance Metrics and Standards**



VISION:

“The nation will have a common pool of evidence-based health security metrics and standards that can support research, evaluation, monitoring, and quality improvement”

Contributes to and is informed by research

8



**Investment Area #2: Development of
Performance Metrics and Standards**



Implementation activities for the next 2 years:

- a) Develop and disseminate a common methodological framework to guide measure and standards development
- b) Develop an architecture for a common core of health security measures and standards
- c) Develop and disseminate performance metrics and standards for the most important health security capabilities

9



**Investment Area #3:
Monitoring and Reporting**



VISION:

“Decision-makers, practitioners, and citizens will have access to rigorous, timely, and user-friendly information on health security performance and on the impact of investments in improving health security”

10



**Investment Area #3:
Monitoring and Reporting**



Implementation activities in the next 2 years:

- a) Produce regular public reports on national health security
- b) Develop and begin testing algorithms for aggregating and rolling up performance measures

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Investment Area #4: Continuous Quality Improvement



VISION:

“Practitioners will receive the necessary training and have the tools and access to structured repositories of NHS-relevant performance-improvement materials needed to carry out effective system improvement efforts to close gaps revealed through measurement and experience”

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Investment Area #4: Continuous System Improvement



Implementation activities in the next 2 years:

- a) Review existing quality improvement programs and tools/techniques
- b) Encourage & support development of quality improvement tools
- c) Disseminate and incorporate QI training and tools into federal grant guidance, accreditation and education/training programs
- d) Encourage and support QI learning collaboratives
- e) Create recognition programs for agencies with high levels of performance and evidence of robust QI programs
- f) Promote by example - adopt QI methods for internal use at HHS agencies

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Currently



- Have held three meetings with principles from the partner organizations on 3, 8 and 12 March 2010 to develop integrated research concept
- Meeting Outcomes:
 - Coordinate interagency research Agenda
 - Organize collective research agenda materials into a combined agenda
 - Review agenda materials with principles
- Anticipate next meeting with principles in June, 2010

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Preparedness and Emergency Response Research Centers: A Public Health Systems Approach



Veterans Health Administration Comprehensive Emergency Management Program Evaluation and Research Conference

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Office of Public Health Preparedness and Response
May 4, 2010



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Presentation Outline

- CDC response to Pandemic and All-Hazards Preparedness Act (PAHPA)
- Extramural research portfolio for Public Health Systems Research (PHSR)
- Program activities and updates



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Pandemic and All Hazards Preparedness Act (PAHPA)

Requirements:

- Consult with Public and Private Entities
- Define Existing Knowledge Base
- Establish a Research Agenda based on Federal, State, Local and Tribal public health preparedness priorities
- Conduct Public Health Preparedness and Response Systems Research



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What is Public Health Systems Research?

"A field of study that examines the organization, financing, and delivery of public health services within communities, and the impact of these services on public health."

Mays, GP et.al. J Public Health Manag Pract 2003

"Public health systems are the constellation of individuals and organizations in the public and private sector that provide information and assets to promote population health, provide health care delivery, prevent disease and injury and include health care providers, insurers, purchasers, public health agencies, faith-based organizations, and entities that operate outside the traditional sphere of health care. Public health systems research investigates the functions, operations, structure, and interactions of these public health systems."

CDC/COTPER, 2008



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Why public health preparedness and response systems research?

- ❑ > \$7 Billion in funds infused into state and local preparedness over the past ~ 10 years
- ❑ Need a rigorous and systematic investigation to:
 - ✓ quantitatively describe the complex system
 - ✓ identify gaps
 - ✓ apply research findings to affect policy and programmatic improvements
- ❑ This young field fosters an innovative approach to research



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COTPER Charge to the IOM



- Provide recommendations regarding research priorities for emergency preparedness and response in public health systems specific for the expertise in schools of public health.
- Identify opportunities and 3-5 top-priority research areas that will result in measurable outcomes and near-term impact over the next 3-5 yrs.



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Work by the Institute of Medicine



➤ Committee on Research Priorities in Emergency Preparedness and Response for Public Health Systems, Board on Health Sciences Policy, Institute of Medicine of the National Academies, January 2008.

➤ *Research Priorities in Emergency Preparedness and Response for Public Health Systems: A Letter Report* Bruce M. Altevogt, Andrew M. Pope, Martha N. Hill, and Kenneth I. Shine, Editors

- ❑ Convened committee of academicians and practitioners with knowledge and expertise in emergency preparedness and response
- ❑ Conducted a public meeting and workshop to obtain expert views on research priorities in emergency preparedness and response for public health systems
- ❑ Considered research areas articulated in CDC's report *Advancing the Nation's Health: A Guide for Public Health Research Needs 2006-2015*
- ❑ Identified priority research areas likely to result in "measureable outcomes" and "near-term impact" over the next 3-5 years



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IOM Recommendations for Research Priorities for Emergency Preparedness and Response in Public Health Systems

Priority Research to:

- Enhance the Usefulness of Training
- Improve Communications in Preparedness and Response
- Create and Maintain Sustainable Preparedness and Response Systems
- Generate Criteria and Metrics Applicable to An All-Hazards Approach to Preparedness to Measure Effectiveness and Efficiency



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Program Goals for Preparedness and Emergency Response Research Centers

Use a public health systems research approach to strengthen and improve public health preparedness and emergency response capabilities to:

1. Respond to Congressional intent
2. Initiate a public health research enterprise
3. Improve capability assessment for emergency response and knowledge-to-practice
4. Improve system performance for all-hazards over a scenario- or agent-based system performance
5. Leverage the academic research environment at Schools of Public Health to accelerate the development of research methods, standards, best practices, and templates to improve systems for public health preparedness and emergency response.



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Research Focus for Preparedness and Emergency Response Research Centers

- ❑ Public health preparedness and emergency response content
- ❑ Systems research in the context of public health preparedness and emergency response
- ❑ Management of public health materiel, personnel, and information supply chains in complex and rapidly changing systems
- ❑ Use an interrelated, interdependent, and multidisciplinary approach for the research



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Preparedness and Emergency Response Research Centers: Funding Opportunity Announcement

- ❑ Grant Purpose "to conduct public health systems research on preparedness and response capabilities at the national, state, local and tribal levels."
- ❑ Grant Mechanism: Research Program Project Center Grants (P01)
- ❑ Priorities for funding
 - Enhance the Usefulness of Training ** *excludes formative and summative evaluation studies (such as training evaluation, program evaluation, needs assessment or analysis)*
 - Improve Communications in Preparedness and Response
 - Create and Maintain Sustainable Preparedness and Response Systems
 - Generate Criteria and Metrics Applicable to An All-hazard Approach to Preparedness to Measure Effectiveness and Efficiency
 - Cross-Cutting Themes
 - Vulnerable populations and workforce themes
 - Legal and Ethical Issues
 - Emergency Preparedness and Response in Rural Communities



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Preparedness and Emergency Response Research Centers

EMORY UNIVERSITY
HARVARD UNIVERSITY
JOHN HOPKINS UNIVERSITY
UNIVERSITY OF CALIFORNIA, BERKELEY
UNIVERSITY OF CALIFORNIA, LOS ANGELES
UNIVERSITY OF MINNESOTA
UNIVERSITY OF NORTH CAROLINA, CHAPEL HILL
UNIVERSITY OF PITTSBURGH
UNIVERSITY OF WASHINGTON

<http://emergency.cdc.gov/cdcpreparedness/science/research/PERRC.asp>



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Update on Preparedness and Emergency Response Research Centers

PERRC Program Funding Supports:

- ◆ **Administrative Cores per PERRC**
 - Advisory Committee with practice partners from organizations across PHS
 - Multiple pilot research projects
 - Training in PHSR for new investigators
- ◆ **3-4 RO1 level multidisciplinary, inter-related research projects per PERRC (34 total)**



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Update on Preparedness and Emergency Response Research Centers

Research Priorities Addressed by the PERRCs

- ◆ **Enhance the Usefulness of Training**
 - *University of Minnesota; Simulations and Exercises for Educational Effectiveness*
- ◆ **Generate Criteria and Metrics Applicable to An All-Hazard Approach to Preparedness to Measure Effectiveness and Efficiency**
 - *Harvard University; Linking Assessment and Measurement to Performance in Public Health Emergency Preparedness Systems (UAMPS)*
 - *University of Pittsburgh Preparedness and Emergency Response Research Center*



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Update on Preparedness and Emergency Response Research Centers

Research Priorities Addressed by the PERRCs

- ◆ **Improve Communications in Preparedness and Response**
 - *University of Washington; Northwest Preparedness and Response Research Center*
- ◆ **Create and Maintain Sustainable Preparedness and Response Systems**
 - *Emory Preparedness and Emergency Response Center*
 - *Johns Hopkins University; Mental and Behavioral Public Health Systems Preparedness Research*
 - *University of North Carolina; Public Health Preparedness Systems Research Center*
 - *University of California, Berkeley; Achieving Public Health & Community Readiness for Today's Challenges and Future Threats*
 - *University of California, Los Angeles; Preparedness and Emergency Response Research Center*



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Update on Preparedness and Emergency Response Research Centers

Cross-Cutting Research Priorities Addressed by the PERRCs

- ◆ **Preparedness and Response in Rural Communities**
 - *University of Washington; Northwest Preparedness and Response Research Center*
 - *University of Pittsburgh Preparedness and Emergency Response Research Center*
 - *University of North Carolina; Public Health Preparedness Systems Research Center*
 - *University of California, Los Angeles; Preparedness and Emergency Response Research Center*
- ◆ **Community Involvement**
 - *University of Washington; Northwest Preparedness and Response Research Center*
 - *Johns Hopkins University; Mental and Behavioral Public Health Systems Preparedness Research*
 - *University of California, Los Angeles; Preparedness and Emergency Response Research Center*
 - *University of California, Berkeley; Achieving Public Health & Community Readiness for Today's Challenges and Future Threats*



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Update on Preparedness and Emergency Response Research Centers

Cross-Cutting Research Priorities Addressed by the PERRCs

- ◆ **Vulnerable populations and workforce themes**
 - *Johns Hopkins University; Mental and Behavioral Public Health Systems Preparedness Research*
 - *Emory Preparedness and Emergency Response Center*
 - *University of Washington; Northwest Preparedness and Response Research Center*
 - *University of California, Berkeley; Achieving Public Health & Community Readiness for Today's Challenges and Future Threats*
 - *University of California, Los Angeles; Preparedness and Emergency Response Research Center*
- ◆ **Legal and Ethical Issues**
 - *University of Pittsburgh Preparedness and Emergency Response Research Center*
 - *Johns Hopkins University; Mental and Behavioral Public Health Systems Preparedness Research*



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Update on Preparedness and Emergency Response Research Centers

Program Activities Include:

- ◆ Opening session of the 2009 Public Health Preparedness Summit, San Diego, California
- ◆ Research featured during 2010 Public Health Preparedness Summit, Atlanta, Georgia
 - 21 platform presentations across 7 sessions
 - 11 poster presentations
- ◆ Panel during 2010 Public Health Systems and Services Research Conference, Lexington, Kentucky
 - Three investigators described the research outcomes and impact for enhancing public health system capabilities and capacity
 - Research involvement of public health practice partners highlighted
- ◆ Preparing comprehensive research center evaluation* during year 03 (2011)
 - *Pending the availability of funds



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Questions?



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Science & Technology for Building Resilient Communities

Michael Donaway, Program Manager
Community Preparedness and Resilience
Human Factors/Behavioral Sciences Division
Science & Technology Directorate
U.S. Department of Homeland Security



Current status of U.S. efforts to address resilience

Resilience is a focus of attention at Federal, State and local levels:

- Office of National Resilience Policy at National Security Council
- Quadrennial Homeland Security Review
- Regional and multi-state resilience initiatives
- National Academies of Science study of resilience



U.S. effort to define and address resilience is evolving

Since Hurricane Katrina, there has been a growing recognition that resilience against all hazards is essential for preserving civil functions and social cohesiveness beyond a disaster. Criteria include:

Preparedness: assessing risks and hazards and anticipating capabilities required to deflect, absorb or dissipate as much of the incident's effects as possible; and respond effectively in the aftermath.

Recovery: the capacity to (1) sustain essential functions through the disaster or incident; and (2) rebound and sustain a viable level of functioning to enable restoration of the society.

Adaptability: recognizing what has changed in the post-incident environment and addressing those changes with innovation to survive and ultimately achieve an enhanced level of functioning.



Research Priorities to Support a Resilient Nation

The foundation for resilient communities is knowledge based on scientific research and technology development. Efforts currently in progress or planning include the following general categories:

- Research into disaster characteristics, hazards, and vulnerabilities
- Identifying community level indicators for resilience and vulnerability
- Methods to enhance preparedness, response and recovery
- Hazard and risk perceptions and public communications
- Methods for strengthening social networks and mitigating economic, social, and psychological impacts of disasters
- Developing evidence based tools and capabilities for communities to address identified challenges to building resilience



Coping Mechanisms for PTSD Among First Responders

Objective: identify and understand coping mechanisms among First Responders against the effects of Post Traumatic Stress Disorder (PTSD).

Research approach: Evaluate First Responders to identify factors that may contribute to successful adjustment to and management of work-related stress:

- Psychosocial
- Lifestyle
- Training
- Motivation
- Environmental
- Community

Added benefit: inform policies toward National Guard and Reserve personnel who also serve as First Responders.



Methodology for pilot study:

- (1) Develop a research design for both quantitative and qualitative analysis
- (1) Evaluate preliminary findings and recommendations
- (1) Design longitudinal study of First Responder communities



Homeland Security

Functional Definitions

Re-silience (ri zil yəns) *n.* Also re-sil·ien·cy.

1. The speed with which a material or system returns to equilibrium after displacement.
2. The capacity to recover quickly from adversity and adapt to the changed environment.
3. *SYN* (Brit.) “bouncebackability.”



Soldiers Helping Soldiers: A Study of Resiliency among Army National Guard Veterans

VHA CEMPER Conference
4 May 2010
Lt Col Lisa Sayegh

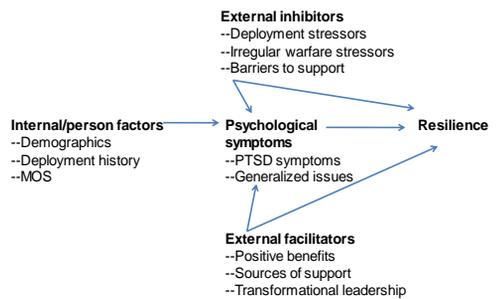
Statement of the Problem: *The "Bad" News*

- Redeployed **ARNG Soldiers** are faced with unique challenges:
 - Must reintegrate back into communities, family, and civilian jobs
 - Less accessibility to health care, leadership support, and base resources than AD soldiers
 - Often deployed with a different unit
- Results in PTSD and depressive disorder rates twice that of the AD components (Rand, 2007)

Rationale for the Study: *The "Good" News*

- Research demonstrates--***most people are resilient*** to trauma/adverse events (Bonnano, 2008)
- Study Aim: identify factors that help (and hinder) soldiers' successful recovery and reintegration
 - Factors in individual coping styles and social support systems ***that can be replicated***
- Study Goals:
 - Incorporate lessons into leadership, reintegration, therapeutic programs
 - Develop intervention and test through outcome studies

Conceptual model

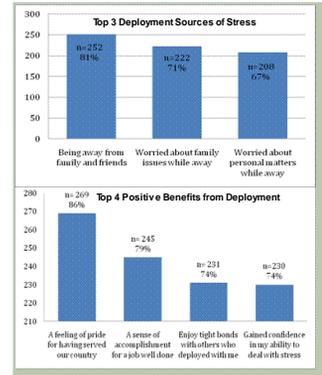


Significant Correlations

- Soldiers who report higher levels of post traumatic stress symptoms also report:
 - lower levels of resiliency
 - fewer positive benefits of deployment
 - more deployment stressors
 - more barriers to support
 - **having leaders with a hands-off approach: "Laissez-Faire" leadership**
- Soldiers who report more positive benefits of deployment also report having:
 - higher levels of resiliency
 - more sources of social support
 - **higher levels of post-traumatic growth**
 - **"Outside the Wire/Inside the Wire" duties**
 - leaders who are transformational (i.e., strong, caring, constructive)



Only 17.8% of soldiers agreed with the statement "I feel the contribution of the Guard is not appreciated."



SOLDIERS HELPING SOLDIERS

Helpful Coping Factors During Deployment

- Control
 - Don't try to control deployment aspects that you can't control. Instead, only exert influence over the things you can control.
- Established routine in daily life
 - Most commonly reported coping tactic
- Financial preparation
 - Plan for bills, budget, etc.—vital to prevent soldiers from feeling additional strain of coping while also trying to focus on combat mission
- Open communication
 - Most common reason among soldiers whose marriages survive deployment
- Good leadership
 - Understanding the bigger picture; knowing you are making a difference

"You've got to focus on what you can affect and just keep your mind where you can use it positively."

Helpful Coping Factors After Deployment



- Time off!
- Biggest sources of support
 - Soldiers deployed with & family members
 - Family helped by being understanding: allowed soldier to talk if needed, but not forcing or asking questions if soldier didn't want to answer
- Helping other soldiers
 - Helping/teaching/doing favors/taking care of soldiers reduced stress and helped them feel more capable of handling their own stress
- Self care
 - Exercise, diet, sleep, staying on a predictable routine
 - Engaging with others and sharing feelings

43% of soldiers agree that their religion or spirituality plays a key role in being able to cope well with reintegration stressors.

"I guess at the most basic and primitive level is deciding that you're going to cope. Just making a conscious decision that I'm not going to let this bother me."

BACK-UP SLIDES

Methods

- **Mixed-method Design**
 - Quantitative Survey
 - 150+ items
 - Validated and custom scales measuring:
 - Stress exposure, resiliency, PTSD, Post-traumatic growth
 - Attitudes about benefits of deployment, usefulness of various support and reintegration programs
 - Qualitative Interview
 - Hour long, semi-structured interview
 - Gathers individualized, detailed info about soldier's coping skills, leadership factors, support systems, etc.

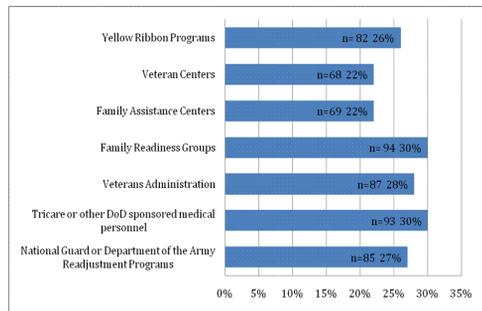
Sample Description: Basic Demographics

TOTAL N = 468	N	% of Total Sample	Range	Mean
Age	468	--	20 - 60	35.44
Male	413	89.2		
Female	50	10.7		
E1 - E4	64	13.8		
E5 - E7	268	57		
E8 - E9	32	0.05		
WO1 - CW05	18	0.04		
O1 - O3	49	0.11		
O4 - O6	40	0.09		
O7	1	0.002		

Sample Description: Employment and Marital Status

TOTALN = 468	N	% of Total Sample	Mean
Work a civilian Job	254	54 (48.7% full-time)	
Full-time NG	212	45	
Unemployed	22	4	
	16 due to military service/deployments		
First Responder	55	11.8	
Married	292	62.4	8.75 years
Single	97	20.7	
Separated/Divorced	65	13.9	
Have Children	284	60.7	
Have Children Under 18	251	53.6	2 children

Percent of Soldiers Who Agree the Following Programs are Helpful



1. Counseling --helpful and informative

- Presenting issues:
 - Help for primary relationship—most often
 - PTSD
 - Other combat-related stressors
- Sought civilian therapists
- 2. Previous Military Experience --self & family
 - Soldiers call on past experiences to cope & people who can related as resources to help get through difficult times
- 3. Sources of Stress
 - Separation from family
 - Longer than planned/expected
 - Inaccurate media coverage

4. Relationships (this theme is still being modified/analyzed for more detail)

- Positive & negative feelings about people in their lives
 - Some relationships cause more harm than good, become toxic/damaged due to military experiences
- Turning to others for support
- 5. Reintegration --difficulties
 - With spouse
 - Both are accustomed to "calling the shots"
 - Difficult to establish "a new normal" & balance roles
 - In civilian job
 - Perception that civilians have a weaker work ethic
- 6. Military Training & Prep
 - Previous deployments help
 - Some ARNG believe they are better trained than AD
 - Dislike 3-month pre/post mob training system—too long, redundant

Helpful Coping Factors During Deployment: Good Leadership

- Ensured an injured or stressed soldier knew the leader was concerned
- Made soldier feel part of the "family" or military unit
- Made expectations clear from beginning
- Approachable
- Took advice from subordinates
- Gave sufficient information so soldiers understood the big picture
- Answered questions

Helpful Coping Factors During Deployment

- Seeing results
 - Knowing your work, unit, & mission made an impact
- Chance to train replacement
 - Helped to achieve sense of accomplishment
 - Reduced stress
- Previous, shorter deployments
 - Helped soldiers & families cope
 - Knew a little of what to expect for the longer deployment

Helpful Factors in Marriages/Relationships

- Open communication; honest, respectful dialogue with spouse
 - Most commonly-stated reason given for why soldiers think their marriage survived the deployment
- Confidence and trust
 - I believe my spouse can handle things at home
- Providing spouse with information
 - Sharing what was going on in the soldier's life during deployment
 - Saying "I can't talk" without giving reasons--better than leaving spouses completely in the dark
- Counseling
 - Marital counseling was received by 50 – 75% of couples after deployment
 - Soldiers reported that they almost always went to counseling because someone else pointed out to them that they needed the help
 - The more specific benefits of counseling are unknown at this point

Unhelpful Coping Factors After Deployment

- Lack of routine
 - Most commonly-reported reason given when they were coping *poorly*
- Isolating
 - Staying in room, playing video games, or sticking to oneself, not participating in group activities or staying connected with family

DHS Office of University Programs Overview



Matthew Clark, Office of University Programs
Science and Technology Directorate

May 2010



www.hsuniversityprograms.org

DHS Office of University Programs

Programmatic Thrusts

- Centers of Excellence
- Education Programs
- Minority Serving Institutions



Centers of Excellence Congressional Mandate

Homeland Security Act of 2002:

"The Secretary, acting through the Under Secretary for Science and Technology, shall designate a university-based center or several university-based centers for homeland security. The purpose of the center or **these centers shall be to establish a coordinated, university-based system to enhance the Nation's homeland security.**"
(as amended)



Developing ... "A Coordinated University-Based System"

- Multi-COE, multi-division, multi-disciplinary projects
 - Target cross-cutting areas of uncertainty and critical need
 - Integrating National Labs in joint COE projects
- Multi-national, multi-disciplinary UP workshops in U.S., EU, Asia
- Integrating Education with COEs and S&T divisions
- Integrating MSIs into COEs
- Transitioning COE students, scholars and fellows to DHS and Federal labs, industry, universities, foreign institutions
- Instituting transition plans for all COE projects



Office of University Programs' Mission

Maximize DHS' return on
investment in university-based
research and education



Guiding Principles to Maximize ROI Business Model

Effective → Do the right work [quality products]

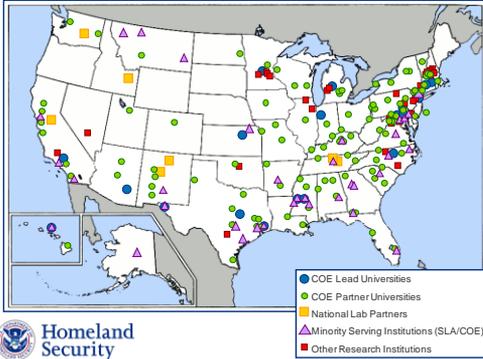
Efficient → Do the work right [lowest cost]

Enduring → Recoup the investment [returning customers]

Equal Opportunity → Reflect America to Protect America
[build customer base for the future]



The DHS S&T University Network



COE Alignment with the S&T Divisions

COE Alignment with S&T Divisions					
Explosives	Chemical-Biological	Command, Control & Interoperability	Borders & Maritime	Human Factors	Infrastructure/ Geophysical
National Transportation Security COE	PACER	National Transportation Security COE	National Transportation Security COE		National Transportation Security COE
Risk, Economics and Operations Analysis Risk Sciences Branch & HSI Risk Determination					



The 12 DHS Centers of Excellence

- Center for Risk & Economic Analysis of Terrorism Events (CREATE)
 - Lead: University of Southern California
- National Center for Zoonotic & Animal Disease Defense (ZADD)
 - Lead: Kansas State University
 - Lead: Texas A&M University
- National Center for Food Protection & Defense (NCFPD)
 - Lead: University of Minnesota
- National Consortium for the Study of Terrorism & Responses to Terrorism (START)
 - Lead: University of Maryland
- Center for Advancing Microbial Risk Assessment (CAMRA)
 - Lead: Michigan State University, in Partnership with U.S. EPA
- National Center for Preparedness & Catastrophic Event Response (PACER)
 - Lead: Johns Hopkins University



The 12 DHS Centers of Excellence Listed by Award Date

- The Center for Awareness and Location of Explosives-Related Threats (ALERT)
 - Research Co-Lead: Northeastern University
 - Education Co-Lead: University of Rhode Island
- The National Center for Border Security and Immigration (NCBSI)
 - Research Co-Lead: University of Arizona
 - Education Co-Lead: University of Texas at El Paso
- The Center for Maritime, Island and Port Security (MIPS) - meets Safe Ports Act
 - Maritime and Islands Co-Lead: University of Hawaii (CIMES)
 - Port Security Co-Lead: Stevens Institute of Technology (CSR)
- Natural Disasters, Coastal Infrastructure and Emergency Management (NDCIEM)
 - Research Co-Lead: University of North Carolina at Chapel Hill (DIEM)
 - Education Co-Lead: Jackson State University (NDCIEM)
- National Transportation Security COE (NTSCOE) – Required by HR-1
 - Research Co-Lead: University of Connecticut
 - Education & Training Co-Lead: Tougaloo College
 - Petro-Chemical Transportation Co-Lead: Texas Southern University
- Command Control and Interoperability (C2I)
 - Co-Lead: Purdue University
 - Co-Lead: Rutgers University



Accomplishments: All COEs

Categories of Accomplishments	2004 through 12/31/2008 (Number/ Amount)	2004 through 12/31/2009 (Number/ Amount)	Increase 2008 - 2009	Percent Increase 2008 - 2009
Students in COE Program	1,154	1,958	804	70%
Papers	1,175	1,767	592	50%
Software Products Developed	106	167	61	58%
New Courses Developed	Not Requested	127		
New Certificates or Degree Programs Developed	Not Requested	34		
Patents	14	24	10	71%
Requests for assistance or advice from DHS	218	344	126	58%
Requests for assistance or advice from Federal, State, Local Government	609	687	178	30%
Follow-on funding from other sources	\$ 48,388,920	\$ 104,880,997	\$ 56,495,498	117%
Presentations	2,932	3,994	1,062	36%
Congressional Testimonies	15	25	10	67%
Projects Completed	179	288	89	50%



S&T has 16 Priority Research and Education Areas

- Explosives Detection, Mitigation and Response
- Social, Behavioral, and Economic Sciences
- Risk and Decision Sciences
- Human Factors Aspects of Technology
- Chemical Threats and Countermeasures
- Biological Threats and Countermeasures
- Food and Agriculture Security
- Transportation Security
- Border Security
- Immigration Studies
- Maritime and Port Security
- Infrastructure Protection
- Natural Disasters and Related Geophysical Studies
- Emergency/Preparedness and Response
- Communications and Interoperability
- Advanced Data Analysis and Visualization
- Resilience



Education Programs

- The **Homeland Security Science, Technology, Engineering and Mathematics (HS-STEM) Career Development Grants Program** provides institutional grants to colleges and universities to award scholarships and fellowships to students in HS-STEM disciplines.
- The **DHS Scholarship and Fellowship Program** provides individual scholarships and fellowships to support undergraduate and graduate students pursuing degrees in homeland security-focused courses of study.
- The **Summer Internship Program** provides undergraduate juniors and seniors the opportunity to work with homeland security professionals and researchers during the summer.
- The **K-12 STEM Education Initiatives** pilot innovative approaches to K-12 stem education using technologies focused on homeland security issues
- The **National Defense University Science and Technology Leadership Program** provides partial fellowships for DHS employees to pursue Master's degrees in science and technology leadership.



Minority Serving Institutions Programs

- MSI Scientific Leadership Awards (SLA):** Institutional awards to support the development of HS-STEM teaching initiatives, curriculum development and scholarships in HS-STEM fields
- Summer Research Team (SRT) Program:** Engages early career faculty and students in summer research collaborations with the DHS Centers of Excellence
- Existing awards given to Centers of Excellence to expand MSIs' STEM capabilities and develop a number of proven career pathways for MSI students



COE Competitions Calendar															
COE Timeline	Research Focus	Primary SST Division	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19
C2I	Data and visual analysis	Command, Control, Interoperability	Former IDS-UAG & RVACS		Command, Control & Interoperability COE										
CREATE	Risk and Economics	Multiple	CREATE		Re-competed Risk, Economics & Operations Research COE										
NCFPD	Food Safety	ChemBio	NCFPD		Re-competed Food Security COE										
FAZD	Animal Disease		FAZD		Re-competed Agricultural Security COE										
START	Social Science and Terrorism Studies	Human Factors	START		Re-competed Terrorism COE										
NTSCOE	Transportation Security	Multiple	NTSCOE		Re-competed Transportation Security COE (?)										
ALERT	Explosives Detection and Countermeasures	Explosives	ALERT		Re-competed Explosives COE (?)										
MPS	Maritime, Island & Port Security	Borders & Maritime	MIPRES		Re-competed Maritime COE (?)										
NCBSI	Border Security and Immigration	Borders & Maritime	NCBSI		Re-competed Borders COE (?)										
NDOEM	Natural Disasters	Infrastructure/Geophysical	NDOEM		Re-competed Natural Disasters COE (?)										
PACER	Catastrophic Response	Infrastructure/Geophysical	PACER		PACER Extension Period		New or re-competed COE?								
Minority Serving Institutions Capacity Development			MSI Programs at COEs												

Backup



Determining COE Research Focus Areas

Statutory Designation Criteria*

The training of first responders
 Emergency and diagnostic medical services
 Chemical, biological, radiological and nuclear countermeasures or detection
 Animal and plant health and diagnostics
 Food safety
 Water and wastewater operations
 Port and waterway security
 Multi-modal transportation
 Information security and information engineering
 Engineering
 Educational outreach and technical assistance
 Border transportation and security
 Responding to incidents involving weapons of mass destruction and biological warfare
 The public policy implications and public dissemination of homeland security relevant research and development

Discretionary Designation Criteria

Risk analysis and modeling of systems (National Academies, 2003)
 Explosives detection, mitigation and response
 Terrorism and responses to terrorism (National Academies, 2003)
 Natural disasters, coastal infrastructure and emergency management
 Maritime, island and ports security (Safe Ports Act of 2006)

*Designation criteria for DHS Research and Education Centers from P.L. 107-296, as amended, Section 308(b)(2)(B)



Selecting Universities

- Technical merit and quality
- Mission-related significance
- Geographical distribution of all COEs and major partners
- Qualifications of the principal investigator(s) and other key personnel
- The availability and/or adequacy of the facilities and equipment proposed for the project
- The ability of the lead institution to manage a complex Center of Excellence in terms of achieving research results when due, managing large and complex budgets and communicating research outcomes, and the adequacy of the proposed management plan
- Evidence that the applicant is familiar with the research and resources of existing DHS COEs; other DHS science and technology efforts; and federal agency or National Laboratory research
- The adequacy of education plans and supporting material and demonstration of the proposed COE's ability to establish an enduring and comprehensive program of study
- The effectiveness and soundness of a strategy to transition research results to end users
- The demonstrated ability and commitment to establish meaningful partnerships with MSIs to develop a quality MSI research and training program, and the quality of the proposed program



COE Selection Process*

COE Source Selection Time Table

- Funding Opportunity Announcement (www.grants.gov)
 - Optional Sequence:
 - Call for white papers
 - White paper deadline and review
 - Invitation to submit proposals
- Proposal submission closing date
- External panel scientific review and recommendations
- Internal panel relevancy review and priority selections
- Site visits to institutions on priority list
- Internal deliberations and recommendations
- Selection of new COEs
- Negotiations with COE leads
- COE subcontracting and approval process
- Award

* Not including Transportation Security COE



CREATE National Center for Risk and Economic Analysis of Terrorism Events

Mission To evaluate the risks, costs, and consequences of terrorism, and provide decision support tools to protect the Nation	Partners Lead: University of Southern California Arizona State University, Carnegie Mellon University, Elizabeth City State University*, New York University, North Carolina State University, Penn State University, University of Illinois-Urbana-Champaign, University of Texas-Dallas, University of Wisconsin-Madison *Minority Serving Institutions
Impact and Relevance <ul style="list-style-type: none"> Models and tools for generating random security/protection plans that serve as a strong terrorism deterrent, while achieving a sufficient use of security patrol Support of the Risk Assessments of the National Bio-defense Analysis and Countermeasures Office (NBACC) Risk-based Resource Allocation for California Buffer Zone Protection Program (BZPP) Funds ARMOR IR13 Patrol Randomization 	Customers DHS Science and Technology Chem-Bio National Biodefense Analysis and Countermeasures Center (NBACC) Customs and Border Protection (CBP) Immigration and Customs Enforcement (ICE) Transportation Security Agency (TSA) DHS Office of Infrastructure Protection (OIP) State Homeland Security Agencies Port Authorities



START National Consortium for the Study of Terrorism and Responses to Terrorism

Mission To advance science-based knowledge about the human causes and consequences of terrorism that is directly relevant to homeland security policymakers and practitioners	Partners Lead: University of Maryland American Univ., Bar Ilan Univ., Brandeis Univ., Bryn Mawr College, Catholic Univ. of Sacred Heart, Dartmouth Medical School, Eastern Michigan Univ., European Univ. Institute, John Jay College, CUNY*, King's College, Massachusetts Institute of Technology, Michigan State Univ., Monash Institute of International Studies, Morehouse College*, Nanjing Tech Univ., Ohio State Univ., Pennsylvania State Univ., Purdue Univ., Rutgers Univ., San Diego State Univ.*, St. Andrew's Univ., Stanford Univ., SUNY Purchase, Tufts Univ., Univ. at Albany, Univ. of Arkansas, Univ. of California-Irvine, Univ. of California-Los Angeles, Univ. of Colorado, Univ. of Macedonia, Univ. of Minnesota, Univ. of Missouri-Kansas City, Univ. of New Mexico*, Univ. of North Florida, Univ. of Oklahoma, Univ. of Pennsylvania, Univ. of Pittsburgh Medical Center, Univ. of South Carolina, Univ. of Surrey, Univ. of Texas, Univ. of Wisconsin-Madison, Wellesley College, Wesleyan Univ. *Minority Serving Institutions
Impact and Relevance <ul style="list-style-type: none"> Developing world's largest and most up-to-date open-source database of international and domestic terrorist events Models specifying characteristics of groups that might be most likely to engage in terrorism in the future Assessments of household and institutional preparedness around the United States Training a next generation of homeland security practitioners and researchers 	Customers DHS Science and Technology DHS Office of Intelligence and Analysis DHS Preparedness Directorate National Counterterrorism Center (NCTC), DNI Federal Bureau of Investigations (FBI) Port Authority of New York and New Jersey State/Local Homeland Security and Emergency Management Offices



CAMRA Center for Advancing Microbial Risk Assessment

Mission To develop critically reviewed and interpreted sets of models, tools and information that will be used in a credible risk assessment framework to reduce or eliminate health impacts from deliberate use of biological agents of concern (BAC) as bioterrorists agents in the indoor and outdoor environment.	Partners Co-Lead: Drexel University Co-Lead: Michigan State University University of Arizona, *Northern Arizona University, Carnegie-Mellon University, University of California - Berkeley *Minority Serving Institution
Impact and Relevance <ul style="list-style-type: none"> Provide scientific basis for assessing risks of natural and malicious occurrences of infectious agents Provide scientific basis for assessing "how clean is clean" 	Customers DHS Science and Technology Directorate US EPA - National Homeland Security Research Center National Bio-defense Analysis and Countermeasures Center



PACER National Center of the Study of Prepared and Catastrophic Event Response

Mission Improve the Nation's preparedness in the event of a high consequence natural or man-made disaster, and develop best practices to alleviate the event's effects in the areas of emergency medicine and public health	Partners Lead: Johns Hopkins University Florida A&M Univ.*, Florida State Univ., Jacksonville State Univ., JHU School of Advanced International Studies, JHU Applied Physics Lab, JHU School of Medicine, Loma Linda Univ., Morgan State Univ.*, Univ. at Buffalo, Univ. of Alabama-Birmingham, Univ. of Alabama-Tuscaloosa, Univ. of South Florida *Minority Serving Institutions
Impact and Relevance <ul style="list-style-type: none"> Develop tools to assess risk readiness for catastrophic events Improve response capabilities of agencies and first responders by harnessing the strength of informal networks Identify communications and data fusion techniques to improve situational awareness and critical decision making 	Customers DHS Science and Technology DHS Preparedness Directorate DHS Policy Office Civil Rights Civil Liberties State Homeland Security Agencies



CIMES COE for Maritime, Island & Port Security

Mission Conduct research and develop technologies, tools and advanced methods to strengthen maritime domain awareness and safeguard populations and properties unique to U.S. island, remote/extreme environments	Maritime, Island Co-Lead: University of Hawaii Port Security Co-Lead: Stevens Institute of Technology Massachusetts Institute of Technology, Monmouth University, Rutgers University, *University of Alaska at Fairbanks, University of Miami, *University of Puerto Rico
Impact and Relevance <ul style="list-style-type: none"> Enhanced maritime domain awareness Protect Alaskan Pipeline and other infrastructures in remote and extreme areas Enhance response and recovery plans for natural disaster threats to Hawaii and similar communities, such as earthquakes and tsunamis 	Customers DHS Science and Technology, FEMA, Preparedness Directorate, Office of Infrastructure Protection, Customs and Border Protection U.S. Coast Guard State Security Agencies



DIEM
Department of Homeland Security
Center for Advanced Research and Education

COE for Natural Disasters, Coastal Infrastructure & Emergency Management

<p>Mission Conduct research and develop technologies, tools and advanced methods to safeguard populations, properties and economies subject to the consequences of catastrophic natural disasters, including hurricanes, tornadoes, floods, earthquakes, droughts and wildfires</p>	<p>Partners Research Lead: University of North Carolina – Chapel Hill Education Lead: Jackson State University Alcorn State University, California Polytechnic State University, Georgia State University, *Johnson C. Smith University, Louisiana State University, Medical University of South Carolina, Mississippi State University, *Mississippi Valley State University, North Carolina State *University, Oklahoma University, Rensselaer Polytechnic Institute, Rice University, South Carolina State University, *Texas Southern University, *Tougaloo College, Tulane University, University of Connecticut, University of Delaware, University of Houston, University of North Carolina – Charlotte, University of Texas – Dallas, USACE Engineer Research and Development Center</p>
<p>Impact and Relevance</p> <ul style="list-style-type: none"> Protect susceptible infrastructures Protect populations Enhance post-catastrophic recovery Improve pre-event communication Enhance critical supply chain resiliency 	<p>Customers DHS, Science and Technology, FEMA, Preparedness Directorate, Office of Infrastructure Protection U.S. Coast Guard USDA and DOI (wildfires) Customs and Border Protection State Homeland Security Agencies</p>




CCC
Center for Critical Incident Response

Command, Control and Interoperability

CCICADA
Critical Incident Control and Analysis
Center for Advanced Research and Education

<p>Mission Conduct research and develop technologies, tools, and advanced methods to enable operational personnel, scientists, or decision- and policy-makers to analyze, understand and apply diverse, diffuse, and distributed data on threats and manmade or natural disasters in the presence of uncertainty</p>	<p>Partners Lead: Purdue University Lead: Rutgers University</p>
<p>Impact and Relevance</p> <ul style="list-style-type: none"> Protect populations, critical facilities, and the nation's economic well-being Protect cyber infrastructure Enhance assessment of potential terrorist threats Improve pre-event analysis and post-event communications Improve understanding of human-technological communications interactions 	<p>Customers DHS Office of Intelligence and Analysis, Office of Health Affairs, Preparedness Directorate, Office of Infrastructure Protection, Science and Technology Directorate, Customs and Border Protection U.S. Coast Guard Immigration and Customs Enforcement State Homeland Security Agencies State and Local Emergency Responders</p>




DHS Education Programs

<p>Mission Develop the science, technological, engineering and mathematics instruction and learning capabilities to ensure the U.S. is the leader in counter-terrorism, disaster preparedness and security science and technology</p>	<p>Partners Federal Research Institutions DHS Centers of Excellence Other Academic Institutions Private Partnerships</p>
<p>Goals</p> <ul style="list-style-type: none"> Enhance development of students who wish to study in homeland security related STEM fields Promote DHS-related curriculum and programs to a wider community of academic and learning institutions and research facilities Develop a diverse and well-trained scientific and technical workforce for the homeland security community Pilot limited K-12 HS-STEM innovative program 	<p>Customers DHS K-20 Educational Community DHS Laboratories DHS Centers of Excellence National Laboratories State Homeland Security Agencies</p>



OUP's Successes & Highlights

Office of University Programs – developed an interactive network of **Centers of Excellence (COEs)** and **hundreds** of partner institutions responsive to DHS needs

Education Thrust – supports 8 education programs focused on DHS mission-oriented scientific and technical leadership needed for the Nation's future security

Minority Serving Institutions (MSI) Thrust – supports 2 programs to enhance the diversity of the homeland security science and technology community by building MSI institutional capacity and supporting future workforce development of under-served populations in DHS mission-oriented areas

Scholarship & Fellowship Program Statistics, since 2003:

- Supported **467** Scholars & Fellows
- Represented **47** states and territories and **155** institutions
- Completed **467** summer internships at DHS, DHS laboratories, DHS Centers of Excellence and National laboratories
- Underrepresented Minorities*** **82 (18%)**
- Supported **25** students (6%) from **16** MSIs (11%)

*African Americans, Hispanic, Native American, Alaskan Native, Native Hawaiian or other Pacific Islander



Education Results

- Scholarships and Fellowships Program** Since 2003 - 2009:
 - Number of student participants: over 550 scholars and fellows
 - Represents 47 states* and 155 institutions
 - Over 500 summer internships completed at DHS, DHS laboratories, DHS Centers of Excellence and National laboratories
 - Underrepresented Minorities: 82 (18%)
 - 25 students from 16 MSIs (10%)
- American Association for the Advancement of Science**
 - Fourteen fellows at DHS S&T since 2004
 - Six are now DHS employees, two are DoD employees
 - Re-compete of contract pending available funding
- HS-STEM Career Development Grants**
 - Awarded 27 institutional grants in 2007 - 2009



Disasters & Emergency Management Research Highlights

- ADCIRC Model:** UNC current circulation model used by MS, AL, LA, NC, others to predict hurricane storm surges and water movement, e.g., spread of Horizon Oil throughout the Gulf.
- H1N1 Agent-based model:** JHU using model to predict movement of pandemic
- JHU emergency medical surge modeling:** reverse triage study. Low-cost way to make beds available in a catastrophe
- JSU levee modeling:** predicting and reducing flood damage



COE's Successes and Highlights

DyDAN & NVAC – COMPSTAT 2: The Center for Dynamic Data Analysis Center at Rutgers University, working with the National Visual Analytics Center at the Pacific Northwest National Labs, joined technologies to advance the Port Authority of New York and New Jersey's Computer Statistics (CompStat 2) program. CompStat2 makes real time crime information available to first responders at all levels of the organization and has already helped PANYNJ re-deploy security forces to reduce crime.

Stevens Institute of Technology (Maritime Security COE) - Hudson River Recovery Effort: On January 15, 2009, within minutes of US Airways flight 1549 crash landing on the Hudson River, Stevens Institute of Technology was contacted by the Director of Watch Command for the NYC Office of Emergency Management (CEM) and the EMS Command Center, Fire Department of New York to assist with the water analysis forecast of river condition of the Hudson River. Stevens Institute made specific suggestions to emergency personnel to deploy rescue assets downstream, not upstream, along Manhattan and to guide the plane eastward to the Battery area for salvage operations. Since the Battery area had the weakest currents at the time and projected future, Stevens determined that that was the easiest and safest area to try to salvage the plane. DHS support has enabled Stevens to improve the real-time data delivery, including the fusion and visualization, of information. Taken together, DHS support makes it possible for a "system" to play an important role in supporting first responders in the maritime environment, such as occurred during the rescue and recovery operations in the US Airways flight 1549 event



COE's Successes and Highlights Cont.

CREATE – ARMOR: LAX officials credited their interception of a significant number of firearms throughout the month of January 2009 to an artificial intelligence program (ARMOR) developed by the National Center for Risk & Economic Analysis of Terrorism Events (CREATE). ARMOR allows security forces to randomize patrols, searches, and check-points based on critical assets and intelligence, enabling security officials to allocate limited resources more effectively.

START – GTD: The recent 2008 terrorist attacks in India led officials to consult the Global Terrorism Database at The National Consortium for the Study of Terrorism and Responses to Terror (START). The GTD helped understand India's terrorism problem, including the frequency and impact of terrorist attacks in India since 1970. This will enable security forces to adapt strategies to counter deadly attacks. The Database includes actionable information on almost 80,000 terrorist attacks.

NCFPD – FOOD EVENT CONSEQUENCE MANAGEMENT SYSTEMS: The National Center for Food Protection and Defense (NCFPD) helped the FDA and the CDC to identify the sources of recent food outbreaks and recalls of contaminated products. NCFPD tools were instrumental in finding the jalapeno peppers that caused the 2008 Salmonella Saint Paul outbreak that sickened thousands.

FAZD – Avian Flu School: Researchers developed an Avian Flu Training for early responders. The training will avoid delayed detection and ineffective reactions. Sessions have been held in Texas, California, Minnesota, and in Africa, and are increasing in demand throughout the developing world.





Research to Improve Emergency Preparedness and Response: Guidance from Implementation Science

Brian S. Mittman, PhD

Director, VA Center for Implementation Practice and Research Support

Co-Editor in Chief, *Implementation Science*

May 4, 2010

Innovative, effective programs, best practices and research findings are not self-implementing.

Explicit efforts to implement innovations are needed, guided by research on implementation strategies, processes, barriers and facilitators.



Outline

Part 1: *Implementation and implementation research in health and medical care*

Part 2: Varieties of implementation research

Part 3: Support for implementation research



Innovation in medical treatment

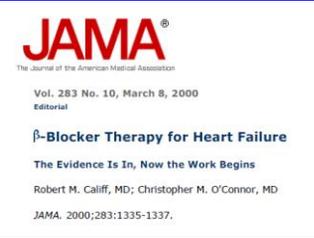
ORIGINAL CONTRIBUTION JAMA-EXPRESS

Effects of Controlled-Release Metoprolol on Total Mortality, Hospitalizations, and Well-being in Patients With Heart Failure
The Metoprolol CR/XL Randomized Intervention Trial in Congestive Heart Failure (MERIT-HF)

Conclusions In this study of patients with symptomatic heart failure, metoprolol CR/XL improved survival, reduced the need for hospitalizations due to worsening heart failure, improved NYHA functional class, and had beneficial effects on patient well-being.
JAMA. 2000;283:1295-1302 www.jama.com



Guidance and advocacy for application



JAMA
The Journal of the American Medical Association

Vol. 283 No. 10, March 8, 2000
Editorial

β-Blocker Therapy for Heart Failure

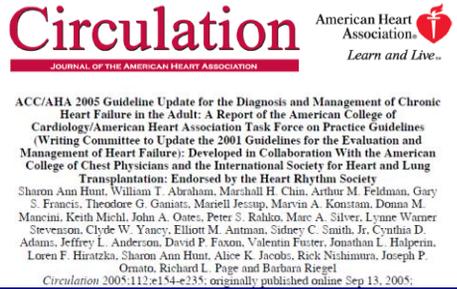
The Evidence Is In, Now the Work Begins

Robert M. Califf, MD; Christopher M. O'Connor, MD

JAMA. 2000;283:1335-1337.



Comprehensive guidance for application



Circulation American Heart Association
Learn and Live..

JOURNAL OF THE AMERICAN HEART ASSOCIATION

ACC/AHA 2005 Guideline Update for the Diagnosis and Management of Chronic Heart Failure in the Adult: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Update the 2001 Guidelines for the Evaluation and Management of Heart Failure): Developed in Collaboration With the American College of Chest Physicians and the International Society for Heart and Lung Transplantation: Endorsed by the Heart Rhythm Society

Sharon Ann Hunt, William T. Abraham, Marshall H. Chin, Arthur M. Feldman, Gary S. Francis, Theodore G. Ganiats, Marshall Jessup, Marvin A. Konstam, Donna M. Mancini, Keith Michl, John A. Oates, Peter S. Rahko, Marc A. Silver, Lynne Warner Stevenson, Clyde W. Yancy, Elliott M. Antman, Sidney C. Smith, Jr, Cynthia D. Adams, Jeffrey L. Anderson, David P. Faxon, Valentin Fuster, Jonathan L. Halperin, Loren F. Hiratzka, Sharon Ann Hunt, Ailee K. Jacobs, Rick Nishimura, Joseph P. Ornato, Richard L. Page and Barbara Riegel

Circulation 2005;112:e154-e235; originally published online Sep 13, 2005.



Additional guidance for application

Circulation

American Heart Association
Learn and Live..

ACC/AHA Clinical Performance Measures for Adults With Chronic Heart Failure: A Report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Heart Failure Clinical Performance Measures); Endorsed by the Heart Failure Society of America

Robert O. Bonow, Susan Bennett, Donald E. Casey, Jr, Theodore G. Ganiats, Mark A. Hlatky, Marvin A. Konstam, Costas T. Lambrew, Sharon-Lise T. Normand, Ileana L. Pina, Martha J. Radford, Andrew L. Smith, Lynne Warner Stevenson, Robert O. Bonow, Susan J. Bennett, Gregory Burke, Kim A. Eagle, Harlan M. Krumholz, Costas T. Lambrew, Jane Linderbaum, Frederick A. Masouli, Sharon-Lise T. Normand, James L. Ritchie, John S. Rumsfeld and Jolan A. Spertus
Circulation 2005;112:1853-1887; originally published online Sep 13, 2005;

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Adherence data (US 2002-03; UK 2005)

Adherence to Heart Failure Quality-of-Care Indicators in US Hospitals

Analysis of the ADHERE Registry *Arch Intern Med.* 2005;165:1469-1477

Gregg C. Fonarow, MD, Clyde W. Yancy, MD, J. Thomas Heywood, MD, for the ADHERE Scientific Advisory Committee, Study Group, and Investigators

Trends and inequities in beta-blocker prescribing for heart failure

Sunit M Shah, Iain M Carey, Stephen DeWilde, Nicky Richards and Derek G Cook

British Journal of General Practice, December 2008

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Trials of implementation programs

Circulation

American Heart Association
Learn and Live..

JOURNAL OF THE AMERICAN HEART ASSOCIATION

Improving Guideline Adherence: A Randomized Trial Evaluating Strategies to Increase β -Blocker Use in Heart Failure
Maria Ansari, Michael G. Shlipak, Paul A. Heidenreich, Denise Van Ostaeyen, Elizabeth C. Pohl, Warren S. Browner and Barry M. Massie
Circulation 2003;107:2799-2804; originally published online May 19, 2003.

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Trials of implementation programs

Health Services and Outcomes Research

Clinical Reminders Attached to Echocardiography Reports of Patients With Reduced Left Ventricular Ejection Fraction Increase Use of β -Blockers A Randomized Trial

Paul A. Heidenreich, MD, MS; Parisa Gholami, MPH; Anju Sahay, PhD; Barry Massie, MD; Mary K. Goldstein, MD, MS

Conclusions—A reminder attached to the echocardiography report increased the use of β -blockers in patients with depressed left ventricular systolic function. (*Circulation*. 2007;115:2829-2834.)

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The Implementation Gap: A component of the Clinical Research Crisis

- NIH recognition

SHATTUCK LECTURE
Clinical Research to Clinical Practice —
Lost in Translation?

Claude Lenfant, M.D. *N Engl J Med* 2003;349:868-74.

- NIH Roadmap (June 2003+) and CTSA program

Translational and Clinical Science — Time for a New Vision
Elias A. Zerhouni, M.D. *N Engl J Med* 2003;353:15 www.nejm.org OCTOBER 13, 2005

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Investing in discovery/development vs. fidelity

The Break-Even Point: When Medical Advances Are Less Important Than Improving the Fidelity With Which They Are Delivered

ANNALS OF FAMILY MEDICINE • WWW.ANNFAMMED.ORG • VOL. 3, NO. 6 • NOVEMBER/DECEMBER 2005

Steven H. Woolf, MD, MPH¹

Robert E. Johnson, PhD²

ABSTRACT

Society invests billions of dollars in the development of new drugs and technologies but comparatively little in the fidelity of health care, that is, improving systems to ensure the delivery of care to all patients in need.

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The "Quality Chasm" in US healthcare delivery

- Institute of Medicine (1999, 2001)



- US and international quality measurement studies

The Quality of Health Care Delivered to Adults in the United States

Elizabeth A. McGlynn, Ph.D., Steven M. Asch, M.D., M.P.H., John Adams, Ph.D., Joan Keesey, B.A., Jennifer Hicks, M.P.H., Ph.D., Allison DeCristofano, M.P.H., and Eve A. Kerr, M.D., M.P.H. *N Engl J Med* 2003;348:2635-45.



Quality comparisons: VA vs. other US

Ann Intern Med. 2004;141:938-945. IMPROVING PATIENT CARE

Comparison of Quality of Care for Patients in the Veterans Health Administration and Patients in a National Sample

Steven M. Asch, MD, MPH; Elizabeth A. McGlynn, PhD; May M. Hogan, PhD; Rodney A. Hayward, MD; Paul Shekelle, MD, MPH; Lisa Babione, MD; Joan Keesey, BA; John Adams, PhD; and Eve A. Kerr, MD, MPH

Ann Intern Med. 2004;141:272-281. IMPROVING PATIENT CARE

Diabetes Care Quality in the Veterans Affairs Health Care System and Commercial Managed Care: The TRIAD Study

Eve A. Kerr, MD, MPH; Robert B. Geroff, MS; Sarah L. Iken, PhD, RN; Joseph Y. Selby, MD, MPH; John D. Piette, PhD; J. David Curb, MD, MPH; William H. Herman, MD, MPH; David G. Marrero, PhD; K.M. Venkat Narsyan, MD, MSc, MBA; Monika M. Safford, MD; Theodor Thompson, MS; and Carol M. Hunsinger, MD, MPH



Implementation research definition

Implementation research is the scientific study of **methods to promote the systematic uptake of research findings** and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of **health services**.

It includes the study of **influences on healthcare professional and organizational behavior**.

1. Develop and evaluate implementation programs
2. Study implementation processes, barriers, facilitators



Implementation research goals

1. Develop reliable strategies for improving health-related processes and outcomes; facilitate widespread adoption of these strategies
2. Produce insights and generalizable knowledge regarding implementation *processes, barriers, facilitators, strategies*
3. Develop, test and refine implementation theories and hypotheses; methods and measures

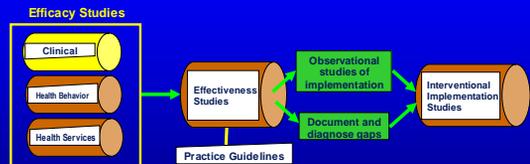


Outline

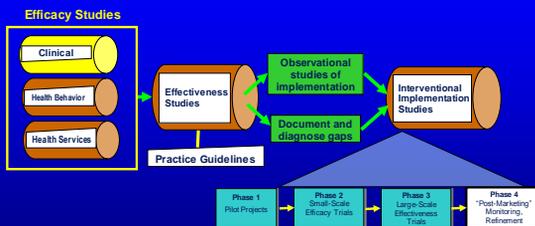
- Part 1: *Implementation and implementation research* in health and medical care
- Part 2: Varieties of implementation research
- Part 3: Support for implementation research



VA QUERI research-implementation pipeline: Pre-implementation studies



VA QUERI research-implementation pipeline: Phased implementation trials



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Key features of implementation trials

- Heterogeneity of settings, interventions
- Context dependence, weak main effects
- Process and mechanism (vs. outcome/impact) focus
- Protocol-driven intervention adaptation
- External validity vs. internal validity
- Sustainability, scale-up/spread potential, economic evaluation

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Key features of implementation trials (cont.)

- Composite outcome/quality measures, proxy measures
- Casemix adjustment
- Cluster randomization
- Adaptive designs
- Representative sampling paradox

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Outline

- Part 1: *Implementation and implementation research in health and medical care*
- Part 2: Varieties of implementation research
- Part 3: Support for implementation research

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CIPRS Goals and Programs

- **Practice:** strengthen and support VA implementation practice efforts conducted by VA healthcare operations programs
 - via general (leveraged) forms of technical assistance, education and resource/tool development
 - (future) via individual technical assistance, consultation, education and other forms of support
- **Research:** strengthen, expand VA implementation research capacity, skills and performance
 - via individual and leveraged forms of technical assistance, consultation and education for current and new VA implementation researchers
 - via contributions to continued development of field

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National, international resources

- NIH Conference on the Science of Dissemination and Implementation (2007, 2009, 2010)
- NIH PARs
- NIH- and AHRQ-funded training programs
- Journals: *Implementation Science*, *Translational Behavioral Medicine*, special issues of general and specialty journals
- CTSAs (selected)
- PBRNs
- VA QUERI
- Knowledge Translation Canada (network), other CIHR programs

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Local resources

- Medical schools: Family Medicine, GIM, Geriatrics, Preventive Medicine
- Public health schools: health services, healthcare management, community health departments
- Nursing schools: research utilization programs
- Main campus: management schools, education schools, public policy schools, psychology departments (and sociology, anthropology, political science, economics)



Critical resources

- Practice-based research network or related lab
- Social/behavioral science expertise
- Management, leadership skills (training, aptitude)
- Local, regional and national policy/practice engagement and contributions (and academic recognition and credit)



Establishing a comprehensive healthcare emergency management competency framework and taxonomy

Joseph A. Barbera, MD
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Clinical Associate Professor of Emergency
Medicine
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Competency Framework & Taxonomy

Initial Questions:

'What **exactly** is a competency?'

'What are they used for?'

Session Objectives:

Answer the questions and briefly
describe their application....

Competency Framework & Competencies

Competency literature review:

- "All over the map..."
- Mixing preparedness and response; ignoring recovery
- Often vague – commonly presented as "abilities" or as character traits; rarely objective & measurable
- Application and use varies widely
- End User Value??? Unclear how they are helpful

Competency Framework & Competencies

Historical (1970s) Competency Rationale:

- *Enhance the then common "job analysis" by relating a position's requisite knowledge, skills and abilities to the overall objectives of the organization in which the position exists.*

Competency Framework & Competencies

Historical Competency Rationale:

- *Aligns the objectives (i.e., desired outputs) of individual jobs with the overall objectives of the organization.*

Competency Framework & Competencies

Historical Competency Rationale:

- *Organizational objectives are then achieved through effective individual job performance.*

Competency Framework & Competencies

ICDRM Competency Analysis Findings:

- Competencies, developed within a carefully defined competency framework, **provide the 'common denominator'** for personnel-related qualifications in Emergency Management Mitigation, Preparedness, Response and Recovery.



Competency Framework & Competencies

ICDRM Competency Definition

- A specific knowledge element, skill, and/or ability that is objective and measurable (i.e., demonstrable) on the job. It is required for effective performance within the context of a job's responsibilities, and leads to achieving the objectives of the organization.

Competency Framework & Competencies

Competency Organization

- "Program Competencies": address mitigation & preparedness phases of CEM
- "Emergency Response & Recovery Competencies": address response & recovery phases of CEM

Competency Framework & Competencies

Competency Organization

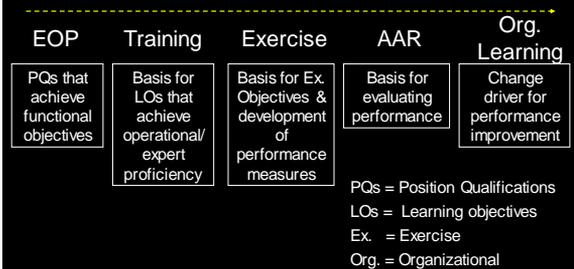
- Primary & Supporting Competencies: provides for prioritization
- Proficiency levels established for primary competencies

Competency Framework & Competencies

Competency Proficiency

- Proficiency defined: "The degree of understanding of the subject matter and its practical application through training and performance..." (FEMA US&R IST Student Manual, 2004)
- Designated Levels:
 - ✓ Awareness
 - ✓ Operations
 - ✓ Expert

Competencies as the Common Denominator in Emergency Management



Competency Framework & Competencies

Job Groups:

- EM Program Managers
- HS Facility Leaders
- Patient Care Providers
- Clinical Support Services
- Facility & Engineering Services
- Police & Security Services

Competency Framework & Competencies

- Align job objectives with organization's objectives – organizations now must be NIMS-consistent, so response competencies are ICS and EOP framed...
- Organized in a tiered fashion: core, job group, functional, job-specific *with proficiency levels*...
- Generic to like organizations but *customized by referring to key organization-specific documents*

Competency Framework & Competencies

Competency Grouping Strategy

'Core Competencies'

All Personnel

Competency Framework & Competencies

Competency Grouping Strategy

'Job Group Competencies'

HSL EPM PCP CSS PSS FES

'Core Competencies'

All Personnel

Competency Framework & Competencies

Competency Grouping Strategy

'Function-related Competencies'

Hospital IMT DECON Team Triage Team Perimeter Team

'Job Group Competencies'

HSL EPM PCP CSS PSS FES

'Core Competencies'

All Personnel

Competency Framework & Competencies

Competency Grouping Strategy

'Individual Job Competencies'

'Function-related Competencies'

Hospital IMT DECON Team Triage Team Perimeter Team

'Job Group Competencies'

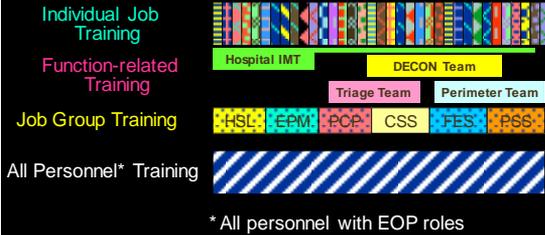
HSL EPM PCP CSS PSS FES

'Core Competencies'

All Personnel

Competency Framework & Competencies

Training Strategy



Competency Framework & Competencies

Function-related competency sets recently developed...

Personnel Deployment Competencies for Distant Emergencies

Completed & Submitted July 2009

Primary Core Response Competency: Example

AP-R8: Follow the general response procedures for 'all personnel' in the Occupant Emergency Procedures (OEP) and assist others (healthcare system personnel, patients, and visitors) as necessary to accomplish the OEP directives. [Footnote: More specific response procedures are addressed under respective job groups.]

Proficiency level: **Operational**

Supporting Competencies

Knowledge

- AP-R8.1: Describe the component parts of the OEP and your responsibilities and actions under each.
- AP-R8.2: Describe circumstances that could lead to OEP activation and your responsibilities during OEP activation.
- AP-R8.3: Describe the reporting procedures for your job position that would activate the OEP.

Skills

- Execute your roles and responsibilities for the facility OEP by conducting the OEP directives for your job position in evacuation, shelter in place, or other actions during emergency operations.

Primary Job Group Response Competency: Example

HSL-R5: Ensure that the system's incident management is effective, utilizes Emergency Operations Plan (EOP) procedures and processes, and uses a pro-active 'management by objective' approach.

Proficiency level: **Expert**

Supporting Job Group Competencies: Example

HSL-R5: Ensure that the system's incident management is effective...

Skills

- FLC-5.4: Ensure the clear delineation of the facility's operations cycle by establishing and disseminating the timing of planning meetings and operational periods.
- FLC-5.5: Ensure facility objectives are met by supervising the development, analysis, and revision of facility response strategies and general tactics.

Personnel Deployment Competencies for Distant Emergencies

- PD-P1: Maintain "personal readiness" for personnel deployment.
- PD-P2: Maintain "family readiness" for personnel deployment.
- PD-P3: Maintain "professional readiness" for personnel deployment.

Personnel Deployment Competencies for Distant Emergencies

- PD-P3: Maintain "professional readiness" for personnel deployment.
- Skill
- PD-P3.10: Maintain for review and for deployment copies of current professional documentation (licenses, certifications, healthcare practice privileges, required training certificates and identification cards) necessary for your projected professional roles while deployed.

Personnel Deployment Competencies for Distant Emergencies

- PD-R1: Receive and respond to notification at all times when on call for deployment according to the home organization's protocols.

Knowledge

PD-R1.1:

Describe the method(s) to receive notification indicating a potential deployment and procedures you are responsible to maintain when on call for deployment.

Personnel Deployment Competencies for Distant Emergencies

- PD-R1: Receive and respond to notification at all times when on call for deployment according to the home organization's protocols.

Skill

PD-R1.4:

Demonstrate the use of the communication device(s) for receiving and responding to notification and follow on deployment information.

Personnel Deployment Competencies for Distant Emergencies

- PD-R1: Notification
- PD-R2: Mobilization tasks
- PD-R3: In-transit tasks
- PD-R4: Initial engagement activities
- PD-R5: General incident operations performance
- PD-R6: Specific job performance
- PD-R7: Safety, Security & Health Maintenance
- PD-R8: Demobilization activities
- PD-R9: Recovery Activities

Competency Application Investigation

Research objectives

- Determine whether the competencies were applied within the VHA EMT/SHG program.
- Catalogue the uses and impact of the competencies on the VHA emergency management program and its products.

Competency Application Investigation

Research methods

- Informal unstructured interviews.
- Document analysis.

Identifying use of competencies & resultant programmatic change.

Competency Application Investigation

Research findings

- Informed the EMSHG/VHA Capabilities Assessment Program.
- Served as the basis for the current basic certification program VHA Emergency Program Managers & Healthcare System Leaders.
- Used in DEMPS for a gap analysis, DEMPS program changes & training development.
- Referenced in VHA EM Program Guidebook.

Establishing a comprehensive healthcare emergency management competency framework and taxonomy

Conclusion:

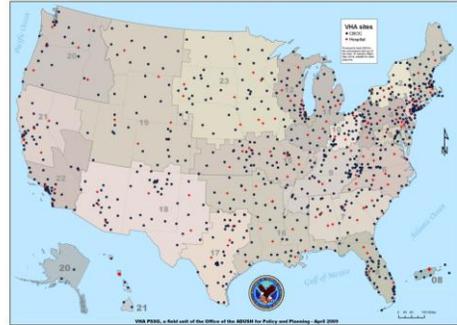
- Carefully developed competency sets within an organized competency framework can provide consistent guidance for personnel resources across the EM Program.
- The more granular and function-specific the competency sets, the more valuable they become for programmatic use.

Establishing a comprehensive healthcare emergency management competency framework and taxonomy

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Medicine
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Florida Veterans and the 2004-2005 Hurricane Seasons: An Analysis of PTSD and Mental Health Utilization.

Barnett SD, Hickling EJ, Brown LM,
Olney R, Campbell RR, Sison GFP
HSR&D/RR&D Center of Excellence:
Maximizing Rehabilitation Outcomes



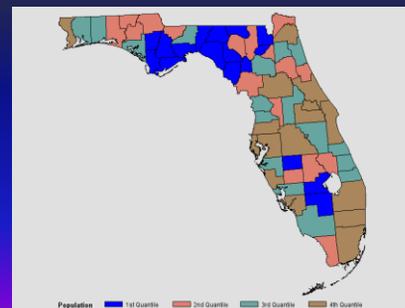
Introduction

- FY09 - VISN 8 (FL [Peninsula], southern GA & PR) comprised 11% of the age 75+ unique users of the VHA system
 - 50% > than next VISN (Which happens to be Gulf Coast of Texas, Mississippi, etc.)
- 11-14% of all Veterans suffer PTSD
- 20-25% report substance abuse issues
 - Nationwide, the VHA offers 200 programs for substance abuse

Introduction, cont.

- 2004-2005 hurricane seasons:
 - 47 named storms;
 - 9 reaching \geq category 3
 - Deaths: 208 (2004, 144; 2005, 64)
 - Cost: \$18B, 2004; \$93B, 2005)
- Charley (2004) \$15B; Ivan (2004) \$14B; Frances (2004) \$9B; Dennis (2005) \$2 Billion; etc....

2004 Florida Veteran Population



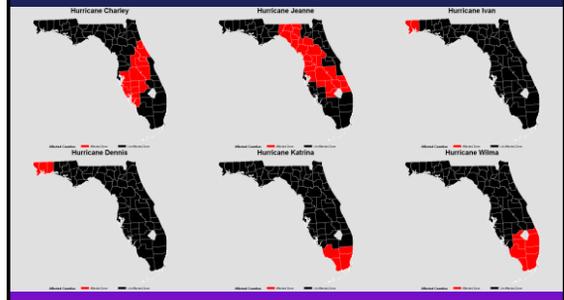
2004-2005 Hurricane Season



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2004-2005 Florida Hurricane Tracks



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Methods

- Data abstracted from the VHA Medical Outpatient SAS dataset: FY04 - FY06
- Mental health Dx - ICD9-CM: 290-319.
- Veterans were classified with PTSD if they presented for a PTSD related outpatient visit w/in 10 months prior to the August 2004

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Methods, cont.

- Monthly outpatient alcohol utilization rates were based on utilization presented as the average number of outpatient visits using CCS category: 660; ICD-9-CM: 291.xx; 303.xx).
- Counties impacted by category 3 or 4 storms were identified using NOAA tracking data.
- Veteran residents of these counties were the cohort considered for this analysis.

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Methods, cont.

- Rates were calculated by dividing:

$$\text{Rate} = \frac{\text{number of monthly visits per ICD-9 code}}{\text{total number of visits}}$$
 where:

$$N = \text{frequency of visits per Veteran per ICD-9}$$

$$D = \text{total number of monthly visits per Veteran}$$
- Individual rates were expressed as %, then averaged across groups

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Results

153,511
 Unique Florida Veterans
 =
 1,492,057
 Mental health visits;
 =
 836,518
 Days of mental health encounters;

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Demographics

	PTSD	Non-PTSD
N	15,331	138,180
Age	57.5 ± 11.6	59.2 ± 15.1
Married	56.8%	48.0%
Male	92.4%	91.4%
White	44.3%	28.0%
% Service Connected	50.2 ± 37.2	17.1 ± 30.2
No. Codes per Visit	1.6 ± 1.1	2.0 ± 1.7

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Demographics, cont.

	Hurricane Impacted County		Non-Hurricane Impacted County	
	PTSD	Non-PTSD	PTSD	Non-PTSD
N	5,843	54,997	9,488	83,183
Age	51.5 ± 15.1	59.2 ± 15.1	57.8 ± 11.0	58.1 ± 14.6
Married	56.9%	48.0%	59.8%	49.3%
Male	56.9%	48.0%	59.8%	49.3%
White	47.8%	30.8%	42.1%	26.0%
% Service Connected	51.5 ± 37.3	16.9 ± 30.2	52.4 ± 37.1	17.4 ± 30.3
No. Codes per Visit	1.2 ± 0.6	1.3 ± 0.9	1.2 ± 0.5	1.4 ± 0.9

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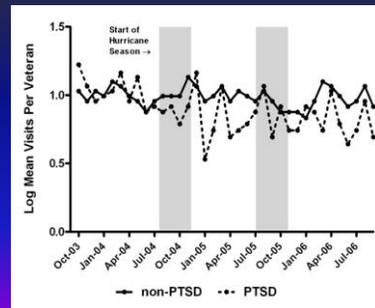
Mental Health Utilization

	Hurricane Impacted Counties		Non-Hurricane Impacted Counties	
	PTSD+	PTSD-	PTSD+	PTSD-
Unique Veterans (n=153,311)	5,843 (9.6%)	54,997 (90.4%)	9,488 (10.2)	83,183 (89.8)
Total Daily Visits (n=395,218)	73,858 (22.0%)	262,444 (78.0%)	116,350 (23.3)	383,866 (76.7%)
CPT 90804, PSYTX, Office 20-30 min	7,474 (10.1%)	23,307 (8.9%)	10,109 (8.7)	31,677 (8.3%)
CPT 90805, PSYTX, Office, 20-30 min w/E&M	17,790 (24.1)	53,274 (20.3%)	34,398 (29.6%)	93,313 (24.3%)
CPT 90806, PSYTX, Office, 45-50 min	12,129 (16.4)	27,751 (10.6%)	21,068 (18.1%)	42,816 (11.2%)
CPT 90807, PSYTX, Office 45-50 min w/E&M	4,663 (6.3)	10,479 (4.0%)	8,388 (7.2%)	23,487 (6.1%)
CPT 90893; Group Psychotherapy	22,421 (30.3)	34,411 (13.1%)	31,591 (27.2%)	34,220 (8.9%)

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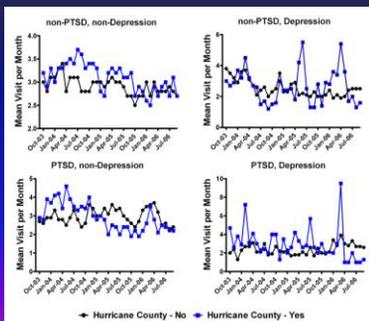
Results



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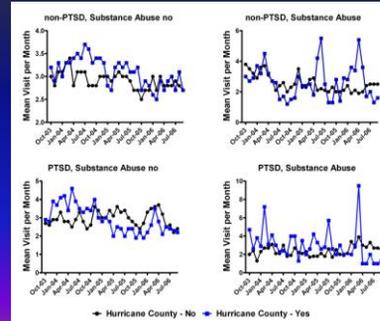
16

Results, cont.



17

Results, cont.



18

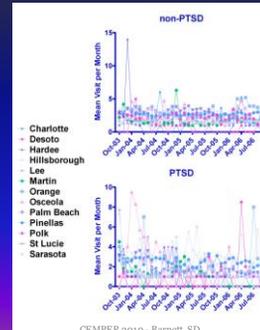
Select Florida Counties

County	FIPS Code
Charlotte	15
DeSoto	27
Hardee	49
Hillsborough	57
Lee	71
Martin	85
Orange	95
Osceola	97
Palm Beach	99
Pinellas	103
Polk	105
Saint Lucie	111
Sarasota	115

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Results, cont.



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Results, cont.

- PTSD Veterans residing in counties affected by hurricane paths and diagnosed prior to hurricane season demonstrated an immediate 28% increase in utilization following landfall when contrasted with PTSD Veterans residing in non-hurricane affected counties (+28.0% vs. -6.5%, $p < 0.001$).
- Veterans in affected counties were found to utilize more group psychotherapy trt sessions overall (30.3% vs. 27.2%, $p < 0.001$).

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Results, cont.

- Veterans ($n=60,666$) w/in those select hurricane impacted counties, accounted for 72,625 daily alcohol related disorder visits (PTSD: 7,955 [11.0%]; non-PTSD: 64,670: [89.0%]).
- PTSD veterans averaged 2.5 (± 0.2) alcohol related visits/mth compared to 2.7 alcohol related visits/mth for PTSD- veterans.
- In the 8 mths prior to the 2004 hurricane season, PTSD veterans avg 2.9 (± 0.3) visits/ mth; after the 2004 season, visits decreased to 2.3 (± 0.3) visits/mth.
- PTSD pts experienced a -0.25/mth ($p < 0.001$) decrease in alcohol related visits during the study period.

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Limitations

- Definition of PTSD
- Definition of Hurricane Affected County
- Too many visits

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Conclusions

- A large proportion of vulnerable Veterans reside in disaster prone areas
- Natural Disasters affect mental health utilization among vulnerable Veterans, specifically PTSD
- Future work should determine whether decreased utilization is Vet based or provider based

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Use of Outpatient Mental Health Services by Homeless Veterans after Hurricanes

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Background

- Since the 2005 hurricanes, more than 300 scholarly articles have been published noting the psychological effects on people who became homeless after the storms.
- To date, none have examined the impact of hurricanes on people who were already homeless when the hurricane struck.



Background

- The 2004 and 2005 Hurricane seasons represented two of the most productive storm seasons in Florida history with 47 named storms and 9 reaching category ≥ 3 (sustained winds 113-130 mph) status.
- This study examined the effects of hurricanes and VA outpatient mental health service utilization by homeless veterans living in Florida.



Adapted from

Study Design and Method

- Data from the Veterans Health Administration Outpatient Medical Dataset during VHA fiscal years 2004-2006 was used to capture all outpatient mental health encounters for select CPT (Current Procedural Technology) codes.
- Outpatient data was coded using the *International Classification of Diseases – 9th Revision* (ICD-9-CM). Mental health encounters were abstracted for a primary diagnosis: ICD-9-CM 290-319.



Study Design and Method

- Specific CPT codes of interest were:
 - ✓ 90804/90805 w/E&M - PSYTX, office, 20-30 minutes
 - ✓ 90806/90807w/E&M - PSYTX, office, 45-50 minutes
 - ✓ 90853 - Group Psychotherapy.
- Homelessness was defined as a "point-in-time" measure - veterans self-described as homeless prior to start of the 2004 hurricane season



Study Design and Method

- Five separate mixed effects models were calculated, one for each CPT, to assess the relationships of hurricane county residence, homelessness, age, gender, service connectedness, and marital status on average monthly CPT utilization rate per veteran.
- Statistical significance was set at $p < 0.05$, two-tailed.

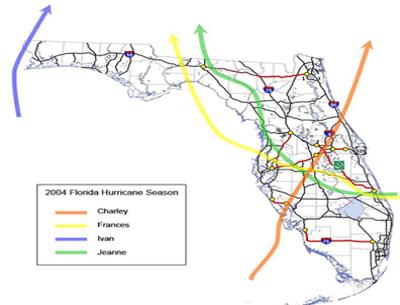


Study Design and Method

National Oceanic Atmospheric Administration (NOAA) tracking data was used to determine hurricane affected counties: Charlotte, De Soto, Hardee, Hillsborough, Lee, Martin, Orange, Osceola, Palm Beach, Pinellas, Polk, St Lucie, and Sarasota.



Study Design and Method



Demographic Results

- During the study period, homeless veterans comprised 7% (n=1,033) of all Florida veterans (n=153,511)
- Veterans from hurricane affected counties comprised 39.6% (n=60,840); homeless veterans 1.0% (n=551)



Demographic Results from Hurricane Affected Counties

- **Veterans** averaged 59.1 ± 14.9 years of age and 49.2% were married compared to **non-hurricane affected veterans** who were $58.1 \pm 14.3 \pm 14.3$ years of age and 50.6% married
- **Homeless veterans** averaged 52.5 ± 8.0 years of age and 8.9% married compared to **non-hurricane affected homeless veterans** who were 52.1 ± 7.9 years of age and 6.8% married
- Although the percentage of single veterans was similar across groups, homeless veterans were more likely to be divorced



Results

Homeless veterans residing in hurricane affected counties were significantly more likely than homeless veterans living in non-affected counties to:

- receive more treatment for anxiety (94.6% vs. 5.8%, $p < 0.001$) and PTSD (20.0% vs. 12.9%, $p < 0.002$)
- participate in group psychotherapy (32.4% vs. 13.4%, $p < 0.002$), but less likely to participate in individual therapy (3.55% vs. 17.3%, $p < 0.001$)



Implications

- In the United States evacuations of over 1,000 people occur more than 3 times per month and on average slightly more than 1 presidentially declared disaster occurs weekly
- 2009 annual census estimated 107,000 homeless veterans
- Homeless veterans may be at particular risk for experiencing negative outcomes after disasters due to their pre-existing mental health functional status and general lack of resources



Implications

- Previous research indicates that even with specialized mental health care currently offered by the VA system, homeless veterans with mental illness are at increased risk of mortality compared to the general population under normal conditions
- Disasters amplify risk for morbidity and mortality



Implications

- This study is the first to document the effects of hurricanes on use of outpatient mental health services by homeless veterans, but additional research should be conducted to protect this at risk population.
- At present, the VA has approximately 4,000 agreements with community partners who provide a variety of services to homeless veterans



Recommendations

- Unlike hospitals, nursing homes and other health care systems that are well integrated with emergency operation centers and emergency planners, little is known about the ability of community agencies to assist homeless veterans during and after disasters.
- The federal government has granted more than \$11 billion for state and local governments to develop comprehensive emergency management plans.



Recommendations

- It is rare that the needs of homeless people are addressed in these plans.
- Although FEMA and other federal agencies refer to homeless people as a "special needs population", the official definition of "special needs population" used by the federal government as it appears in the National Response Framework does not include homeless people.



Recommendations

- Research should be conducted to review existing plans by community agencies, evaluate integration with community resources and emergency planners, and identify barriers to providing care to homeless veterans before, during, and after disasters.
- Given that it is unlikely that the number of disasters will diminish in the coming years, increased availability of specific services for homeless veterans require consideration.



Recommendations

- Future efforts include providing assistance to community providers in developing comprehensive disaster plans for coordinating services and providing care to homeless veterans during disasters.



Research Proposal: Clinicians Participation in Emergency Management Training

By
Willie K. Carley, MS, MEP, ABCP
VISN 3 Network Emergency Management Program
Coordinator

Outline

- Problem Statement
- Purpose of the Study
- Definitions
- Hypotheses
- Methodology
- Preliminary Recommendations
- References

Problem Statement

- Clinicians infrequently participate in emergency management training within healthcare facilities due to a variety amount of barriers.

Purpose of the Study

- Identify the barrier that prohibit clinicians from participating in emergency management training within a healthcare facility.
- Demonstrate the difference in a Comprehensive Emergency Management Program with and without clinician participation.
- Provide recommendations on how to increase clinicians participation in emergency management training within a health care facility.

Clinicians Defined

- Physicians, Physician Assistants,
- Registered Nurses, Licensed Practical Nurses, nurses working within expanded roles (CRNA, RNP, and others)
- Emergency Medical Technicians, Paramedics
- Respiratory Therapists and others who provide direct clinical patient care

Barrier: Defined

- The term barrier is being used to depict any noticeable or unnoticeable natural bar; obstruction; or hindrance in the access of a clinician in participating in emergency management training.

Hypotheses

- Barriers prohibit clinicians from participating in emergency management training.
- Clinicians who work in healthcare arenas without barriers are more likely to participate in emergency management training than clinicians who work in a facilities with barriers.
- Healthcare facilities which have a higher rate of clinicians participating in emergency management training will have a more efficient Comprehensive Emergency Management Program.

Null Hypotheses

- Barriers will **NOT** prohibit clinicians from participating in emergency management training.
- Clinicians who work in healthcare arenas without barriers are **NOT** more likely to participate in emergency management training than clinicians who work in a facilities with barriers.
- Healthcare facilities which have a higher rate of clinicians participating in emergency management training will **NOT** have a more efficient Comprehensive Emergency Management Program.

Methodology

- Literature Review of identified barriers
- Mix Methods Study

Literature Review

- Identified Barriers
 - Knowledge, Competency, Leadership Support
- Best practices for recommendations

Literature Review: Knowledge

- McSwain (2005) posit, most physicians in the USA are not informed about disaster management, have only a very superficial knowledge of the preparations made by their individual hospitals or within their community, and have not participated in local disaster drills (p.1).

Literature Review: Knowledge cont...

- All clinicians, regardless of their specialty, must have enough basic information about the clinical manifestations of infections caused by the select agents of bioterrorism to raise their suspicion when they see a patient with a compatible illness (Spranger, Cathy, Villegas, Dorian, Kazda, Michael, Harris, Ann Marie, Mathew, Shane, and Migala, Wiltold, 2007, para, 5).

Literature Review: Knowledge cont...

- The U.S. Department of Health and Human Services (2010) reported “Physicians aren't confident they can recognize infections from anthrax and other bioterrorism disease threats; 71 % of a mailed survey to physicians, stated that they were "not confident" recognizing 5 of the 6 infectious agents” (para 1).

Literature Review: Competency

- Kristine et al (2009) supports “the need for clinicians to have emergency preparedness competencies” (p.83)
- However, “outside of the select clinicians who work in emergency medical services or National Disaster Medical Systems units, few clinicians have frequent opportunities to practice in preparation for emergencies” (p.84).

Literature Review: Competency cont...

- Slepki (2007) states “As a consequence, very little is known about what knowledge, skills, and abilities or professional competencies are needed or if these competencies change in each disaster phase” (p.99).

Literature Review: Leadership Training Support

- Ablah, Tinius, and Konda (2009) “data on barriers and challenges, lessons learned, and best practices posits’ that one of the barriers to clinicians participating in emergency preparedness training is the “Lack of Support for Emergency Preparedness Training”” (p.831).

Literature Review: Leadership Training Support cont...

- According to Ablah et al (2009) “emergency preparedness training competes with time dedicated to professional responsibilities and mandated continuing education. For most healthcare organizations, time spent in emergency preparedness training is time spent away from treating patients; this means lost revenue (p.831).

Methodology

- Mix Methods Study
 - Booz Allen Hamilton Studies
 - Assess VAMCs Clinician training records
 - Survey Clinicians
 - Disaster Emergency Medical Personnel System

Booz Allen Hamilton Study

- VHA Comprehensive Emergency Management Program National Education & Training Needs (2009)
- Comprehensive Emergency Management Program (2008-2010)

Data Collection Tools

- VISN Emergency Management Questionnaire
- Education Department Questionnaire
- Medical Center Questionnaire
- Clinician Questionnaire
- DEMPS Questionnaire
- VISN Emergency Management Worksheet
- Education Department Worksheet
- Medical Center Worksheet
- Clinician Worksheet
- DEMPS Worksheet

Preliminary Recommendation

Preliminary Recommendation

- According to Booz Allen Hamilton (2005) VA should devote the necessary resources to provide a greater accountability in training for clinicians (p.54).
- Clinicians themselves have emphasized their lack of skills and knowledge in this area, there should be a rapid development and dissemination of problem-based learning CME courses in bioterrorism preparedness (Hartwig, Burich, Cannon et al, 2009, p.47).

Preliminary Recommendation cont...

- Healthcare industries with the assistance of the education services should provide targeted emergency management training for clinicians.
- Gebbie et al (2009) “training must be straight forward, jargon-free, and sufficiently short so that it fits within the busy lives of those who are responsible for the health of the community” (p.87).

Preliminary Recommendation cont...

- Research the targeted areas within the healthcare industries to maximize clinician training in emergency management and its benefits to healthcare. Further analysis should be completed of the 2009 Booz Allen Hamilton Needs Assessment.

Preliminary Recommendation cont...

- According to Silenas (2008) “In 2003 the Association of American Medical Colleges (AAMC) issued a report titled “Training Future Physicians about Weapons of Mass Destruction,” which provided guidance to medical schools for content and teaching methods for incorporating bioterrorism preparedness into all 4 years of their curricula (p. 62).

Questions/Comments

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Thank you

VA HSR&D Center for the Study of Healthcare Provider Behavior

Evacuation of Veterans from Nursing Homes Due to Katrina and Rita

Aram Dobalian, PhD, JD
 Maria Claver, PhD, MSW
 Jacqueline J. Fickel, PhD

Hurricane Katrina

FIGURE 1. Colors of a satellite infrared image indicate varying cloud-top temperatures of Hurricane Katrina at landfall — August 29, 2005

Photo/Associated Press/National Oceanic and Atmospheric Administration

VA HSR&D Center for the Study of Healthcare Provider Behavior

Hurricanes Katrina and Rita

- ▶ August 29, 2005: Hurricane Katrina struck Gulf Coast
 - Deadliest hurricane since 1928
 - Likely costliest natural disaster on record in U.S.
 - Storm-induced breaches in levee system surrounding New Orleans flooded 80% of city
- ▶ Hurricane Rita made landfall 26 days later near Texas-Louisiana border
 - Forced stoppage of response activities in New Orleans and evacuation of coastal regions of both states

MMWR, January 20, 2006 / 55(02);29-30
 March 10, 2006 / 55(09);229-231

VA HSR&D Center for the Study of Healthcare Provider Behavior

Katrina's Impact

- ▶ Katrina disrupted basic utilities, food-distribution systems, health-care services, and communications in large portions of Louisiana and Mississippi
 - More than 200,000 persons displaced to evacuation centers in at least 18 states

MMWR, January 20, 2006 / 55(02);29-30
 March 10, 2006 / 55(09);229-231

VA HSR&D Center for the Study of Healthcare Provider Behavior

Nursing Home Care for Veterans

- ▶ VA provides nursing home care either
 - Directly through VA nursing homes
 - OR indirectly through contracts with non-VA facilities in State Veterans Homes and Community Nursing Homes

VA HSR&D Center for the Study of Healthcare Provider Behavior

Why Study Evacuation?

- ▶ Disaster research on evacuations of residents is minimal
 - Little work on VA facilities and nothing on contract homes
 - Little on nursing homes, minimal on hospitals

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Why Study Nursing Homes?

- ▶ Nursing homes often overlooked as health resource and excluded from disaster-relief plans
- ▶ Residents especially vulnerable
 - First reported deaths out of New Orleans were three non-VA nursing home residents who died during an evacuation to Baton Rouge
 - At one non-VA nursing home, 34 residents drowned
 - Allegations that some non-VA nursing home residents who died after Katrina were abandoned by caregivers
 - Hurricane Rita: Seven fatalities directly related & 55 indirectly related
 - Including >20 evacuating non-VA nursing home residents killed in bus accident



Objectives

- ▶ To understand processes related to variations in evacuation and response in VA nursing homes following Hurricanes Katrina and Rita
- ▶ To understand impact of evacuations on quality of care for veterans who were residents in these facilities
 - Funding source: VA HSR&D (RRP 06-134; PI: Dobalian)



Background: Katrina's Impact on VA & Veterans

- ▶ 2 VA nursing homes evacuated (116 beds)
 - New Orleans VAMC housed a 60-bed transitional care unit
 - Gulfport VAMC had a 56-bed nursing home and dementia unit
- ▶ 2 State Veterans Homes evacuated (222 beds)
- ▶ VA evacuated veterans from many Community Nursing Homes



Katrina's Impact on VA Medical Centers

- ▶ Prior to Katrina's landfall, inpatients at the Gulfport VAMC were evacuated to other VAMCs
- ▶ After Katrina hit, 10 inpatients on ventilators at New Orleans VAMC were evacuated to Baton Rouge
- ▶ 98 patients were evacuated September 1 using a VA truck convoy and flown to Houston, Jackson, and Alexandria
- ▶ Remaining 94 patients (along with 367 staff and family members) were evacuated next day



Katrina's Impact on VA Medical Centers (cont)

- ▶ VA evacuated Biloxi VAMC, and assisted with the evacuation of veterans (and some non-veterans) from many State Veterans Homes & Community Nursing Homes
- ▶ One VA facility attempted to evacuate some of its residents prior to Hurricane Rita, but found that promised transportation was unavailable
 - State of Texas took control of most transportation services prior to Rita making landfall
 - Many veterans in community who required home health services (e.g., 24-hour oxygen) were unable to travel to VAMC to seek shelter



Methods

- ▶ Semi-structured, one-hour key informant interviews
 - VA administrators and providers
 - Purposeful sampling: staff asked to identify important personnel involved in the evacuations
 - Most interviews conducted via telephone
- ▶ To understand organizational and individual determinants of response



Sample Characteristics

- ▶ Conducted 13 interviews with VA nursing home administrators, healthcare providers (e.g., director of nursing, RN/LPN), and other VA personnel (e.g., facility operations) in 4 affected VA facilities (up to 23 months after Katrina)
 - Conducted 2 additional "background" interviews with VISN representatives (few months after event)
- ▶ Focus of today is on Katrina not Rita
 - Interviews examined receiving and sheltering



Conceptual Model Informed Interview Guides

- ▶ Interviews built on two conceptual models
 - Organizational-level model: evacuation processes & outcomes influenced by
 - Organizational characteristics of facility (e.g., co-located near VAMC)
 - Nature of disaster (e.g., advance warning)
 - Environment (e.g., availability of emergency services)
 - Extent of preparedness
 - Patient-level structure-process-outcomes (SPO) quality of care model



Hypotheses

- ▶ The *central hypothesis* of this proposal is that facilities that (1) adhered to more specific, detailed emergency plans, (2) engaged in regular preparedness exercises, and (3) had better communication and collaboration with federal, state, and local emergency entities, executed a more effective response to Katrina and Rita



Analytical Plan

- ▶ Interviews conducted by 2+ researchers
 - One led interview while second took notes
 - Digitally audiotaped and transcribed
- ▶ Investigators identified themes in data before, during, and after data collection
 - Themes come from literature reviews, investigators' a priori understanding, and data
 - To deduce themes, researchers read through all interview notes & looked for examples that suggest processes, actions, assumptions, and consequences
 - Also looked for repetitions across respondents



Analytical Plan (cont)

- ▶ After separately examining data, researchers came to agreement about which themes to examine in more detail
 - Themes then abstracted from interviews and organized into a matrix of coding categories by interview site
 - Analysis aggregated overall themes, as well as compared and contrasted across sites



Major Themes

- ▶ Administrators primarily relied on local resources, prior experience, and local planning rather than state and federal emergency response systems
 - *We had two satellite phones, but they didn't work. It was awful. You'd be surprised. We had no Outlook, we had no telephone, we had no communication with the outside world for days. You know, we had all the internal stuff, we could communicate on the old Vista and we had the medical records and all that.*
 - *Those days I had a little conversation with the VISN, but mostly we made our own decisions. I wasn't able to get hold of Washington much. Our key staff, we were up day and night for a few days and we were trying to do the right things but they have the ability to make our own decisions.*
 - *Who makes those decisions and knowing who to get and making sure they realize that you'd better be answering your phone Friday night if the storms hit Monday because I've got to pull the trigger Friday. In Washington, that's not their job to be thinking through all the dominoes and all the things that have to happen.*



Major Themes(cont)

- ▶ There is substantial difficulty in evacuating frail nursing home residents
 - *You have to be really careful that we don't put patients in a vehicle or even an ambulance that you think is a 3-hour trip and it turns into 10 hours without food and proper medicines. The lead time is worrisome.*
 - *I'm not sure too many people in Washington have a full concept of how complex it is evacuating an entire facility and the risks that you take in moving all those patients. You have to weigh those risks. I don't know who is going to make the decision this year if something hits. I don't think the decision's going to be made easily because someone's going to say, 'God, after what happened in New Orleans, how do we not evacuate?'*
- ▶ It is difficult to retain staff and a viable organization during and after a disaster
 - *Most of the place was just flooded with debris, 10-15 feet high. We didn't know what else was under that debris. I think a day or so later they found a number of bodies under there. We went over there and assessed the campus. We got the guns out of there. We really didn't do any salvage because it was too dangerous. That was one of the things that we didn't prepare for. [H]ow do you salvage or go through 30 feet of debris? It was dangerous just to walk around. So we got the guns, made sure that the narcotics seemed to be locked safely, and decided that we would post two officers and a vehicle at the back where nobody could really drive in.*



Major Themes(cont)

- ▶ Although VA's response was generally viewed as positive, most respondents stated that luck played a major role
 - *The whole time, no one thought it was going to be as bad as it was. No one. No one anywhere. Not Biloxi, not Gulfport, not New Orleans. No one. We did make a good decision on Friday night. Pull the trigger and do it. Obviously, if we hadn't, God knows what would have happened. I lucked out, really.*
 - All voiced concerns regarding what might occur during the next disaster
 - Despite local and regional efforts to improve preparedness for future disasters since the hurricanes, respondents identified a number of unaddressed preparedness needs that remain



Other Findings of Note

- ▶ Care for non-veterans
 - *As you know, at the VA, we don't deal with children and babies and pregnant women, right? We did. Dr. K and the hospital director made arrangements to have some pediatric nurses and doctors that came out to volunteer.*
- ▶ Recovery can be challenging
 - *We went for months and months without any buildings. I couldn't just go out myself and contract for these things. I had to go through other people. Other people couldn't understand and get going. They were following the rules. After three weeks of talking and explaining what I wanted, I finally got one of these national people calling me and saying, 'Well, we're trying to find you property.' And at that point, I was pretty pissed off. I said, 'I don't need property. I got that. I need the buildings.' I had plenty of property right at my own campus. I needed buildings. I needed someone to get me buildings that I can adapt and use. So that went really slow and we really got behind the curve. We really suffered long after because by the time we got in the loop, everyone in the world that wanted temporary buildings was ahead of us. That didn't work well. I was not a happy camper. I just couldn't seem to get to the right people.*



Implications

- ▶ Two hurricanes brought unanticipated challenges and pointed out potential operational flaws in existing disaster response plans
- ▶ Key lessons learned could be incorporated into future planning
 - Scope of these two disasters allowed us to better understand health needs of residents during and after evacuation, and examine a range of system, coordination, and integration issues related to post-disaster delivery of health services for frail and elderly veterans in nursing homes



Future Research Directions

- ▶ Pilot study
 - Comparative work on State Veterans Homes & Community Nursing Homes
 - Compare other evacuations, e.g., nursing homes not co-located at VAMCs
- ▶ Focus on VA emergency preparedness practices that might be effectively integrated into routine practice
 - Over time, these systematic, evidence-based practices could be implemented and subsequently evaluated after future disasters



Defining & Evaluating Threats and Designing Mitigation Strategies for VA Healthcare

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Sandia National Laboratories

Ronald Norby
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Veterans Health Administration
Office of Public Health and Environmental Hazards



The Problem

- VA has had substantial experience facing both natural and man-made threats
 - Earthquakes
 - Hurricanes
 - Severe Acute Respiratory Syndrome (SARS)
 - Avian influenza/ H1N1 influenza
 - Acts of terrorism
- Many questions and concerns based on these events
 - What if we had done things differently?
 - How could we better prepare?
 - If 'X' happens, what approaches lead us to 'Y₁ + Y₂ + Y₃' (the outcomes we want)?



Computational Modeling as an Approach to consider a multitude "what ifs"

- We will use advanced computational models of real-world threats and potential disasters in order to provide options for policy, interventions, actions.
- A 5-year project
 - model the complex system of VA health care within communities
 - simulate various natural or manmade threats (H1N1 influenza, an earthquake)
 - select key aspects that might be averted, mitigated, improved
 - simulate, re-define, re-simulate, apply in exercises, evaluate, prepare, use



National Infrastructure Simulation and Analysis Center

Analyses:

- Damage areas, severity, duration, restoration maps
- Projected economic damage
 - Sectors, dollars
 - Direct, indirect, insured, uninsured
 - Economic restoration costs
- Affected population
- Affected critical infrastructures
- Propagating supply chain effects

Focus of research:

- Comprehensive evaluation of Threats
- Design of Robust Mitigation
- Evolving Resilience

Hurricane Ivan



2002: Advanced Methods and Techniques Investigations (AMTI)

Critical Infrastructures:

- Are **Complex**: composed of many parts whose interaction via local rules yields **emergent structure (networks) and behavior (cascades)** at larger scales
- Grow and adapt** in response to local-to-global **policy**
- Contain people**
- Are interdependent "systems of systems"



Critical infrastructures are -
Complex Adaptive Systems or CASoS

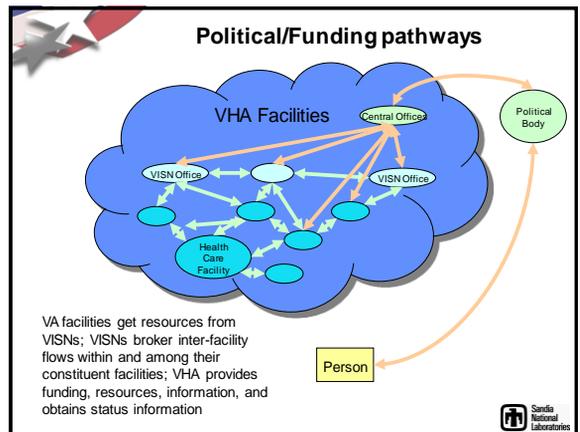
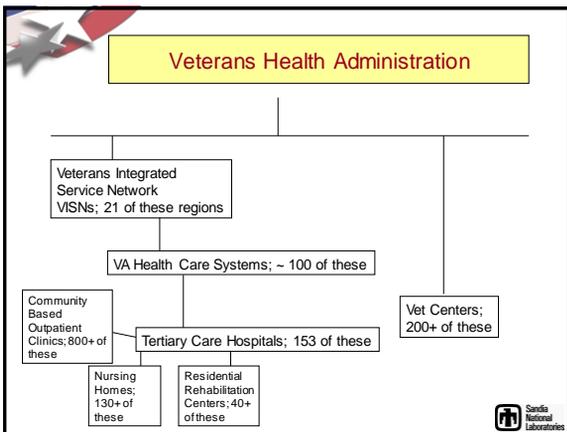
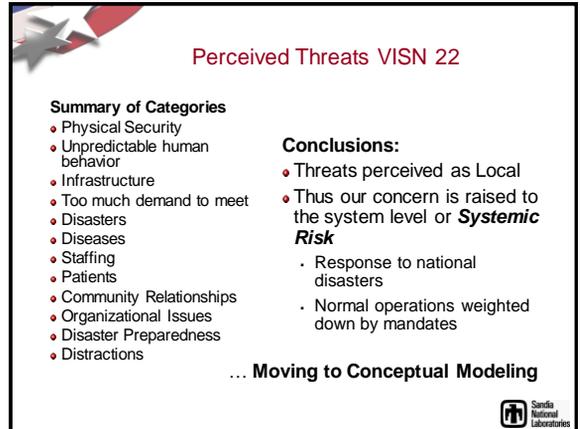
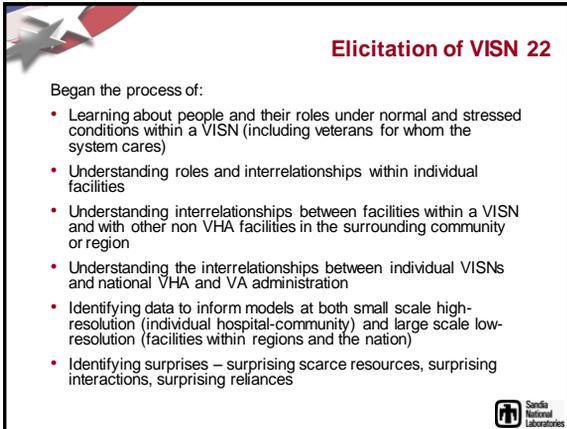
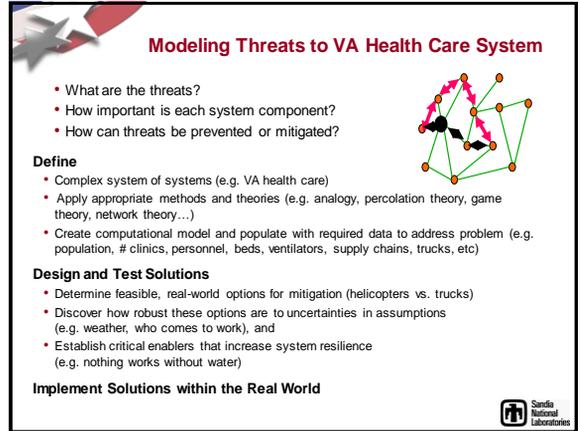
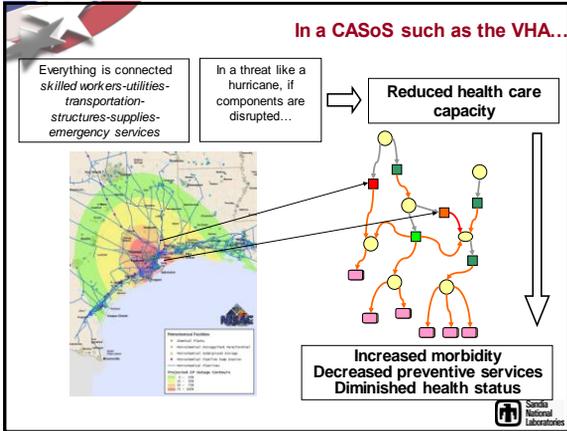
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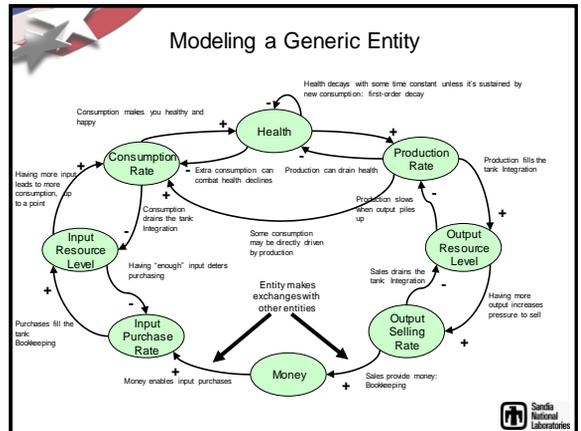
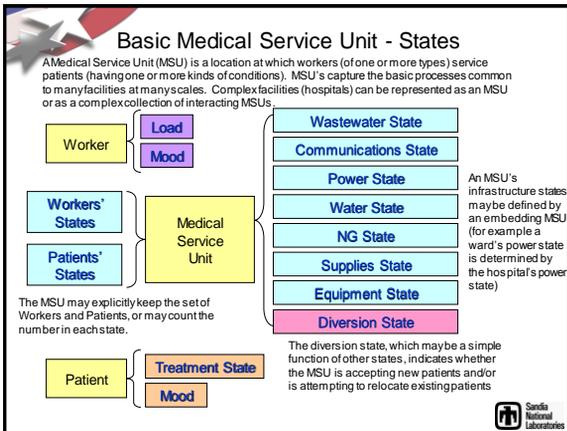
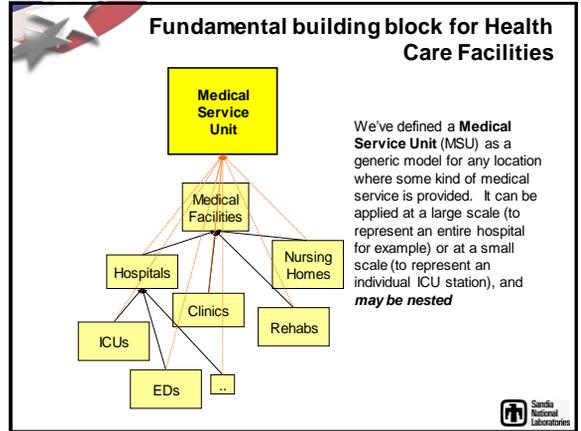
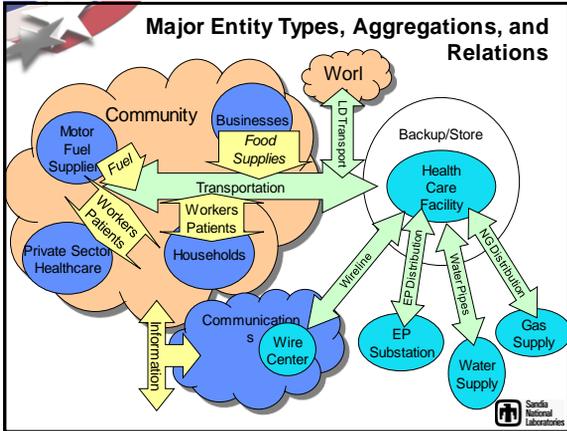


Examples

- General infrastructures
- Congestive Failure
 - Power Grids
 - Payment systems (Fedwire: financial transfer system)
- Coupled payment systems (Fedwire: FX market: Target)
- Pandemics
- Petrochemicals and Natural gas networks
- Global Financial Systems
- ... Combining understanding across all CASoS application domains







- ### NEXT STEPS
- In process of creating generic computational entity (mathematics and computational solution)
 - Specialize general entity for: MSU, patients and medical staff
 - Link MSUs into a network to represent several scales within the VA: a hospital, a VISN, the national system
 - Operate stylized systems under normal conditions and allow individual entities to adjust, compare to expectations from the real world
 - Consider robustness of system to perturbations of a variety of types and a range of sizes, find those that are problematic at the scale of interest (focus is on entire system)
 - Consider tradeoffs between a set of strategies that could be implemented to mitigate the severity of perturbations
 - AND... re-define, re-simulate, use to define critical research, apply in exercises, test and evaluate, prepare, use

Q&A

Slides in Reserve

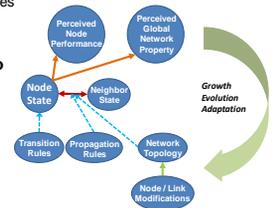


Generalized Conceptual Modeling Approach for CASoS Engineering

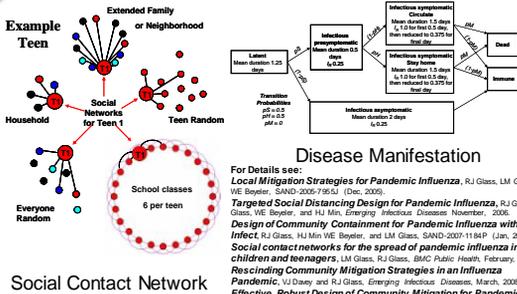
Take any system and Abstract as:

- Nodes (with a variety of "types")
- Links or "connections" to other nodes (with a variety of "modes")
- Local rules for Nodal and Link behavior
- Local Adaptation of Behavioral Rules
- "Global" forcing

Connect nodes appropriately to form a system (network)
 Connect systems appropriately to form a System of Systems



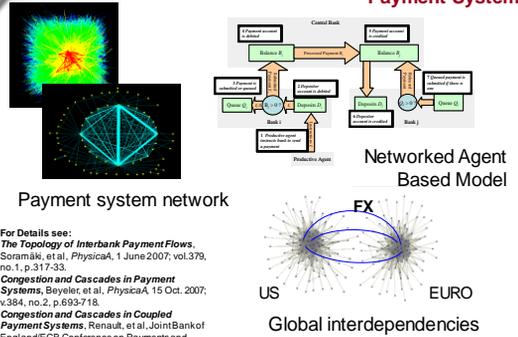
Application: Community Containment for Pandemic Influenza



For Details see:
Local Mitigation Strategies for Pandemic Influenza, RJ Glass, LM Glass, and WE Boyler, SAND-2007-7953J (Dec. 2006).
Targeted Social Distancing Design for Pandemic Influenza, RJ Glass, LM Glass, WE Boyler, and HU Min, *Emerging Infectious Diseases* November, 2008.
Design of Community Containment for Pandemic Influenza with Loki Infect, RJ Glass, HU Min, WE Boyler, and LM Glass, SAND-2007-1184P (Jan. 2007).
Social contact networks for the spread of pandemic influenza in children and teenagers, LM Glass, RJ Glass, CDC Public Health, February, 2008.
Rescinding Community Mitigation Strategies in an Influenza Pandemic, VJ Daey and RJ Glass, *Emerging Infectious Diseases*, March, 2008.
Effective, Robust Design of Community Mitigation for Pandemic Influenza: A Systematic Examination of Proposed U.S. Guidance, VJ Daey, RJ Glass, HU Min, WE Boyler and LM Glass, PLoSOne, July, 2008.
Health Outcomes and Costs of Community Mitigation Strategies for a Pandemic Influenza in the U.S., Nicholas Davaritis, J. Robert Smith, and VJ Daey, Alan M. Garber, Douglas K. Owens, *Clinical Infectious Diseases*, 2009.



Application: Congestion and Cascades in Payment Systems



For Details see:
The Topology of Interbank Payment Flows, Soramäki, et al., *PhysicaA*, 1 June 2007; vol.379, no. 1, p.317-33.
Congestion and Cascades in Payment Systems, Boyeler, et al., *PhysicaA*, 15 Oct. 2007; v.384, no. 2, p.693-715.
Congestion and Cascades in Coupled Payment Systems, Renault, et al, Joint Bank of England/ECB Conference on Payments and monetary and financial stability, Nov. 12-13 2007.



vTRAIN: Virtual Learning Environments for VA Pandemic Flu Preparedness



Laura Greci, MD, MPH
5.5.2010

vTRAIN TEAM



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Specific Objective

To design and implement a realistic multi-user virtual environment (MUVE) to enhance the delivery of emergency preparedness training for VHA health professionals.



Background

- Emergency preparedness has become increasingly higher priority as each new natural (Hurricane Katrina) or manmade disaster (9/11) highlight the impact of mass casualty situations
- Joint Commission requirements now have separate requirement for hospital accreditation (EOP and biannual exercises)
- "All hazard" approach, however pandemic flu is often the prototypical hazard because of acute surges and sustained waves of sick patients and staff

Historical Emergency Preparedness

- Education and training is extremely varied and difficult to measure patient outcomes (data collection is lowest priority during a disaster)
- Cannot ethically control or replicate variables during a disaster or randomize patients or staff
- Yet *experience* can be the strongest motivator for improvement (i.e. what do you do differently since the last disaster?)



Historical Emergency Preparedness Training

- Individual trainee competencies (e.g. online course; annual training requirements)
- Facility tabletop (discussion) exercises
- Functional exercises (e.g. smaller assignments to specific personnel)
- Full-scale (patients in moulage; have to be done in addition to usual duties; expensive and time consuming)

Why vTRAIN?



- Can support learning that is learner-centered and related to context and to practice
- Cost effective
- Can provide the experience without putting anyone into danger
- Active participation and potential for multi-user interactions and long distance communication

VA San Diego Healthcare System



vTRAIN and Pandemic Flu

- Collaborative development project with UC San Diego & Veterans Health Administration to provide virtual emergency preparedness training program for the VA San Diego Healthcare System
- Virtual reality environment is accessed from Linden Labs server via a private "island" space though UCSD computer lab



Comprehensive Education Program

- Content specific to virtual VA space utilizing experienced virtual reality engineers at UCSD and Idaho State University
- Curriculum development in association with UCSD & VA medical educators and subject matter experts
- Evaluation (both qualitative and quantitative) in association with UCSD (medical education and medical anthropology)

VA San Diego Pandemic Flu Curriculum August 2009

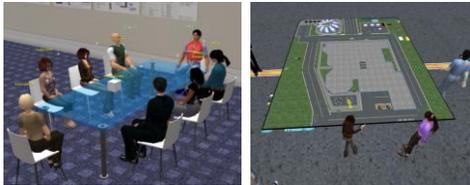
- Six-week course (90 minute classes)
- ED Emergency Preparedness Committee comprised of ED RNs
- Students oriented to virtual world (2)
- HICS (ICS 200 course) in VR (0.5)
- ESI triage & START triage in VR (0.5)
- Two patient surge and ED triage drills (one outside and one inside) (2)
- Stress and anxiety management (0.25)
- Finally debrief and program evaluation (0.75)

H1N1 Preparedness

- Perceived Readiness:
 - Facility communication tree in place
 - Plan for surveillance and detection in place
 - Infection control plan in place
- Perceived Unpreparedness:
 - Communication plans with patients & families
 - Occupational health plan for staff shortages
 - Strategy for priorities if there is limited resources

Preliminary Lesson Learned

VR promotes team communication



Preliminary Lesson Learned

VR promotes planning-
especially in new environment



Preliminary Lesson Learned

VR encouraged team decision making



Preliminary Lesson Learned

VR allows visual debriefing that can be
replayed and reviewed easily



Highest Reported KAS Shifts

- Knowledge: I am aware of my expected role and responsibilities within the pandemic influenza action plan.
- Attitude: I am confident that I can use the chain of command to perform emergency response tasks effectively.
- Skills: I can provide reliable information and accurate communication using HICS principles.

VA San Diego Pandemic Flu Curriculum December 2009 (HICS)

- Three-week course (3 hour classes)
- Disaster Management Committee
- Students oriented to virtual world (1)
- HICS Drill A – orientation to ICS role (0.25)
- HICS Drill B- patient surge drill from HICS view (0.75)
- Stress and anxiety management (0.25)
- Finally debrief and program evaluation (0.75)

Preliminary Lesson Learned

VR promotes team communication



Preliminary Lesson Learned

VR promotes planning-
especially in new environment



Preliminary Lesson Learned

VR encouraged team decision making



Preliminary Lesson Learned

VR allows visual debriefing that can be replayed and reviewed easily



VA San Diego Pandemic Flu Curriculum March 2010



Comments or suggestions?



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(photo credit: NASA) www.nasa.gov

THE PUBLIC HEALTH IMPACT OF HURRICANE IKE

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S. Kay Carpender, BS
Barbara J. Quiram, PhD



ACKNOWLEDGEMENTS

- Texas Department of State Health Services
- Galveston County Health District
- County, City, and Emergency Management Officials in impacted counties
 - Galveston
 - Chambers
 - Jefferson
 - Orange
- Citizens and Advocates in impacted counties

MAP OF COUNTIES IMPACTED BY HURRICANE IKE AND RECEIVING FEMA ASSISTANCE



PURPOSE

- To better understand the impact of Hurricane Ike on communities/groups and individuals in terms of public health and emergency preparedness, response, and recovery
- Topics
 - Preparedness and Communication
 - Evacuee and Non-Evacuee Experiences
 - Recovery

METHODS

- Hurricane Ike Registry (HIkeR)
- Eligibility
 - 18 years old or older
 - Impacted by Hurricane Ike
- Assessment
 - Online and paper-based
 - Evacuee and non-evacuee versions
- Discussion Groups
 - Impacted communities
 - Single facilitator

PARTICIPANTS- ASSESSMENT

- 257 participants
- Average age= 50.7 ± 11.4 (24-81)
- 91% White
- 77% Female
- 58% Four years or more of college

PARTICIPANTS- DISCUSSION GROUPS

- 2 groups
 - Galveston County (N=7)
 - Jefferson and Orange Counties (n=9)
- 12 females and 4 males
- Average age= 55.3 ± 7.0 (40-67)

RESULTS- PREPAREDNESS AND COMMUNICATION

PREPAREDNESS

- Hurricane Emergency Plan
 - 85% Before Ike
 - 91% After Ike
- Previous Evacuations
 - 88% Reported Previous Evacuations
 - Rita (2005) and Gustav (2008)
- Hurricane Ike Evacuation
 - 76% Under Mandatory Evacuation Orders
 - 92% Evacuated before Landfall 9/13/08

CONFIDENCE IN INFORMATION SOURCES

Table 1. Percent of Respondents Selecting Very or Mostly Confident

Information Source	Before	After	Change
National Hurricane Center	91.3%	77.3%	⬇️
The Weather Channel	87.1%	70.8%	⬇️
Internet	78.2%	71.8%	⬇️
Local Television Stations	72.1%	65.9%	⬇️
Local Radio Stations	68.6%	66.9%	⬇️
Local Emergency Management	67.4%	57.9%	⬇️
Local Government Officials	63.8%	55.6%	⬇️
Local Newspapers	63.4%	57.6%	⬇️
State Government Officials	61.6%	56.8%	⬇️
Military	50.0%	58.6%	⬆️
Family and Friends	40.9%	62.1%	⬆️
FEMA	21.3%	30.9%	⬆️

COMMENTS ABOUT INFORMATION SOURCES

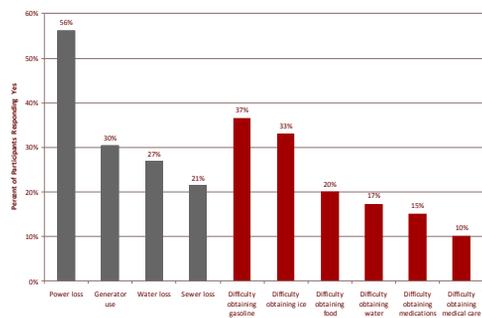
- *"I left because the mayor called for an evacuation..."* -Galveston County Participant
- *"I think the storm was the scariest thing you know the weatherman kept saying if you stay it's certain death, "certain death"... that'll get your attention."* -Jefferson and Orange County Participant

RESULTS- EVACUEE AND NON-EVACUEE EXPERIENCES

EVACUEES

- Primary Reasons for Evacuating
 - Concern about safety if they stayed
 - Had transportation
 - Over 95% evacuated in personal vehicles
 - Had a location to go to
 - 75% had a pre-planned evacuation location
 - Had enough time to leave
- Evacuation Distance and Time
 - 62% traveled 200 miles or less to initial evacuation location
 - 69% traveled for four hours or less to initial evacuation location
 - Stayed in multiple locations

EVACUATION SITE EXPERIENCES AND DIFFICULTIES



ACCURACY DURATION AND PERMANENT RETURN

- Duration
 - Planned 3 to 4 day to 1 week
 - 52% gone longer than estimated
- Permanent Return
 - 70% returned permanently
 - Over half away 3 weeks or more

COMMENTS ABOUT RETURN HOME

- *"Well first time I came back after five but they told me not to come back for another week unless I was able to sustain myself."* -Jefferson and Orange County Participant
- *"We didn't come back until electricity was at our house...the mold was so bad...I think that was probably the biggest shock, was the mold in the house and the smell..."* -Galveston County Participant

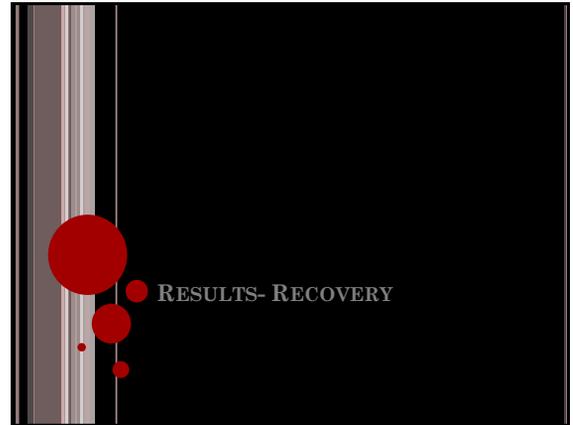
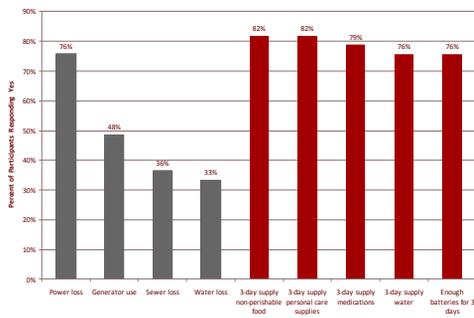
COMMENTS ABOUT WHAT THEY WOULD DO DIFFERENTLY

- *"I would've packed those things that I could not have replaced...we lost all four of our grandparents dressers, and things like that that we truly valued a lot..."* -Galveston County Participant
- *"I didn't clean out my refrigerator or freezer because I thought we were coming back in a couple of days!"* -Galveston County Participant

NON-EVACUEES

- Primary Reasons for Not Evacuating
 - Concerned about getting back to their homes
 - Concerned about leaving property behind
 - Traffic jams and inability to get out

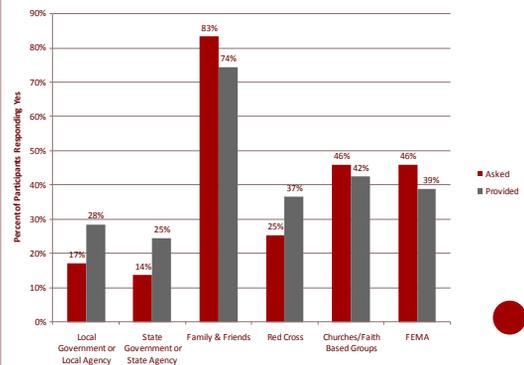
RESOURCES WHEN HURRICANE IKE MADE LANDFALL



COMMENTS ON RECOVERY

- o *"You have to define 'recovery'...there is never going to be a 'normal', you can't use that as your, as your point of getting back to it."* -Galveston County Participant
- o *"We had one little restaurant we liked to go in Dickinson, it was in a low spot and it flooded...they opened up right after the Christmas holidays and that was, it felt like, now we're back!"* -Galveston County Participant

RECOVERY RESOURCES



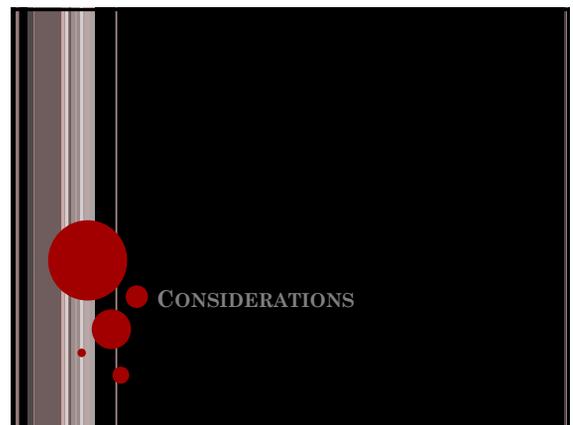
SHARING SUPPLIES AND RESOURCES

SHARED BY OTHERS

- o 58%-Food
- o 54%-Water
- o 38%-Housing
- o 28%-Tools

SHARED WITH OTHERS

- o 60%-Food
- o 54%-Water
- o 44%-Tools
- o 27%-Housing



PREPAREDNESS AND COMMUNICATION

- Education for the general public
- Use of trusted information dissemination sources
- Additional assessment
 - Planning resources
 - Non-evacuees

EVACUATION

- Assurance and education regarding evacuation processes
- Education and information about evacuation sites
- Promotion of personal responsibility

RECOVERY

- Identify and report on recovery indicators
- Communication and engagement of community in process

NEXT STEPS

- Planning next assessment
 - Detail and texture regarding recovery resources
- Explore training opportunities to address identified gaps
 - Public health workforce
 - Communities
- Continued engagement of HIkeR
 - Reporting of assessment findings
 - Provision of resources
 - Additional research and project opportunities

QUESTIONS

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A Pilot Application of Psychological First Aid Specifically Designed for the VHA

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 James A. Haley VA, Research Center of Excellence, Tampa, FL¹
 University of South Florida²
 Biloxi VAMC³

Background

- Psychological reactions to trauma, disasters, & loss are common and well documented
 - Norris (2009) in a review of 57 studies of natural disasters found PTSD reported in 74% of studies, depression in 33%
 - Other problems included somatic complaints, worsening medical problems, increased use of substances.
 - For most, things improved over time

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Reactions to Trauma

- Common Reactions
 - Emotional, shock, grief
 - Mental, worry, conc.
 - Physical, fatigue
 - Interpersonal, withdrawal
 - Can last days - years
- Concerning Reactions
 - Intrusive feelings
 - Numbing, emptiness
 - Avoidance attempts
 - Hyperarousal
 - Depression & anxiety
 - Dissociation

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Key Points

- Importance of continued level of functioning
 - Predicts lower risk for long term problems
 - Especially true within the first 1-3 weeks post trauma
 - Behavioral as well as medical impact from traumas and disasters, impacting a much larger group depending upon event

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Psychological First Aid (PFA)

PFA is an evidence informed, approach for assisting people in the immediate aftermath of disaster, terrorism and trauma: Goals are to -

1. Reduce initial distress and
2. Foster short and long term adaptive functioning

Used by disaster responders, including first responders, Red Cross, Medical Reserve Corps, and other disaster response groups.

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PFA

- Protection from danger
- Establish a safe recovery environment
- Care for basic needs
- Reduce stressfulness
- Support resilience
- Reduce activation to arousal
- Activate resources for social support
- Give information about positive coping & dealing with stress
- Help people refer individuals to other resources
 - source P. Watson "NCPTSD website, SAMHSA video"

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PFA Core principles

- Contact & engagement (human contact)
- Safety & comfort
- Stabilization
- Information gathering (needs, concerns)
- Practical assistance (address needs)
- Connection & Social support (family, friends, community)
- Information on coping
- Linkage with collaborative services

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Some History

- Developed by nationally recognized experts at
- National Center for PTSD (NCPTSD), National Child Trauma Stress Network (NCTSN),
- SAMHSA

Their manual, the Field Guide for PFA, now in its 2nd edition, was designed for help across child and adult ages, addressing varied needs. (see- ncptsd.va.gov)

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Risk Factors following Trauma

- Severity of exposure
- Bereavement, injury to self or family
- Life threat
- Panic during event
- Horror
- Separation from family
- relocation
- Older adults at greater risk
- Prior experience/ Preparedness helped
- SES
- Education
- Pre-disaster level of function
- Gender

• Source: (Norris, 2009)

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Veterans: Special Concerns

- War exposure
 - prior to hurricanes showed greater impact
 - Greater fears off for safety during the event and heightened psychological sequelae
 - Anger
- Prior PTSD showed
 - Greater adverse psychological effects
 - More traumatic events
 - Higher depression, anxiety
 - Increased PTSD Sx
 - Worsened physical Sx
 - Source (Sutker et al 2002)

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Need within the VHA

- At Risk Populations
 - Medically frail
 - Polytrauma
 - PTSD
 - Homeless
 - Elderly
- Special populations
 - SCI

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VHA Utilization following a Florida Disaster: Hurricanes

- Preliminary look at health care utilization following major disasters, we tracked 2004-2005 hurricane seasons, and use within counties impacted by hurricane , and compared with those not.
- Aggregated administrative data on:
 - 153,511 Unique Florida Veterans
 - 1,492,057 Mental health encounters
 - 836,518 Days of mental health encounters

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Brief Overview of Findings

- PTSD Veterans residing in counties affected by hurricane paths and diagnosed prior to hurricane season demonstrated an immediate 28% increase in utilization following landfall
- Veterans in affected counties were found to utilize more group psychotherapy tx
- As compared with the 8 months prior to the 2004 hurricane season, PTSD veterans showed a decrease in alcohol related visits during the study period
- As far as we could determine, facilities were not closed, or limited resources were a primary reason.

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Next Step in Process

- Last hurricane season, 2009, Biloxi VA had inquired about possible training in PFA for staff
- We began to consult with their staff about needs, and their experiences with Katrina and needs of staff and patients.
- We began to revise material, primarily from Nursing Home Guide for PFA, given initial description of VA patient needs (Brown, et. al. 2009).

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Preliminary Adaptation of Materials

- We reviewed all available PFA materials, including NCPTSD's, but realized –
- Despite close ties with VHA and developers of PFA-
- NO VHA Guide
- Began to revise language with guide and
- Address special needs of VHA patients and facilities
- Still not sure if funding for requested training will materialize

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Changes to text included..

- Reframed language to be more consistent with VHA system and veterans served
- Addresses the variety of sites found within the VHA
- Sections begun on special patient populations, e.g. PTSD, elderly, etc.)

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Ongoing work includes..

- Continued consultation with experts, both emergency medical management expertise internally, and have added several from outside our geographic region (e.g. NCPTSD)
- Still are hopeful for preliminary workshop within VHA site
- Submit a grant for initial step of development of program of research, to build to a controlled comparison study

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Why Critical to VHA?

- Unique needs of veterans, vulnerable and impacted by both large scale (natural disaster, pandemics) and more personal traumas (loss of loved one, illnesses)
- Other systems not specifically attuned to needs of veterans (e.g. increased need for specialized services, whether medical (e.g. SCI, or psychological, e.g. prior PTSD)

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Conclusions

- A large proportion of vulnerable Veterans reside in disaster prone areas
- Natural Disasters affect mental health utilization among vulnerable Veterans, specifically PTSD
- Personal traumas, such as loss, illness, can respond to PFA
- Need for front line, non-mental health specialists to have available skills
- Attentive to Populations and settings within VHA

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Patient Safety Through Effective Communication During Disaster Relief

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Geriatric Clinical Nurse
South Texas Veterans Health Care System
San Antonio, Texas

Disaster Emergency Medical Personnel
Veterans Administration Central Office

Background

- The Institute of Medicine (IOM) reported that communication errors were identified as a significant factor in medical errors. (1999)
- The Joint Commission, National Patient Safety Goals' initiatives are to "Improve the Effectiveness of Communication Among Caregivers." (2008)

Problem and Purpose

- **Problem:** Fragmented care delivery due to lack of awareness of team responsibilities and altered prioritization of needs of client due to unknown clinical needs.
- **Purpose:** To improve patient safety through accurate communication among nurses, physicians, and emergency medical technicians during disaster relief from *Hurricane Ike*.

Setting

- Deployment site "Port San Antonio"
 - Portable hospital
 - Total patients ~ 250
 - Team A patients ~ 50
- Transition patients
 - Chaotic delivery processes of disaster patients
 - Initial placement to a shelter
 - Standardized communication
 - "Best practice" strategy using pertinent information

Methods

- Implement the "Huddle" strategy
 - Situation Awareness
- Delegate acquired information to assistants who would deliver daily care
- Integrate the SBAR strategy
 - Situation
 - Background
 - Assessment
 - Recommendation
- Collaborate with Emergency Medical Technicians and physicians

Outcomes

- Improved triage classification (*Huddle*)
- Improved communication (SBAR)
 - EMT to RN
 - RN to assistants
 - RN to MD
- Improved satisfaction
 - Patient
 - Decrease anxiety
 - Improve established perceptions
 - Relief of concerns
 - Health care team
 - Efficient continuity
 - Seamless streamlined processes
 - Took ownership of process changes

Patient Outcomes

- Patient
 - Decrease anxiety
 - An elderly gentleman came into the shelter with his wife who had had a stroke and was a total care patient. "I have lost so much. But you have been so kind and you have provided me a lot of comfort."
 - Improve established perceptions
 - "I was terrified to come to the shelter because of what I had heard. But this was the most comforting experience I have had and I have been through more than one hurricane."
 - Relief of concerns
 - There was a couple, the husband was home hospice; who had fears of being separated, thus did not want to tell anyone of the situation. Social work services and nursing worked collaboratively to ensure placement would be for both patients.

Team Outcomes

- Health care team
 - Efficient continuity
 - Team was able to verbalize care needs of patients whenever they "Huddled."
 - Seamless streamlined processes
 - Patients articulated plan of care and knew when to state that they needed help.
 - Trust was formed.
 - Took ownership of process changes
 - Leadership for "Huddle" rotated.
 - Integration of TeamSTEPPS strategies was seen when team members taught other team members the process for handoffs.

Implications for Nursing

- Enhance communication
 - "Huddle" worked
 - SBAR worked
- Improve teamwork
 - Efficient flow
 - Process
 - People
 - Effective care delivery
- Accountability
 - Patient outcomes
 - Satisfaction
 - Patient
 - Health care team

Practice Change

- Prior to implementing the "Huddle" and SBAR communication strategies information was confusing, lost, and care delivery was delayed.
- After implementing the communication strategies the patient transition was efficient, seamless and staff were confident when providing care.

Recommendations

- Develop ongoing communication skills that apply in numerous situations to improve patient outcomes and maintain safety.
- Educate team to use "Huddle" and SBAR TeamSTEPPS strategies consistently to promote uptake to ensure sustainability.

Resources

- Institute of Medicine
www.iom.edu
- The Joint Commission
www.JointCommission.org.
- TeamSTEPPS
teamsteps.ahrq.gov

DO DISASTERS CAUSE ALCOHOLISM? AN EMPIRICAL STUDY OF SURVIVORS OF 10 DISASTERS

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Consulting: Univ. of OK Health Sci. Center

Speaking: Washington U; Magellan Health

Stock/investments: None

Other: None

BACKGROUND

- Alcohol use disorders are associated with trauma exposure and PTSD in various populations (Cottler et al 1992; Keane et al 1988; Stewart 1996; Breslau & Davis 1987)
- Stress reduction model* of alcoholism: EtOH consumption = palliative coping mechanism for emotional stress → problem drinking (Martin et al 1992; Brown et al 1995; Bales 1946; Pohorecky 1991; Powers & Kutash 1985)
- Widespread belief: increased or excessive use of EtOH after trauma represents "self-medication" of post-traumatic emotional distress (McFarlane et al 2009; Stewart 1996; Boscarino et al 2006; Vlahov et al 2004)
- Do disasters lead to alcoholism? → knowledge needed to inform EtOH prevention efforts and EtOH interventions after major disasters
- VA personnel may be deployed to disasters internal or external to VA, and affected populations may include veterans, who may have EtOH problems

UNDERSTANDING ALCOHOLISM AFTER DISASTERS

- Most prevalent post-disaster Dx in most studies is PTSD; major depression is 2nd (Norris et al 2002; North et al 1999, 2008; Green et al 1992)
 - Alcohol use disorders are not among most prevalent post-disaster disorders
- High prevalence of post-disaster alcohol problems in some disaster populations:
 - Hurricane Katrina survivors (26% current EtOH misuse) (Floryet al 2009)
 - Midwestern flood survivors (26% lifetime, 9% post-disaster EtOH Dx) (North et al 2004)
 - OKC bombing rescue workers (47% lifetime, 24% post-disaster EtOH Dx) (North et al 2002)
- Post-disaster alcohol use disorder prevalence info alone does not adequately explain relationships between disaster exposure and alcohol use disorders
- Understanding relationships of disaster exposure to alcohol use disorders observed after disasters requires differentiation of psychiatric disorders that began *before* the disaster from *all* post-disaster alcohol use disorders
 - ie, distinguish new (incident) from pre-existing cases

MOST STUDIES EXAMINED POST-DISASTER ALCOHOL USE

INCREASED:

- Baltic ferry (*Herald of Free Enterprise*) disaster survivors (Joseph et al 1993)
 - OKC bombing (metropolitan area residents) (Smith et al 1999)
 - Police officers (pre-disaster drinkers) in football stadium disaster (Sims & Sims 1998)
 - 9/11 attacks: Pentagon survivors (Grieger et al 2003)
 - 9/11 attacks: Manhattan residents (few with direct exposure) (Vlahov et al 2002, 2004; Boscarino et al 2006)
 - 9/11 attacks: NYC liquor sales ↑ 12% first 2 months (Oshos 2001)
 - but national liquor sales ↓ (US Census Bureau 2001)
- (↑ alcohol consumption after disasters may be most apparent among individuals who already had drinking problems before the disaster) (Norris et al 2002)

NOT INCREASED:

- American workers post-9/11: mod. ↓ alcohol consumption 1st mo (Knudsen et al 2005)
- Three Mile Island workers exposed to nuclear accident: "infrequent" ↑ (Kasl et al 1981)
- Great Hanshin earthquake (Japan): ↓↓ alcohol sales (Shimizu et al 2000)

CLINICAL SIGNIFICANCE OF ALCOHOL USE

- Not established
- Not all alcohol consumption is necessarily pathological
 - Not everyone who drinks has alcohol use disorder (Ruhm & Black 2002)
 - Most people who drink do not (Robins et al 1991)
- Alcohol consumption patterns may reflect not just pathological drinking behaviors of distressed people but also social drinking patterns, eg:
 - Social drinking may ↑ in people out of work after workplace destroyed
 - ↓ alcohol sales following disasters may reflect economic downturn (Ruhm & Black 2002; McFarlane 1998)
- Dx of alcohol use disorders provides measure of pathological drinking not captured by heterogeneous data representing alcohol consumption patterns

IMPORTANT DISTINCTIONS

1) Alcohol **use** vs. **abuse**/dependence Dx

2) **Incidence** vs. **prevalence**

Incidence = new cases only

Prevalence = all observed cases

Time frame:

lifetime

current

post-disaster

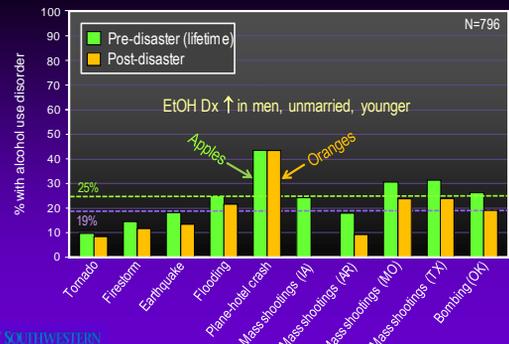
pre-disaster (immediate vs. lifetime)

ORIGINAL RESEARCH

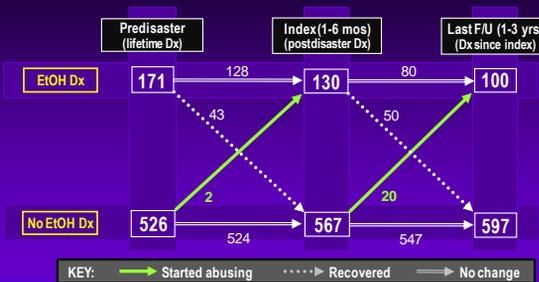
COMBINED DATA: 10 DISASTER STUDIES

- Directly exposed survivors assessed at 1-6 months post-disaster:
 - ▶ 4 mass shootings (Luby's Cafeteria, Killeen, TX; Russellville, AR businesses; Clayton, MO courthouse; Univ. of Iowa campus)
 - ▶ Plane crash into hotel (Indianapolis, IN)
 - ▶ Tornado (Madison, FL)
 - ▶ Earthquake (Northridge, CA)
 - ▶ Floods (St. Louis, MO area)
 - ▶ Firestorm (Oakland/Berkeley, CA)
 - ▶ Terrorism (Oklahoma City, OK bombing)
- Consistent measurement (Diagnostic Interview Schedule) of pre-disaster (lifetime) and post-disaster (prevalence, incidence) EtOH use disorder
- N=811 (697 had 1-3 year FU data)
 - ▶ Incomplete data ↑ in currently unmarried, lack of college education, younger age (unassociated with gender, ethnicity, injury in disaster, or PTSD or EtOH Dx)

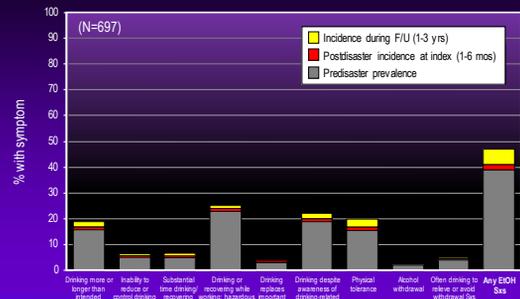
PREVALENCE OF ALCOHOL USE DISORDER BY SITE AT INDEX



LONGITUDINAL COURSE OF ALCOHOL USE DISORDERS AMONG DISASTER SURVIVORS OVER 1-3 YEARS (N=697)



LONGITUDINAL COURSE OF ALCOHOL SYMPTOMS AMONG DISASTER SURVIVORS OVER 1-3 YEARS



POST-DISASTER ALCOHOL USE

- 75% of survivors with lifetime pre-disaster Dx had post-disaster EtOH Dx, but only 0.3% of survivors developed new (incident) post-disaster Dx
- 66% of survivors consumed EtOH in early post-disaster months
- 16% of survivors coped with disaster by drinking EtOH
- Of survivors who drank to cope, 40% had post-disaster EtOH Dx
 - ▶ (vs. 10% of those who did not drink to cope: $p < .001$)
- Of survivors with pre-disaster EtOH Dx in recovery:
 - 83% consumed EtOH post-disaster
 - ▶ (vs. 83% among those with continued EtOH abuse/dependence: n.s.)
 - ▶ (vs. 60% of those with no lifetime history of EtOH Dx: $p = .004$)
 - 22% drank to cope
 - ▶ (vs. 40% of those with active post-disaster EtOH Dx: $p = .041$)
 - ▶ (vs. 9% of those without post-disaster EtOH Dx: $p = .028$)

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STUDY LIMITATIONS

- Variable timing of index and follow-up interviews in different disasters
- Sample attrition: bias toward unmarried, less educated, younger
- Potential recall bias of pre-disaster data obtained in early post-disaster period
- Immediate pre-disaster status of psychiatric disorders and symptoms not obtained
 - ▶ Thus could not differentiate post-disaster alcoholic relapse from continuing alcohol abuse/dependence
 - ▶ Future research should secure data on alcohol use disorder status in immediate pre-disaster period to determine vulnerability to post-disaster relapse of alcohol problems

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CONCLUSIONS

SUMMARY OF FINDINGS

- Post-disaster alcohol use did not regularly result in new (incident) alcohol Dx
 - ▶ Only 0.3% developed new post-disaster alcohol Dx:
Most alcohol Dx represented continuation/recurrence of pre-existing alcohol Dx
 - ▶ Thus, not all increased drinking after disaster is necessarily pathological
- Apparent discrepancies in disaster/alcohol research findings are at least partly methodological (eg, alcohol use vs. abuse/dependence Dx)
- Course of alcohol use disorders observed in this study may reflect natural history of alcoholism rather than disaster-specific findings
- Those in alcohol recovery who drink after disaster exposure may be at risk for post-disaster alcohol problems: 83% drank in early post-disaster period
- Coping with disaster by drinking suggests active alcohol Dx (present in 40%, vs 10% of those who did not drink to cope)

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COMPARISON WITH OTHER STUDIES

- Other studies of disaster survivors using structured interviews to assess full diagnostic criteria have generally failed to find new onset of alcohol use disorders in association with disaster exposure (North et al 2002; Bravo et al 1990; Robins et al 1986; David et al 1996)
- Contrast: post-9/11 random telephone survey of Manhattan residents (few with direct exposure) one year post-disaster - proximity to WTC associated with alcohol dependence (Boscarino et al 2006)
 - ▶ Screener for Dx alcohol dependence = 2 of 4 CAGE questions (+)
 - did not assess full diagnostic criteria for alcohol abuse/dependence
 - ▶ Post-disaster incidence not differentiated from prevalence
- Further research needed to clarify the clinical significance of changes in alcohol use after disasters – must differentiate use from Dx

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RESTRAINT IN ASSIGNING CAUSALITY

Questions to ask:

- 1) Is it *new* after the disaster? (incidence vs. prevalence)
- 2) Is it pathological? (use vs. Dx)
- 3) Are there potential alternative causal explanations?
 - eg, opposite direction of causal pathways
 - eg, important variables omitted from models of relationships

TAKE-HOME POINTS:

NOT EVERYTHING OCCURRING AFTER A DISASTER IS:
Necessarily *due to the disaster*
Necessarily pathological

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Distinguishing Distress and Psychopathology Among Survivors of The Oakland/Berkeley Firestorm

Carol S. North, Barry A. Hong, Alina Suris, and Edward L. Spitznagel

Disaster mental health research has historically focused on assessment of psychopathology, using measures of psychiatric symptoms and disorders. The Oakland/Berkeley firestorm provided an opportunity to explore resilience among highly exposed survivors through consideration of psychiatric variables in the context of personality. The Diagnostic Interview Schedule/Disaster Supplement was administered to 62 firestorm survivors at approximately 4, 16, and 39 months and the Temperament and Character Inventory administered at 16 months post-disaster. Few individuals had post-disaster psychopathology (16% with any diagnosis, 5% with PTSD). There was considerable evidence of distress, however, indicated by an abundance of reported posttraumatic symptoms, functional impairments, and endorsement of emotional upset, all of which decreased substantially over time. Group C (avoidance/numbing) posttraumatic symptoms were relatively uncommon and were specifically associated with elevated Self-Transcendence. Groups B (intrusion) and D (hyperarousal) symptoms were prevalent and were associated with high Harm Avoidance and low Self-Directedness. The generally healthy personality profiles of these firestorm survivors reflected their psychological resilience. Examination of symptoms and distress in the context of psychiatric disorders after this disaster demonstrated that symptomatic distress is not inconsistent with psychological resilience. The choice of research focus and methods can provide very different portraits of outcomes post-disaster.

Not everything that moves is a mad cow.
—C.S. North, 2006

On October 20, 1991, sparks from a land/Berkeley, California, area. The conflagration took the lives of 25 people, including

CLINICAL IMPLICATIONS

- Findings suggest that efforts to identify alcohol problems after disasters should focus on survivors with pre-existing problems – both those in recovery and those with continuing alcohol disorders
 - ▶ Survivors with pre-existing alcohol problems, including those in recovery, may be at risk for escalation of problem drinking or relapse after disaster
- Disaster settings present a potentially useful forum
 - ▶ Regardless of pre-disaster alcohol Dx history among survivors, disasters provide:
 - opportunities for assessment and identification of alcohol problems
 - rationalization of problem drinking (trauma "self-medication")
 - opportunities/motivation for referral to treatment

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The End.



Disaster Emergency Medical Personnel System (DEMPS)

Bob Smith, EdD
DEMPS National Program Manager
Department of Veterans Affairs



What is DEMPS?

- DEMPS is the VA's system where active or retired VHA personnel deploy in support of internal emergencies affecting the VA or external support requested by other Federal Agencies.



DEMPS Deployments

- 2005 – Hurricane Katrina 1300+ Volunteers
- 2008 – Hurricane Gustav 135 Volunteers; Hurricane Ike 402 Volunteers
- 2009 – Red River Floods 54 Volunteers
- 2010 – Haiti Earthquake 5 Volunteers



DEMPS Training Philosophy

- The goal of the DEMPS Training Program is to train a DEMPS Volunteer using the right emerging technologies so that they can deploy to the right place at the right time with the right skills!



DEMPS Face-2-Face Training

- 2007 – DEMPS Awareness Face-2-Face Courses for facility and EMSHG Staff
- 2008 – DEMPS Face-2-Face Training for VAMC DEMPS Coordinators and VISN Points of Contact



DEMPS Training Using Emerging Technologies

- 2008 – DEMPS Web-Based Awareness Course for DEMPS Coordinators
- 2008 – DEMPS Recruitment Web-Based Course for DEMPS Volunteers
- 2009 – DEMPS Volunteer Deployment Information Course
- 2009 – DEMPS Volunteer Supervisor Course



DEMPS Training Course Development for FY 2010

- The week of 19-23 April, twenty four VHA Subject Matter Experts completed a final curriculum review of the new DEMPS Volunteer DEMPS Deployment Continuum Web-Based Training Modules



DEMPS Research Efforts

- Twitter – used during the DEMPS deployment continuum (pre, on, post)
- A research paper on Deployment Competencies and the use of Emerging Technologies in training DEMPS Volunteers



DEMPS Research Efforts - Continued

- A research paper on identifying the attitude of the DEMPS Volunteer upon completion of the new DEMPS Training Curriculum for deployment.
- Goal is to also assess a deployer after a return from a deployment using the same instrument to assess pre/post deployment attitude.



Where are We Going?

- Conducting a feasibility study to determine the best Virtual Reality platform to train DEMPS Volunteers.
- VR Platform will be used to ascertain team preparedness for a deployment.



Thank You

Questions?



ESF #6 Individual Assistance
Mass Care & Emergency Assistance
Housing
Human Services



Mark Tinsman
 Mass Care Support
 Specialist
 Individual
 Assistance Division
 FEMA HQ

FEMA ESF #6 1

Individual Assistance Mission

Quickly and compassionately help individuals and families recover from disasters and emergencies



Overview

- National Response Framework
- Emergency Support Functions (ESFs)
- Individual Assistance & ESF 6
- Declaration & Activation
- Sequence of assistance
- Mass Care & Emergency Assistance
- Housing
- Human Services
- Voluntary Agency & OFA Coordination

FEMA VA May 2010

National Response Plan

- National Response "Framework"
- All Hazards plan for National Response
- Defines authorities, span of control, agency roles and responsibilities
- 15 Emergency Support FUNCTIONS
- National "system" of response
- Based on traditional three-tiered response

FEMA VA May 2010

National Response Framework
Individual Assistance – ESF #6

ESF #6 Primary Agency
 Federal Emergency Management Agency

Overall Purpose
 Support and augment State, regional, local, and tribal mass care, emergency assistance, housing, and human services missions.

Assumes
 State and local response capability is impacted

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ESF #6 Scope

- Mass Care & Emergency Assistance
- Housing
- Human Services



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- ### Individual Assistance Authorities
- Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288) as amended
 - Homeland Security Act of 2002
 - Homeland Security Presidential Directive 5
 - Post-Katrina Emergency Management Reform Act of 2006
 - Pets Evacuation and Transportation Standards Act of 2006
 - National Flood Insurance Reform Act
-
- FEMA VA May 2010

- ### Sequence of Assistance
- Personal preparedness
 - Immediate Emergency Assistance (Mass Care)
 - Insurance
 - FEMA Housing Assistance
 - FEMA Other Needs Assistance
 - Small Business Administration
 - Income Evaluation
 - Referral to SBA or ONA
 - Long Term Recovery Committee case work
- FEMA VA May 2010

- ### Mass Care/Emergency Assistance
- Performed by local jurisdictions
 - Supported by Voluntary & Faith Based Organizations
 - State supports with National Guard and other
-
- FEMA VA May 2010

- ### Mass Care
- Sheltering
 - Feeding operations
 - Emergency first aid
 - Bulk distribution
 - Collection and provision of information on victims to family members
-
- FEMA VA May 2010

- ### Emergency Assistance
- Congregate Care Management
 - National Shelter System
 - Mass Evacuation Support
 - Evacuee Tracking
 - Support to specialized shelters
 - Household Pets and Service Animals
-
- FEMA VA May 2010

Housing Assistance

- Registration Intake
- Inspection Services
- Eligibility Determinations
- Up to \$ 29,900 (FY 2010)
- Financial Assistance
- SBA & OFA
- Direct Housing



VA May 2010

Human Services

- Disaster Case Management
- Crisis Counseling
- Disaster Legal Services
- Disaster Unemployment Assistance
- Other Needs Assistance
- SBA Disaster Loan Program
- Crime Victims Compensation
- Medical benefits
- Childcare
- Local Recovery Committees



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Voluntary Agency Liaisons (VALS)

- Facilitate information exchange
- Facilitate assistance from National Agencies
- Facilitate donated goods and services
- Set up Recovery Committees
- Facilitate applicant referrals
- Some Special Needs



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Other Federal Agencies

- US Army Corps of Engineers
 - Emergency Roof Repair
 - Support to Direct Housing Mission
- Housing & Urban Development
- Veterans Affairs
- USDA – Food, Pets, Rural Development
- Health & Human Services
- Corporation for National & Community Service (AmeriCorps, NCCC)
- Treasury & IRS



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Links

- ESF 6 On Line Training
 - <http://training.fema.gov/EMIWeb/IS/IS806.asp>
- National Disaster Housing Strategy Resource Center
 - <http://www.fema.gov/emergency/disasterhousing/>
- Robert T. Stafford Act as Amended
 - http://www.fema.gov/pdf/about/stafford_act.pdf
- Individual Assistance Home Page
 - <http://ia.fema.net/>



VA May 2010

Questions?



VA May 2010

ACF
THE ADMINISTRATION OF CHILDREN AND FAMILIES

Disaster Case Management

Prepared for: **VHA Comprehensive Emergency Management Program Evaluation and Research Conference**

May 4, 2010

CAPT Roberta Lavín, PhD, APRN-BC
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ACF
THE ADMINISTRATION OF CHILDREN AND FAMILIES

Overview of ESF-6

Self-Actualization:
Vitality
Creativity
Self-sufficiency
Authenticity
Playfulness
Meaningfulness

Self-Esteem

Love and Belongingness

Safety and Security

Physiological Needs
Air, Water, Food, Shelter, Sleep, Sex

ACF
THE ADMINISTRATION OF CHILDREN AND FAMILIES

Disaster Case Management

- Disaster Case Management
 - Disaster Case Management is the process of organizing and providing a timely, coordinated approach to assess disaster-related-needs including healthcare, mental health and human services needs that were caused or exacerbated by the event and may adversely impact an individual's recovery if not addressed.
 - This is facilitated through the provision of a single point of contact for disaster assistance applicants who need a wide variety of services that may be provided by many different organizations.

ACF
THE ADMINISTRATION OF CHILDREN AND FAMILIES

Activation

- Disaster Case Management
 - The Federally funded DCM Program may be deployed following an event that has been declared a Major Disaster by the President, where Individual Assistance (IA) has been authorized, and the State's request for Disaster Case Management has been approved by FEMA, to provide disaster case management assistance to disaster survivors.
 - FEMA will activate and fund ACF to implement the Federally-managed DCM program. When feasible, not later than five (5) days after a Major Disaster declaration, where Individual Assistance has been authorized, FEMA will facilitate a coordination call between the State, ACF, the FEMA Regional Office and FEMA Headquarters DCM program staff to discuss the State's intent to initiate a request for DCM. Should the State determine the need to request DCM, the State shall submit a Letter of Intent for approval to the Disaster Assistance Directorate (DAD) Assistant Administrator requesting activation of the DCM Program. Approval by the DAD Assistant Administrator will initiate notification to ACF for implementation of the ACF DCM Program.

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THE ADMINISTRATION OF CHILDREN AND FAMILIES

Key Elements

- Following a disaster declaration, work with state/local stakeholders to **identify existing public and private services and resources**, and identify gaps in resources needed for disaster-related response.
- Conduct outreach** to identify vulnerable and other special needs populations impacted by the disaster including but not limited to, individuals with disabilities, children, elderly, individuals with limited English proficiency, and people who have unmet disaster-caused needs. Outreach to these populations should be conducted through local VOADs, faith-based organization, state, and other local organizations.
- Screen** individuals to identify unmet disaster-caused needs that could benefit from disaster case management services, as opposed to identifying only immediate short-term needs that can be addressed by other service providers in the affected area.
- Ongoing **Triage** of clients' unmet disaster-caused needs to identify any immediate crisis needs (e.g., emergency healthcare, mental health issues, medication management). Provide information and immediate referral for individuals with urgent needs.
- For individuals seeking disaster case management services (clients), complete **comprehensive assessments** of clients' unmet disaster-caused needs to ensure that healthcare, mental health, and human services needs that may impede recovery are addressed.
- Develop **individual disaster recovery plans** with clients. Include specific goals and timeframes that link with the client's disaster-related-needs and any healthcare, mental health and human services needs that may impede recovery.

ACF
THE ADMINISTRATION OF CHILDREN AND FAMILIES

Key Elements

- Use a **tracking system to monitor and track progress** on clients entering and exiting the disaster case management system, including when they transition to other case management providers. Identify how information will be shared with other stakeholders.
- Advocate** and continue to advocate until the goals of the individual disaster recovery plan are met and the disaster survivor either returns to his or her pre-disaster status, is transitioned to another case management provider or the State's social service system or elects to discontinue services.
- ACF and FEMA will work to ensure that that disaster survivor cases from the DCM program are **transitioned to the State**. When the State-administered DCM is ready for implementation or when the State has determined there is no need for an additional program, ACF, in coordination with FEMA, will work with the State to transition disaster survivor cases to the State. The timeframe requirement for retaining closed case files is three (3) year. Record retention must always be consistent with relevant federal and state law and regulations, mental health and human services needs that may impede recovery.



Disaster Case Management Team

- The National Disaster Case Management Response Team (NDCMRT) is comprised of personnel from Federal agencies, Voluntary Organizations Active in Disaster and representatives of the National Partner. The National Partner is an organization selected by ACF through a formal full and open competition..
- Regional Teams are comprised of volunteers (paid or unpaid) identified, trained, equipped, and coordinated by the National Partner. These teams are comprised of disaster case management supervisors, case managers and support personnel. Regional teams may include or be supplemented with Service Access Teams (SAT) made up of U.S. Public Health Service officers that are health care professionals with case management experience and specialized disaster case management training.



Disaster Case Management Team

- The Local Teams are comprised of individuals or affiliates from local communities with experience in disaster case management. Ideally, a pre-identified state or local system for providing disaster case management exists to which all cases can be referred when the RDCMRT is no longer needed. Depending on the structure of the state, there are two possible options for transition to local teams:
 - If no state structure exists, the National Partner will identify voluntary and human services organizations that can be subcontracted to provide disaster case management services; or
 - If a state has an established disaster case management structure, the Federal Emergency Management Agency (FEMA) may provide a grant directly to the State.



DCM Service Delivery

- Deployment of the National and Regional Teams (within 24 hours). Upon Presidential disaster declaration, the receipt of the State's DCM request, and FEMA's authorization of that request, ACF initiates deployment activities with the National Team. This includes, but is not limited to:
 - Setting up communications, phones and computers
 - Identifying space within the Joint Field Office (JFO) or other location if the JFO is not established
 - If additional office space is needed, making arrangements for this space and notifying ACF, FEMA, and other stakeholders about its location
 - Rostering the Regional Teams
 - Handling personnel and equipment logistics
 - Participating in conference calls with ACF, FEMA and the State



DCM Service Delivery

- Basic service identification from the Alliance of Information and Referral Systems (AIRS)/211 LA County Taxonomy of Human Services. Identification of sources for basic services.
 - Basic needs: emergency food
 - Basic needs: emergency shelter
 - Basic needs: housing/shelter
 - Basic needs: material goods
 - Basic needs: temporary financial assistance
 - Basic needs: transportation
 - Consumer assistance and protection
 - Legal assistance modalities
 - Domestic animal services
 - Healthcare
 - Mental healthcare and counseling
 - Employment
 - Public assistance programs
 - Social insurance programs
 - Individual and family support services
 - Post-disaster child care



DCM Assessment: Assessing Needs and Services

- The Disaster Case Manager assesses the needs of the client and availability and eligibility for available services, including:
 - Entitlement benefits (Temporary Assistance for Needy Families, Social Supplemental Income, Food Stamps, state general assistance, affordable housing assistance, others)
 - Housing (utilities, disaster damage, rent/own)
 - Special needs determination (people with disabilities, persons with severe medical needs, isolation, limited English skills, limited reading skills, others)
 - Employment
 - Financial (including completion of a budget worksheet)
 - Transportation
 - Childcare and other child and youth needs
 - Medical needs (medications, nutrition, glasses, hearing aids, dentures, canes, walkers, wheelchairs, personal assistants, caregivers, service animals, others)
 - Language skills (translation, literacy assistance, sign language)
 - Mental and physical health and well-being
 - Other human service needs



Disaster Case Management Closeout Evaluation

- Purpose
 - The purpose of the evaluation was to explore specific topics related to the implementation of the disaster case management pilot program in Louisiana following Hurricanes Gustav and Ike.
- Implementation
 - After-action report from lessons learned roundtable
 - CAN data analysis
 - Semi-structured interviews
 - Chart reviews



Disaster Case Management Closeout Evaluation

- Goal
 - The goal of the DCM chart review was to conduct a mixed methodology random sampling study to assess and measure specific topics related to client outcomes as derived from the recommendations of the 2009 Government Accountability Office (GAO) report that addresses federally funded disaster case management pilots.
 - Did those most in-need receive adequate services?
 - What were client outcomes?
 - Identify positive or negative factors that contributed to those outcomes, and
 - What was the role of specific services such as direct assistance and long term recovery resources in helping clients achieve their goals (<http://www.gao.gov/products/GAO-09-561>)

The Haiti Earthquake Dartmouth Responds, VA Opportunities?

Jim Geiling, MD
Chief, Medical Service
VAMC, White River Junction, VT
Assoc. Prof. of Medicine
Dartmouth Medical School, Hanover, NH
James.Geiling@med.va.gov

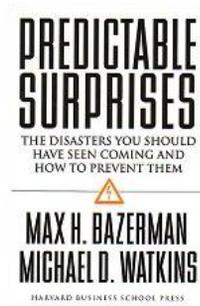
Agenda

- Discuss typical medical conditions in earthquakes
- Highlight Academic-NGO-Gov't/DOD-HN interactions
- Review patient care processes in a resource-constrained setting
- Discuss patient triage processes and challenges in providing care in a disaster zone
- Highlight VA opportunities for research

Acknowledgements

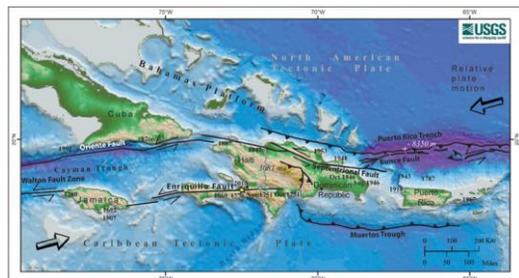
- Geraldine Coyle
- Aram Dobalian
- Shawn Fultz
- Family, VA peers, Dartmouth Community
- My views, not VA
- No COI...but looking!
- No off label use of drugs – didn't have any!

Predictable Surprises



http://balasc.org/wp-content/uploads/2009/10/Haiti_earthquake_by_Latuff2.jpg

Predictable Earthquake?

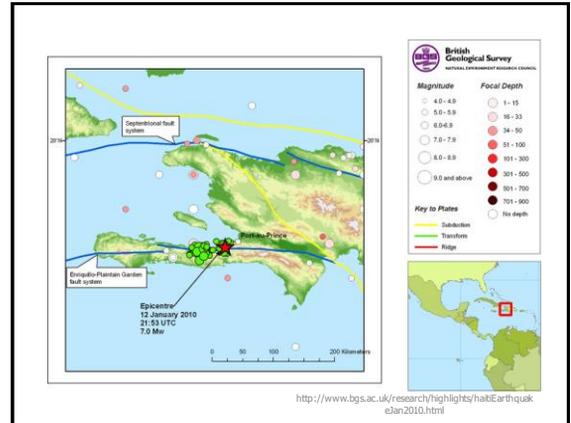


http://woodshole.er.usgs.gov/projects/caribbean/images/A-ribles_fault_map_USGS.jpg

Demographic Data

- The World Health Organization has a Collaborating Centre for Research on the Epidemiology of Disasters (CRED).
- Since 1988, CRED has been maintaining an Emergency Events Database (EM-DAT) – <http://www.emdat.be>

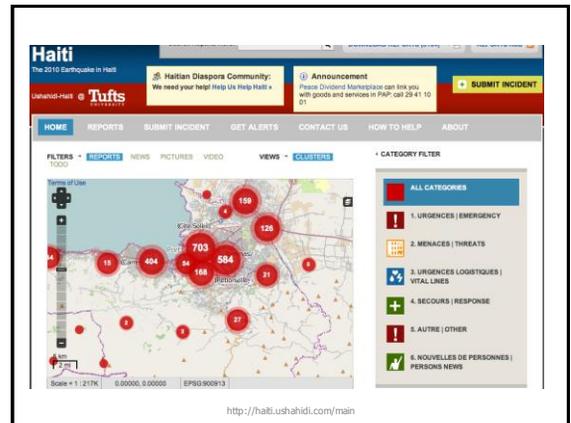
Copyright 2009 Society of Critical Care Medicine



January 12, 2010

- 7.0 M_w earthquake
 - Centered at Léogâne, 25 km W of PAP
 - 13 km deep
 - 14 aftershocks between 5.0 and 5.0
 - 3M affected, 200+K dead
 - 1M homeless

http://en.wikipedia.org/wiki/Haiti_earthquake#cite_note-6



Why Dartmouth?

Dr. Jim Yong Kim, 17th President of Dartmouth College



Paul Farmer, MD



Partners in Health

DTeam 2



DTeam 2

- Departed 1:15PM JAN 19 to Santo Domingo, Dominican Republic
- Drove to Port Au Prince via Jimeni JAN 20
- Returned 10:30PM JAN 30

Port Au Prince

- Incorporated under French Rule 1749 as Capital
- Population 700K; metro area 3 Million
– 7X more dense than London
- People principally African descent
- Sister City - Miami



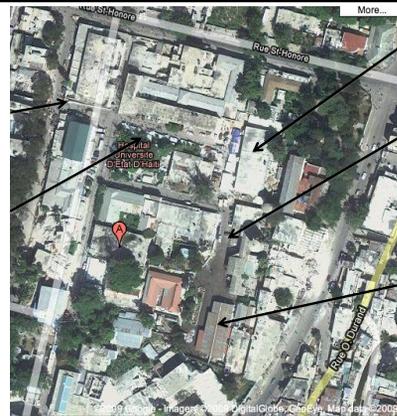
http://en.wikipedia.org/wiki/Port_au_prince



http://en.wikipedia.org/wiki/Port_au_prince



Hospital Universite D'Etat D'Haiti (HUEH)











Aha Moment!



Where's VA?
Opportunities to Engage



Haiti's Challenge

- 217-230,000 dead
- 300,000 injured
- 1,000,000 homeless

- Handicap International
 - 8 expatriates
 - 140 national employees
 - 50 patients w/ artificial limbs as of 3/24/10



<http://www.handicap-international.us/h/>



First day out
of bed in 4
weeks



May 2, 2010



VA Opportunities

- Deployment research
 - DEMPS response in mixed NGO/gov't agency setting
 - Meta-leadership
- Clinical care research and education
 - Preparing staff and processes for austere setting
 - Management of crush injuries (SF Earthquake)
 - Education of local HCWs

VA Opportunities

- Rehabilitation research and education
 - Rehabilitation in an austere setting (Katrina)
- Prosthetics research and education
 - Provision of robust, "cheap" prosthetics (veterans in rural settings)
 - Prosthetic longevity research
- Staff engagement
 - DEMPS rehearsal
 - VA is there to help

Thank you!



James.Geiling@va.gov
James.Geiling@dartmouth.edu



Medical Operations in Haiti: The Ghesiko Field Hospital January 25th to February 5th, 2010

Daniel Bochicchio, MD, FCCP
Baltimore VA Medical Center
Assistant Professor University of Maryland, SOM
Colonel, Medical Corps Maryland Army National Guard

Situation

- On January 12, 2010 a magnitude 7.0 earthquake struck the island of Haiti*
 - The epicenter was located 16 miles southwest of the capital city of Port-au-Prince (pop. 1.23 million) in the vicinity of the town of Léogâne.
 - An estimated 212,000 lives were lost and over 3 million people have been affected.
 - Massive losses of critical healthcare infrastructure and medical personnel have occurred.



* U.S. Geological Survey (<http://earthquake.usgs.gov>) Accessed 20 April 2010

Background and Mission

- POTUS tasks the Federal government to respond to the disaster and provide support to the Government of Haiti.
 - The Department of Health and Human Services (HHS) tasks the National Disaster Medical System (NDMS) to provide medical support.
 - NDMS activates several Disaster Management Assistance Teams (DMAT) as well as the International Medical Surgical Response Team (IMSuRT)
 - A field medical capability is developed consisting of DMAT team members and members of the IMSuRT teams
 - The HHS SOC requests VHA / EMSHG to assist in filling critical personnel shortfalls on the team thru DEMPS

Situation on the Ground

- The Devastation in Haiti was striking.
 - Many areas of the capital are inaccessible
 - Infrastructure is destroyed
 - Potable water, food delivery
 - Sewers and Sanitary systems
 - Trash collection
 - Electricity
 - Healthcare system collapsed
 - Only one airport
 - Small seaport



Situation on the Ground



Situation on the Ground





Displaced Persons Camp
located next to the Ghesiko
Field Hospital.
Population on 30 Jan ~5000



IMSuRT-DMAT team deploys

- Med/Surg capability is established on 17 Jan.
- Second rotation begins on 24 Jan.
- Team consists approximately 80 personnel
 - 1 Anesthesiologist/Intensivist
 - 8 General Surgeons, 3 Orthopedic Surgeons, 1 OB/GYN's , 1 Vascular Surgeon
 - 2 Family Practice/Internist, 2 Emergency Medicine, 1 Critical Care, 1 Peds-ER and 1 Prev Med attending.
 - 1 CRNA, 1 PA, ~30 RN's, 3 RT's, 1 Scrub Nurse and 1 Scrub Tech
 - Command, commo and logistics personnel.

Medical operations

- Site consisted of
 - Triage-intake Tent/area
 - One Operating Room
 - 6 Critical Care Beds
 - plus cots under the Stars
 - Pediatrics tent
 - Isolation Tent (TB)
 - Minor Procedure tent
 - Pharmacy/sick bay
 - Logistics
 - Command – Admin tent



Medical Care Under Austere Conditions.....



Medical Care Under Austere Conditions.....
Requires Creative Solutions:

“McGuiver meets Gilligan's Island”



Adapt, Improvise and Overcome!



The Line Waiting to be Seen.... Every day



What Was Accomplished?

- In 2 weeks the IMSuRT team:

- Saw over 1200 patients
- Performed over 55 major surgeries
 - 3 Gunshot Wounds, 1 Stab wound
 - 1 Pedestrian Struck by Auto
 - 2 Cesarean Sections, 5 Vaginal Deliveries
 - Cholecystectomy, 2 cancer operations
- Performed > 225 minor procedures
 - Wound debridement, flap revisions, external fixation revisions, etc.



Lessons Learned

1. Must have the proper mix of providers to be effective.
 - 14 Surgeons vs 1 Anesthesiologist/ 1 CRNA vs 2 Scrub techs ??
 - No Mental Health providers!
2. All members of the team must be familiar with and know how to use the equipment
3. Logistics support is critical to *sustained operations*
4. Expect the unexpected
 - Anticipate it!
 - Think outside the box

Lessons Learned (continued)

5. Always take care of yourself
 - Don't become a casualty
 - *It makes more work for the rest of us!*
 - Don't burn yourself out
 - *Everyone needs rest, even you!*
6. Remember: They are not called the basics for nothing!
7. Do the most good for the most people
 - Expend your limited resources wisely

Lessons Learned: Medical Site Selection is Critical

1. Site must be large enough to accommodate mission
 - Treatment and Sleeping areas must be located away from operational hazards
2. Seek high ground with good drainage
 - Avoid lowlands
 - They will floor and turn to mud
3. Natural lines of patient drift; where will victims go?
4. Easy access for Ambulances and Helicopters
 - Maintain one way flow of traffic

Lessons Learned: Medical Site Selection is Critical (continued)

5. Avoid locations that cannot be safely secured
 - Displaced Persons camps
 - High value targets; food and water distribution centers
6. Dispose of trash and medical and human waste at a safe distance from the site.
7. Do not burn trash or waste in open burn pits
 - Use field expedient burn techniques
 - Enforce good field sanitation
 - Designate a Field Sanitation Team if needed

Questions ?

daniel.bochicchio@va.gov



ATLANTA VAMC NDMS FEDERAL COORDINATING CENTER

HAITI EARTHQUAKE RELIEF OPERATION 2010



KEN WHEELER, RN, BS, MS – EMSHG AEM, ATLANTA

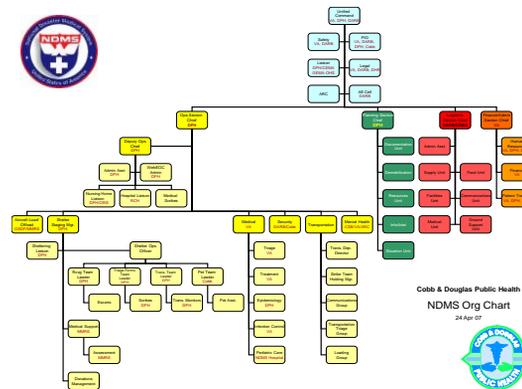
HAITI EARTHQUAKE RELIEF OPERATION 2010 TEAM GEORGIA



HAITI EARTHQUAKE RELIEF OPERATION 2010 BE PREPARED



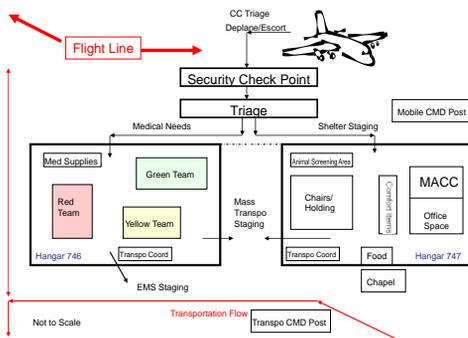
Monika Nikore, ADL News
Marie Mompoint, a Haitian-American nurse practitioner, second from left, confers with other medical staff on procedures before the Haitian patients arrived Friday.



Cobb & Douglas Public Health
NDMS Org Chart
24 Apr 07



Atlanta NDMS Patient Reception Area



HAITI EARTHQUAKE RELIEF OPERATION 2010 ATLANTA FCC PATIENT RECEPTION TEAM

BASIC PERSONNEL PACKAGE

- 1 Area Emergency Manager (Incident Commander)
- 1 Patient Reception Team Leader (EPC)
- 2 Physicians (Primary Care – ER/Trauma)
- 3 Nurses – Primary Care – ED – Psych
- 2 HAS (Patient Administration - JPATS)
- 8 Medical Staff (Tailored - Various Disciplines)
- 1 Physician's Assistant
- 1 Respiratory Therapist
- 1 IT Specialist
- 1 Chaplain

Safety First!!

- Reflective belts/vests
- Ear protection
- FOD-foreign object debris
- Aircraft safety- never approach without spotter
- Only go to the flight line accompanied
- Ramp safety
- Safe off loading of patients

HAITI EARTHQUAKE RELIEF OPERATION 2010 KNOW THE PLAN



HAITI EARTHQUAKE RELIEF OPERATION 2010 BE A TEAM PLAYER



Monika Nikore, AOL News
Medical personnel check a Haitian earthquake victim before transporting the patient and family members to an area hospital

HAITI EARTHQUAKE RELIEF OPERATION 2010 EXECUTE! EXECUTE! EXECUTE!



Monika Nikore, AOL News
A Haitian patient is carried off for transfer to an Atlanta hospital.

HAITI EARTHQUAKE RELIEF OPERATION 2010 EXPECT THE UNEXPECTED





Mission Uniqueness

- Patients were given immigration parolee status
- Customs and Border Protection boarded the aircraft with translators to “clear” EVERYONE before transferring patients to EMS units
- CCATT flight crew often requested a physician to accompany patient during transport
- Patients were gravely wounded and ill
- No screening in Haiti for communicable diseases
- Patient were regulated directly to hospitals
- VHA LNO at GPMRC

Customs and Border Protection



Media Allowed on Base for 2 Flights



MISSION BREAKDOWN



49 patents to 20 NDMS hospitals during 11 mission days
****Non-NDMS hospitals offered immediate NDMS membership!****
 2 active duty military patients to Atlanta VAMC
 21 non-medical attendees
 21 participating hospitals

- 3 patients with Tetanus
- 1 premature child (27 weeks gestation)
- Multiple amputations and crush injuries
- 2+ Pediatric patients post craniotomies
- 2+ pregnant patients with crush injuries
- Multiple limb fractures and crush injuries
- Multiple severe wound infections
- Multiple medical complications-severe infections



HAITI EARTHQUAKE RELIEF OPERATION 2010 QUESTIONS?



Monika Nikore, AOL News
 A C-130 military transport plane sits on the tarmac at Dobbins Air Force Base in Marietta, Ga., after flying in four Haitian medical evacuees from the USNS Comfort hospital ship in Port-au-Prince, Haiti.

Ready or Not?

Health System Preparedness in 2010

Art Kellermann, MD, MPH



Outline

1. National overview
2. Current challenges
3. IOM recommendations
4. Progress since 2006
5. Three key issues
6. VHA opportunities



An Essential Community Service

- The “front lines” of our nation’s health care system
- Key components:
 - EMS
 - Trauma Centers
 - Poison control
 - Public health
 - Disaster response



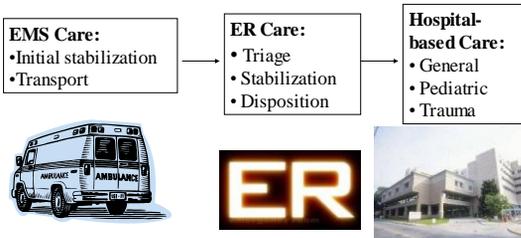
A Key Access Point

ERs handle

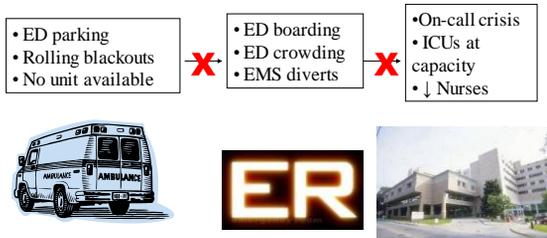
- 11% of all outpatient encounters
- 38% of all acute care visits
- Entry point for half of all hospital admissions
- Use growing at 2X population growth



Emergency Care System



“Access Block”



Hospital Crowding

- 90% of level I TCs and hospitals >300 beds are “at or above” capacity (Lewin Group, '02)
- Lack of ICU beds the most common cause of diversion (GAO, '03)
- Big urban hospitals are most likely to divert (CDC, '06)



EMS Spillover

- EMS transports 20-30M patients/year
- But ½ million inbound ambulances were diverted in 2003
- Diversion delays access to care and ties up units
- “No units available” a common result



“Most Americans still have no idea how dangerous it has become to be ill or injured at the “wrong” time...” (1/03/01)

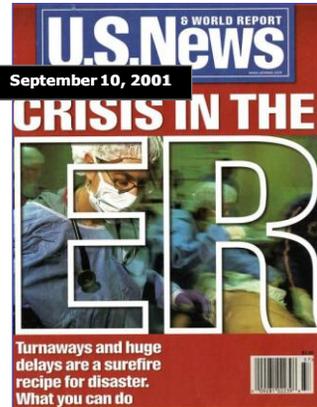


Emergency rooms struggle with crowding

Ambulances sometimes directed away from the nearest hospital

Emergency rooms are struggling to cope with the surge in patients, and some are being forced to turn away ambulances. In some cases, ambulances are being directed to other hospitals, even if they are further away. This is a sign of the severity of the problem. In some cases, ambulances are being directed to other hospitals, even if they are further away. This is a sign of the severity of the problem.

Emergency rooms are struggling to cope with the surge in patients, and some are being forced to turn away ambulances. In some cases, ambulances are being directed to other hospitals, even if they are further away. This is a sign of the severity of the problem. In some cases, ambulances are being directed to other hospitals, even if they are further away. This is a sign of the severity of the problem.



Institute of Medicine

2006: IOM releases “The Future of Emergency Care in the US Health System”

FUTURE OF EMERGENCY CARE
HOSPITAL-BASED EMERGENCY CARE
AT THE BREAKING POINT

FUTURE OF EMERGENCY CARE
EMERGENCY MEDICAL SERVICES
AT THE CROSSROADS

FUTURE OF EMERGENCY CARE
EMERGENCY CARE FOR CHILDREN
GROWING PAINS

IOM:
“Designate a lead federal agency”



IOM:
“Regionalize emergency care”



IOM:
“End boarding and EMS diversion”



IOM:
“Improve the organization and funding of emergency care research”



IOM:
“Strengthen Disaster Preparedness”



The IOM’s vision: “A regionalized, coordinated and accountable emergency care system.”



Recent Government Reports

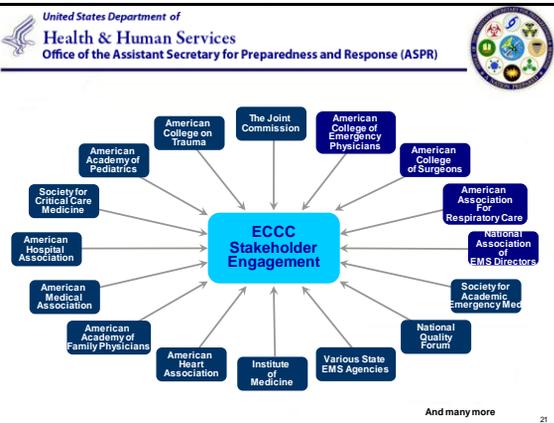
- **6/07:** House hearing on "HHS' response to the nation's emergency room crisis."
- **5/08:** House study finds severe ED and ICU crowding in 7 U.S. cities at high risk of terrorist attack.¹
- **4/09:** GAO reports that the sickest ED patients are waiting twice recommended time limits.²



1. U.S. House of Representatives Committee on Oversight and Government Reform Majority Staff. Hospital Emergency Surge Capacity: Not Ready for the "Predictable Surprise". Washington, DC: U.S. House of Representatives, May 2008.
2. United States Government Accountability Office. Hospital Emergency Departments: Crowding Continues to Occur, and Some Patients Wait Longer than Recommended Time Frames. Washington DC: U.S. Government Accountability Office, April 2009. GAO-09-347.



Emergency Care Coordination Center (ECCC) ASPR HHS



Council on Emergency Medical Care

- ECCC (Chair)
- DOT/NHTSA OEMS (chairs FICEMS)
- DHS (OHA)
- VA, DoD
- CMS, ONC, IHS
- NIH, AHRQ, CDC, HRSA

1. Surge Capacity



In a Moment's Notice: Surge Capacity for Terrorist Bombings

Challenges and Proposed Solutions



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
Coordinating Center for Environmental Health and Injury Prevention
National Center for Injury Prevention and Control



**Capacity at Level I Trauma Centers in 7 U.S. Cities
@ 4:30 PM, Tuesday, March 25, 2008**

City	# Patients Being Treated	ER Treatment Spaces (Capacity)	% of Capacity Being Used in ERs	Available Treatment Spaces
New York City	943	829	114%	56
Los Angeles	286	246	116%	6
Washington, D.C.	135	63	214%	0
Chicago	203	152	134%	8
Houston	123	154	80%	32
Denver	81	88	92%	8
Minneapolis	52	57	91%	5

Source: Majority Staff, House Committee on Oversight and Government Reform. *Hospital Emergency Surge Capacity: Not Ready for the "Predictable Surprise" May, 2008*

**Rising Demand, Falling Supply:
1993 - 2003**

- Population +12%
- Admissions +13%
- ED visits +26%
- Hospitals - 703
- EDs - 425
- Inpt Beds -198,000

"Worst First" vs. "Money Matters"

- Elective admissions get priority, because they pay higher margins, are insured and it keeps referring MDs happy
- OR "Block time" keeps surgeons happy
- "Boarding admissions keeps ward nurses happy
- "2 (admissions) for the price of one" keeps administrators happy



**Actions to Quickly Augment
A Hospital's Surge Capacity**

- Immediately clear the E.R.!
 - Pull admitted & "likely to be" to the floors
 - Able to go home? Discharge immediately
- Increase the number of triage areas
- Cancel elective procedures and admissions
- Convert pvt. rooms to double occupancy
- Use common areas for overflow
- If needed, temporarily board patients in hallway beds on inpatient units



Where would you rather spend your first day in the hospital?

Here...



Where would you rather spend your first day in the hospital?

Here...

...or here?



2. Trust, but Verify



“Disaster preparedness of individual hospitals has improved significantly”

- Hospital leaders “actively supporting and participating in preparedness activities”
- Disaster coordinators have “given sustained attention to preparedness and response activities”
- Hospital EOPs “more comprehensive”
- Disaster training “more rigorous and standardized”
- Hospitals have stockpiled emerg supplies and meds
- Situational awareness and communications improving
- Exercises “more frequent and of higher quality”

* Source: Evaluation Report, March 2009



“Who you gonna believe?
Me, or your lying eyes?”



Public Health Response to Urgent Case Reports

- 20 local public health agencies (LPHAs) studied; all reported that they have 24/7/365 call systems in place
- LPHA directors agreed to “unannounced” tests, on condition of agency anonymity
- Only 42% returned calls within 30 mins; delays typically occurred at end of day, evenings and weekends
- Three LPHAs did not return their first 5 phone calls
- Wide heterogeneity observed in call handling and advice

Source: Dausey DJ, Lurie N, Diamond A. Public Health Response to Urgent Case Reports. *Health Affairs*, August 2005

What Was the Quality of Telephone Advice?

- *“Pustules on the face, arms and legs with lesions in the same stage of development”* – No LPHA suggested isolating the pt. or use of PPE
- *Symptoms suggestive of botulism* “You’re right, it does sounds like botulism. [But] I wouldn’t worry too much if I were you.”
- *Classic symptoms of bubonic plague* “Go back to bed” (no similar cases reported that day)

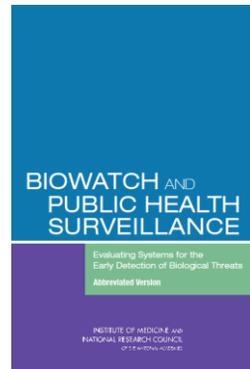
Source: Dausey DJ, Lurie N, Diamond A. Public Health Response to Urgent Case Reports. Health Affairs, August 2005



Would a Busy Triage Nurse Do Better?



3. Harness IT to Make Better Decisions

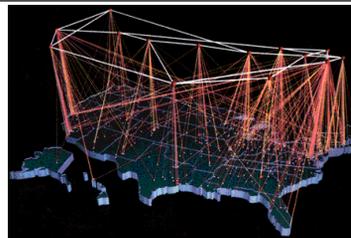


Computerized decision support

Connecting...
patients,
providers
& public
health



Web-Enabled Situational Awareness



THE NATIONAL

ACADEMIES

Improve Information Sharing for Better Situational Awareness

9. DHS and HHS should enhance the efforts to develop a mechanism for providing a national situational awareness of biological threats and significant disease outbreaks, to better inform rapid decision making and response through cross-jurisdictional data sharing and analysis of data.

THE NATIONAL

ACADEMIES

Improve Information Sharing for Better Situational Awareness

9. ...To this end, DHS and HHS should facilitate the development of an interoperable, secure, bidirectional, nationwide information-sharing infrastructure and ensure that local and state health officials have ready access to the system



Web-based Self-Assessment



- 1. Case Definition:** Does this person have “influenza-like illness”?
- 2. Assess Illness Severity:** Does he/she have dangerous symptoms?
- 3. Evaluate Risk:** Does he/she have a health condition that increases the risk of *developing* severe disease?

Risk-Based Recommendations

“High Risk”

- ✓ Immediately seek care in an ED



“Intermediate Risk”

- ✓ Go to a primary care provider or clinic



“Low Risk”

- ✓ Home Self Care



Self-Triage Goes Live: October 7, 2009

- Two versions deployed (both based on CDC/Emory algorithm)
 - ✓ Microsoft: www.H1N1ResponseCenter.com
 - ✓ U.S. Government: www.Flu.gov
- Both versions designed for older adolescents & adults
- Pediatric versions crafted but not deployed

EDITORIAL — Harvey V. Fineberg and Mary Elizabeth Wilson

Epidemic Science in Real Time

FEW SITUATIONS MORE DRAMATICALLY ILLUSTRATE THE SALIENCE OF SCIENCE TO POLICY THAN AN epidemic. The relevant science takes place rapidly and continually, in the laboratory, clinic, and community. In facing the current swine flu (H1N1 influenza) outbreak, the world has benefited from research investment over many years, as well as from preparedness exercises and planning in many countries. The global public health enterprise has been tempered by the outbreak of severe acute respiratory syndrome (SARS) in 2002–2003, the ongoing threat of highly pathogenic avian flu, and concerns over bioterrorism. Researchers and other experts are now able to make vital contributions in real time. By conducting the right science and communicating expert judgment, scientists can enable policies to be adjusted appropriately as an epidemic scenario unfolds.

In the past, scientists and policy-makers have often failed to take advantage of the opportunity to learn and adjust policy in real time. In 1976, for example, in response to a swine flu outbreak at Fort Dix, New Jersey, a decision was made to mount a nationwide immunization program against this virus because it was deemed similar to that responsible for the 1918–1919 flu pandemic. Immunizations were initiated months later despite the fact that not a single related case of infection had appeared by that time elsewhere in the United States or the world (www.iom.edu/swinefluaffair). Decision-makers failed to take seriously a key question: What additional information could lead to a different course of action? The answer is precisely what should drive a research agenda in real time today.

In the face of a threatened pandemic, policy-makers will want real-time answers in at least five areas where science can help pandemic risk: vulnerable populations, available interventions, implementation possibilities and pitfalls, and public understanding. Pandemic risk, for example, entails both spread and severity. In the current H1N1 influenza outbreak, the causative virus and its genetic sequence were identified in a matter of days. Within a couple of weeks, an international consortium of investigators developed preliminary assessments of cases and mortality based on epidemic modeling.¹

¹ *Fluor et al., Science 11 May 2009 (10.1126/science.1174602).*



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VHA Can Lead

- You are the largest integrated delivery system in the nation
- You have important homeland security missions that compliment your core role of support to veterans
- Emergency management is your 4th mission – and the least understood by the public
- You can be a shining example for the country



Current Roles

- Emerg. Mgmt. for the VA
- Coordinate medical backup to DoD
- Assist the public via NDMS and the National Response Plan (especially in the realms of health and medical – Emergency Support Function #8)
- Disaster support and on-site monitoring and backup for certain national events
- Maintain pharmaceutical caches



A New Mission?

Conduct internal and collaborative R & D with the private sector to define best practices in:

- Assuring surge capacity
- System resource management
- Performance metrics & accountability
- Value of HIT for “real time” decision support
- Situational awareness
- Other priority issues and concerns

“A federal presence in the local community”



VHA CEMPER 2009 RESEARCH PRIORITIES

Behavioral Health Workgroup¹

Priorities

1. Preventing and treating post-disaster development or exacerbation of behavioral health problems among veterans
2. Examining the impact of large-scale emergencies and disasters on behavioral health needs of veterans
3. Identification and evaluation of existing post-disaster mental health interventions among veterans

Key Questions/Research Topics

1. How can VA mitigate the impact of a disaster or mass casualty event on the physical, psychological, and social functioning of veterans with pre-existing or emergency behavioral health issues?
2. How does VA assure adequate and appropriate post-disaster access to quality emergency behavioral health services, both for veterans receiving services from VA and for veterans

¹ Workgroup participants were provided with a sheet that described each workgroup and included a list of potential topics. The list was not intended to be exhaustive. Members were not required to focus on the topics described for each workgroup if the members believed that other issues within the workgroup area were of higher priority. We have listed the full description for each workgroup in the footnotes. “The Behavioral Health workgroup will focus on mental health and substance use and abuse issues. Some of the topics of conversation may include: effective ways to manage health consequences after disasters (e.g., psychological first aid); veterans with mental health problems; preventive mental health measures; population risk management (e.g., how to train response teams, how to address the emotional consequences of the worried well, evidence-based crisis counseling); and dealing with the psychological consequences of H1N1 or pandemic influenza.” Note also that the order of the priorities and key questions/research topics is not meant to imply a ranking of the relative importance of each priority or question.

seeking VA health services for the first time? Examples of specific questions within this broad area of inquiry included:

- a. What systems are in place to assure access and continuity of care for current VA health care users who are displaced or impacted by an event?
 - b. What administrative processes are necessary for a veteran who is new to VA to receive services and is there a need to expedite or modify these processes to provide emergency behavioral health services?
 - c. What type of behavioral health services will be most needed post-disaster?
 - d. Who is likely to seek post-disaster behavioral health services through VA?
 - e. How can VA identify veterans who may need post-disaster behavioral health services, but are not likely to seek out or access the services?
3. What post-disaster mental health interventions are currently used by VA? Who provides the interventions and how are the providers trained? How, if at all, are the interventions evaluated? What is the association between these early intervention strategies and long-term mental health outcomes?
 4. Assess the psychosocial consequences of disasters and emergencies for the “worried well,” and develop evidence-based strategies to minimize those consequences.
 5. How, once identified, do we build “best practices” for addressing the behavioral health impacts of disasters into VA’s emergency management system?

Workforce Workgroup²

Priorities

1. Rigorous research about the effectiveness of training and education programs is lacking
2. Research should differentiate between demonstrating competencies of individuals from systems capacity, which is dependent on infrastructure

Key Questions/Research Topics

1. Evaluation
 - a. What evaluation methods are currently being used to assess workforce training outcomes?
 - b. How are exercises being used to assess workforce competency?
 - c. Develop recommendations for optimizing the learning potential for attendees who participate in emergency management exercises.
 - d. How does prior training of staff affect performance?
 - e. Develop recommendations for the most effective methods of learning their roles and responsibilities before, during and after disasters for each of the various job groups within VHA's emergency management competency framework (all employees; health system leaders; patient care providers; clinical support; facilities and engineering; law enforcement; and, emergency program managers).
2. Leadership Skill Development

² “The Workforce workgroup will focus on issues of concern to VA employees. Some of the topics of conversation may include: designing and evaluating more effective education and training strategies for healthcare personnel; competencies; how to effectively engage healthcare providers in decision making related to emergencies; DEMPS teams; and competing concerns for the safety of family members.”

- a. To what extent is the leadership at VA facilities able to apply FEMA 100-800 standardized training to its facility?
 - b. Is further training necessary and in what areas?
 - c. How do VA facility leaders' expectations for preparedness differ across staff?
 - d. What questions does VA leadership have about workforce and emergency management and preparedness (needs assessment)?
3. Optimally Utilizing Existing Data
- a. How can the Comprehensive Emergency Management Program (CEMP) data that was collected by Booz Allen Hamilton be used to answer questions about workforce and emergency preparedness?
 - b. What are the mutable and immutable characteristics of high-performing systems identified by the Booz Allen Hamilton report?
4. Relationship between Local and National Preparedness
- a. What locally-provided training predisposes individuals to be more effective during national deployments?

Communication and Information Flow Workgroup³

Priorities

1. Decision-making process
2. Communication with external audience
3. Crisis communication strategies and management
4. Internal communication, decision-making and information management
5. Communication tools and techniques
6. Media
7. Culture and culture change

Key Questions/Research Topics

1. How effective is decentralized decision-making for the veteran population and VA community?
2. How well does VA communicate with veterans (particularly for certain groups of veterans such as the homeless, veterans in the community) and the public?
3. Determine the most effective strategies for communicating with at-risk veterans before, during, and after impacts from hazards, and provide recommendations on how these strategies may change based on the nature of the hazard or the particular group of at-risk veterans.

³ Topics of discussion for the Communication & Information Flow workgroup may include: information flow and decision-making processes; effective formation of leadership during an emergency; VA and non-VA interorganizational relationships at the federal, state, and local levels, and with non-governmental actors; addressing uncertainty of information; understanding and adherence to messages for veterans, the community, and the workforce; and risk communication. This workgroup may discuss behavioral decision science, management theory, and the use of technology for communication, including telehealth and call centers.

4. How well integrated is crisis communication integrated in VA preparedness and response activities? How effective is it?
5. Is communication flow from decision-making to clinicians and staff adequate?
6. Determine the most effective strategies for communicating with employees after major disasters.
7. How does VA effectively monitor social media and respond?
8. How effectively is VA partnering and working with the media around emergency management?
9. How well does VA's general employee culture adapt to the disaster and response culture?

Sustainability and Resilience Workgroup⁴

Priorities

1. Emergency management visibility and capability building
2. Community integration
3. Supply chain limitations (especially pharmaceutical caches and hospital bed capacity)
4. Staff resilience and other resilience issues
5. Special needs patients

Key Questions/Research Topics

1. Who and what organizations constitute and are possible and probable partners of VA, especially during an event?
2. What tools must be developed to map out networking, communications, and cooperation opportunities with community's healthcare providers and public health departments?
3. How can VA gauge the awareness of supply chain limitations?
4. What tools must be developed to identify the locations of national and VA suppliers?
5. How can VA compare actual versus theoretical hospital bed capacity?
6. What training should VA staff receive to lower mental health stress (especially during an event), maintain proficiency, and be adequately and appropriately cross-trained?
7. What role can VA play in leading community resilience efforts?
8. How can VA examine and test community resilience?

⁴ “The Sustainability & Resilience workgroup will focus on sustainability of resources for emergency preparedness and response including: (a) prioritizing areas in which to invest scarce resources; (b) attention to quality and cost; and (c) how to leverage existing systems or establish dual-use systems. This workgroup also involves discussions about challenges related to the ebb and flow of funding related to the disaster cycle. Finally, this workgroup will focus on the resilience of veterans and the VA, as well as community resilience in general.”

9. How to assess needed support systems to assure access to services and continuity of care for veterans who are displaced or otherwise impacted by a disaster or emergency?
10. What strategies and tactics should VA treatment facilities incorporate into their emergency management programs to be ready for the effects of convergence during and after community disasters?
11. How can VA coordinate emergency preparedness/management efforts within a broader community?
12. Identify the targets, frequency and nature of collaborations necessary for VA treatment facilities can use to establish effective mutual-aid relationships with community health care partners and public safety agencies.
13. How can VA map out networks/cooperation between VA and local healthcare providers?
14. Who is considered a special needs patient?
15. What are the most vulnerable populations of veterans?
16. Ascertain the percentage(s) and locations of veterans who fall into one or more socioeconomic or demographic categories for those who are considered at higher risk from the effects of hazards.
17. Develop recommendations to address the special needs of veterans in general, and specific vulnerable populations of veterans including veterans with cognitive or functional impairments (e.g., those with traumatic brain injuries or spinal cord injuries), homeless veterans, veterans living with HIV/AIDS, frail veterans in the community (e.g., those needing oxygen), and veterans with posttraumatic stress disorder (PTSD).
18. What is the backup plan to assist veterans with special needs during an event?

Systems Capability Workgroup⁵

Priorities

1. Evacuation and sheltering in place
2. Develop “off-the-shelf” evaluation protocols and surveys for use in the immediate aftermath of an event
3. Developing common standards of practice, looking both nationally across VAs as well as within local community settings
4. Staffing variables to consider when responding to a multi-casualty incident since VAMCs are typically not acute trauma centers
5. Breakdown of communication within a community, in particular when regular communication lines are down
6. Assessing actual volunteer capabilities

Key Questions/Research Topics

1. Develop decision support tools that healthcare providers and officials would need in the event of various disasters and emergencies.
2. The development of criteria and algorithms for evacuating patients, to be determined pre-incident and to guide the process of how to make decisions effectively.
 - a. Assess current hospital and nursing home evacuation procedures and develop recommendations to improve their effectiveness.

⁵ “The Systems Capabilities workgroup will focus on broader healthcare system and population issues that may be applicable to all healthcare systems (e.g., when and how to evacuate facilities). This workgroup may also focus on veteran and internal VA-specific issues. Topics for discussion may include particular research issues that would be appropriate for the development of “off-the-shelf” research protocols that could be ready for use in the event of an emergency or disaster (e.g., evacuation of facilities, pandemic influenza). This workgroup may also discuss methodological approaches that could be used for such events.”

3. When is it safer for an institution to not evacuate, but rather focus on facility hardening, sufficient supply, and shelter/protection (i.e. shelter in place)?
4. Determine the level of investment necessary to retrofit VHA's current building inventory (business occupancies) to the effects of wind, water, fire and ground-shaking.
5. Define, measure, and evaluate surge capacity within VHA.
 - a. How to address surge capabilities, such as when personnel are sent to distant facilities because local facilities are closed.
6. How to best build interest in the importance of emergency management at all delivery levels (e.g., the CMOs).
7. How can the six major capabilities of the Booz Allen Hamilton report be used to establish a framework for evaluation?
8. Review the current VHA Capabilities Assessment Program and recommend strategies for enhancing future evaluation strategies and methods.
9. Assess the current effectiveness and develop improvement strategies related to VHA's health information technology in detecting, tracking, and providing real-time decision support to clinicians.
10. What lessons may be learned from the use of Federal Medical Stations (FMS) as a lab for post-incident patient care?
 - a. The types of equipment used to support these facilities, such as having sufficient equipment to support obese patients.
 - b. The FMS can also be used to examine the effects of altered standards of care in post-incident situations on healthcare professionals themselves.

11. Compare currently available methods for assessing risk, probability and vulnerability for VHA treatment facilities and develop recommendations for the most effective approach.
12. How to evaluate the effectiveness of current competencies required of VA employees?
How effective are they in actual emergency responsiveness?
13. Develop evaluation strategies to support exercises and drills.
14. What equipment does a VA treatment facility need to effectively protect its employees and patients from the effects of an influenza pandemic?

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Special Interest Groups

HSR&D Special Interest Groups are comprised of researchers who share an interest in a particular topic. They help to encourage collaboration and networking among researchers and to inform new and ongoing areas of research. Current interest groups are listed below. If you are interested in forming a new interest group or would like to have an existing interest group represented on this page, please contact Karen Bossi at karen.bossi@va.gov

- Caregiving Research
- Mixed Methods
- Pain Research Working Group (PRWG)
- Rural Veterans' Health Interest Group
- VA Emergency Management Research Interest Group
- VA Health Equity Research Interest Group
- VA Statisticians' Association (VASA)
- VA Women's Health Research Interest Group
- VA/DoD Collaborative Research Initiative

VA Emergency Management Research Interest Group

Description:

The VA Emergency Management Research Interest Group fosters communication and collaboration among researchers, practitioners, and policymakers interested in emergency management research. The Group supports VA's Fourth Congressionally-mandated Mission: emergency preparedness and response in support of VA, the Department of Defense, and the Nation. VA serves as a backup to the Department of Defense health system in times of war or other emergencies and as support to communities following natural disasters, emergencies, and domestic terrorist incidents. The Group provides a forum to exchange knowledge, disseminate research findings, inform policy, and network with those sharing common interests in advancing research knowledge relevant to emergency management.

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Membership Information:

This interest group is open to new members. If you are interested in joining, please send an email to aram.dobalian@va.gov

Selected Emergency Management Journals

Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science

<http://www.liebertonline.com/bsp>

Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science, a quarterly peer-reviewed journal, provides an international forum for debate and exploration of the many key strategic, scientific, and operational issues posed by biological weapons and bioterrorism.

The Journal publishes multidisciplinary analyses and a vigorous exchange of perspectives that are essential to the formulation and implementation of successful strategies to diminish the threat of bioweapons. The content of *Biosecurity and Bioterrorism* is imperative for individuals with strategic, management, scientific, or operational responsibilities in fields that have a bearing on bioterrorism issues, including medicine, public health, law, national security, bioscientific research, agriculture and food safety and drug and vaccine development, and officials in all branches of local government. The Journal also is a key and authoritative resource for policy makers and the media.

Disaster Medicine and Public Health Preparedness

<http://www.dmphp.org>

Disaster Medicine and Public Health Preparedness is the first comprehensive and authoritative journal emphasizing public health preparedness and disaster response for all health care and public health professionals globally. The journal seeks to translate science into practice and integrate medical and public health perspectives. With the events of September 11, the subsequent anthrax attacks, the tsunami in Indonesia, hurricane Katrina, SARS and the H1N1 Influenza Pandemic, all health care and public health professionals must be prepared to respond to emergency situations. In support of these pressing public health needs, *Disaster Medicine and Public Health Preparedness* is committed to the medical and public health communities who are the stewards of the health and security of citizens worldwide.

Journal of Homeland Security and Emergency Management

<http://www.bepress.com/jhsem/>

Ranked #17 out of 28 public administration journals in the ISI Social Science Citation Index, *Journal of Homeland Security and Emergency Management* (JHSEM) is the primary source of new, peer-reviewed research and information in the fields of homeland security and emergency management. JHSEM features original, innovative, and timely articles and other information on research and practice from a broad array of professions including: emergency management, engineering, political science, public policy, decision science, and health and medicine. The electronic nature of the journal allows timeliness and responsiveness unparalleled among academic publications. JHSEM publishes peer-reviewed articles, news and communiqués from researchers and practitioners, and book/media reviews. The lead editors are John R. Harrald, Research Professor at the Virginia Tech Center for Technology, Security, and Policy; Claire B.

Rubin, President of Claire B. Rubin & Associates, in Arlington, VA; and Jane Kushma, Associate Professor, Jacksonville State University. Authors have included prominent researchers from the Centers for Disease Control and Prevention, Harvard University, Carnegie Mellon University, the Environmental Protection Agency, George Mason University, George Washington University, RAND, and Vanderbilt University.

In addition, you may wish to consider *Implementation Science* for presenting some of your work. Note that this journal does not focus on emergency management research.

Implementation Science

<http://www.implementationscience.com>

Implementation Science is an open access, peer-reviewed online journal that aims to publish research relevant to the scientific study of methods to promote the uptake of research findings into routine healthcare in both clinical and policy contexts.

Biomedical research constantly produces new findings - but often these are not routinely translated into health care practice. Implementation research is the scientific study of methods to promote the systematic uptake of clinical research findings and other evidence-based practices into routine practice, and hence to improve the quality and effectiveness of health care. It includes the study of influences on healthcare professional and organizational behavior.

This lack of routine uptake is strategically important for the development of healthcare as it clearly places an invisible ceiling on the potential for biomedical research to enhance health outcomes. Further, it is scientifically important because it identifies the behavior of healthcare professionals and healthcare organizations as key sources of variance requiring improved empirical and theoretical understanding before effective intervention can be reliably achieved.

Implementation science is an inherently interdisciplinary research area and the journal is not constrained by any particular research method. *Implementation Science* wishes to publish articles of high scientific rigor using the most appropriate methods to produce generalizable answers to study questions. As well as hosting papers describing the effectiveness of interventions *Implementation Science* provides a unique home for articles describing intervention development, evaluations of the process by which effects are achieved and the role of theory in the area of implementation research. The journal is also interested in publishing Debate/Discussion articles that present novel methods (particularly those that have a theoretical basis) of addressing current problems.

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