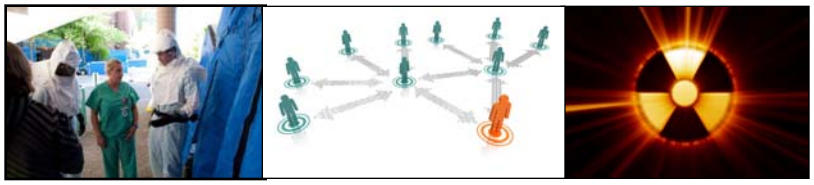
Management of Radiological Disaster through Effective Crisis and Risk Communications and Community Engagement



Joseph Albanese, PhD
Senior Scientific Advisor
WHO/PAHO Yale New Haven Health System Collaborating Center for Emergency Preparedness and Response
Assistant Clinical Professor of Therapeutic Radiology and Pharmacology
Yale University School of Medicine
Radiation Biodosimetrist for the State of Connecticut Biodosimetry Laboratory
Yale New Health System Center for Emergency Preparedness and Response

The Wakasa Wan Energy Research Center
February 20, 2013

Yale New Haven Health System

- Non-profit organization
- Largest, most integrated healthcare system in Connecticut including:
  - Yale-New Haven Hospital, Bridgeport Hospital and Greenwich Hospital
  - A Level 1 Burn Center and a Level 1 Trauma Center
  - A physician practice organization
  - Ancillary primary, urgent and emergent care facilities
  - Other clinical affiliations such as the YNHHS Heart Institute, Pediatric Network, Telestroke Network and Cancer Network with other area hospitals
- 14,980 employees and 4,987 physicians
- 89,998 patient discharges and 1,255,283 outpatients

Objectives of the Lecture

- Illustrate the importance of crisis and risk communications through the Three Mile Island (TMI) nuclear reactor incident experience
- Compare public reaction to two different approaches for crisis and risk communications at the time of the TMI incident
- List the lessons learned about crisis and risk communications as a result of TMI incident
- Define Community Resilience in the context of emergency preparedness (planning, response and recovery)
- Highlight the steps of a commonly used strategy for building resilient communities
- Provide examples of potential partners, their roles and responsibilities in the context of community resilience to radiological and nuclear emergencies
- Provide specific attributes and qualities for building synergistic partnerships towards the development of resilient communities

Center for Emergency Preparedness and Disaster Response
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Nuclear Power Plant Incident at Three Mile Island Changed Perceptions of the Nuclear Industry

- Most serious nuclear accident in United States' history, but experts agree that Three Mile Island (TMI) was not a serious accident
- No deaths or injuries to plant workers or member of nearby communities
- Widely misremembered as a public health catastrophe
  - Represents a powerful symbol of nuclear risks
  - Generated devastating repercussions for the nuclear power industry
- Caused shutdown of nuclear power plant construction in the U.S.

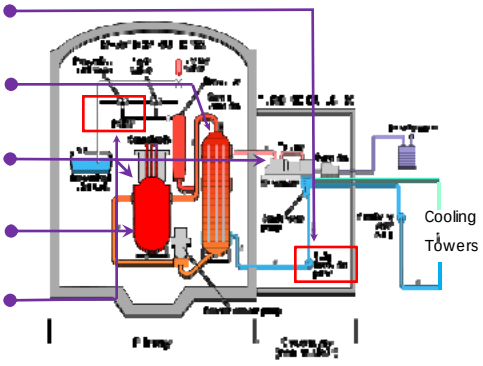
Center for Emergency Preparedness and Disaster Response
YALE NEW HAVEN HEALTH

Where is Three Mile Island?

- Harrisburg, Pennsylvania, U.S.
- Owned and managed by Metropolitan Edison (MetEd)

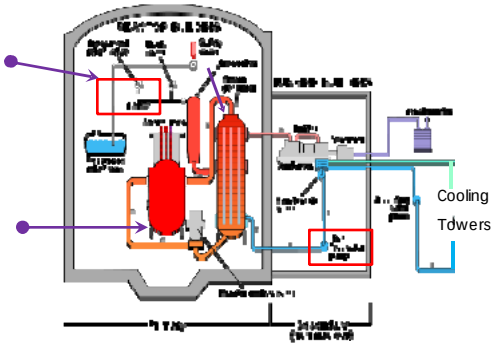
Schedule of Events Leading to Emergency at TMI Reactor Unit 2

- At 4:00 am, on 28 March 1979 at TMI # 2:
  - Main feedwater pumps stop
  - Steam generator cannot remove heat from the reactor
  - The turbine stops, then reactor shut down
  - Pressure in reactor vessel continues to increase
  - Pilot-operated relief valve (PORV) opens



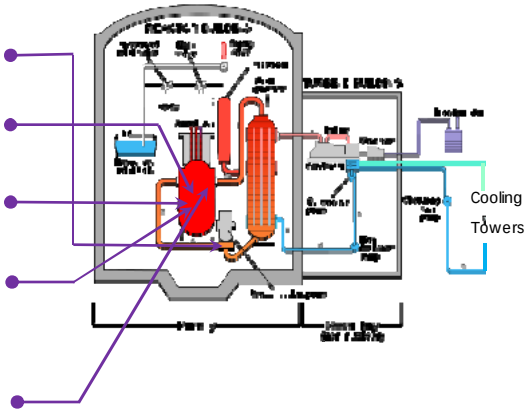
Schedule of Events Leading to Emergency at TMI Reactor Unit 2

- PORV does not close when pressure decreases
- Instruments showed valve still open
- Cooling water pours out and core begins to overheat
- Instruments provide confusing information



Schedule of Events Leading to Emergency at TMI Reactor Unit 2 (continued)

- Technicians shut off cooling water to the reactor
- Nuclear fuel begins to overheat
- Zirconium cladding ruptures on control rods
- Nuclear fuel pellets begin to melt
- Zirc-water reaction begins to occur, causing hydrogen bubble to form at top of reactor vessel



Radiation Exposure to the Residents

- Final estimations according to International Atomic Energy Agency and U.S. Nuclear Regulatory Commission (NRC)
  - 0.09 mSv on average (medical X-Ray)
  - No dose exceeded 1 mSv
  - One (1) cancer case in a population of 2.2 million people in 50-mile radius
  - Less than 10% of average annual background radiation (~3.6 mSV)

Public Reaction

- State of panic
  - Public reaction to the event was probably influenced by the release of the movie, The China Syndrome, 12 days before the accident, depicting an accident at a nuclear reactor
- Much misinformation and misunderstanding of the potential health consequences
- Factories closed their doors until the area was declared safe
- Hospitals and nursing homes in Harrisburg began the evacuation of patients; City began the evacuation of residents
  - The lack of plans for evacuating the population in a radiological emergency caused further confusion and added to the panic
- A quarter-million potassium iodide tablets sought by the residents of Harrisburg, and neighboring states
- Public confidence in the nuclear industry was drastically decreased

Impact on Nuclear Industry

- A profound change in American public attitude toward nuclear power
- Since 1979, no nuclear plants were built in the U.S.

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Three Mile Island still haunts U.S. nuclear industry

By PETER BEHR, Greenwire
Published: March 27, 2009

Inside a nuclear power plant 10 miles southeast of Harrisburg, Pennsylvania's capital, the first of a series of pumps supplying vital cooling water to the reactor unaccountably "tripped," or shut down, at 36 seconds after 4 a.m. on March 28, 1979.

SIGN IN TO E-MAIL
PRINT
THE EAST COMING SOON WATCH TRAILER

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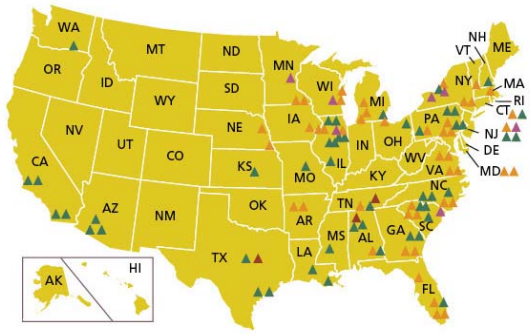
U.S. Nuclear Power Reactors Location and Age



Years of Commercial Operation	Number of Reactors
△ 0–9	0
▲ 10–19	3
▲ 20–29	48
▲ 30–39	46
▲ 40 plus	7

Note: Ages have been rounded up to the end of the year.

Source: U.S. Nuclear Regulatory Commission

Indian Point - Westchester

600,000 gallons of boiling water escaped as steam through an open valve, releasing trace amounts of tritium, in 2009 - New York Daily News

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Importance of Crisis and Risk Communication During a Disaster

What went wrong at TMI—really, really wrong?

- The answer lies in the way that authorities dispersed and, in some cases, withheld information
- Communication professionals were minor players at TMI
- Although the incident resulted in little effect on health, from a communication and public relations standpoint, TMI was a genuine disaster

Voices of Confusion

- Lack of dedicated telephone lines
  - Hindered flow of information into and out of the control room
  - No speaker phone
- Radioactive gases leaking into control room forced operators to wear respirators, further discouraging communications
- Reporters became frustrated by evasive comments by the NRC and MetEd officials
  - Reporters followed plant employees home, called them by telephone, seeking information

Voices of Confusion (continued)

- Lack of clear understanding of the reactor status
  - The NRC, at first, issue reassuring assessments
  - The next morning, the NRC, erroneously, stated that the hydrogen bubble forming in the reactor could explode
  - A controlled release of radioactive gas, measured at 1,200 mrem/hr by MetEd workers flying in a helicopter was misunderstood by the NRC officials as a sustained, ground-level, off-site reading
- Two NRC officials speaking to two different groups of reporters gave contradictory information regarding the hydrogen bubble
- The NRC could not agree on the need to evacuate
  - By the time officials at NRC headquarters decided to recommend evacuation, NRC officials on-site determined that the hydrogen bubble was shrinking

More Effective Communications Approach adopted by the State Department of Health

- In contrast to the NRC and MetEd officials who resorted to immediately issuing strong reassurances to the public, and then, as the situation deteriorated, re-issuing statements telling the public that things were in fact worse than originally thought, the Pennsylvania Department of Health adopted an appropriately cautious approach to initial communications with the public
  - Worried that radioactive iodine (I-131) might escape from the nuclear plant, be deposited on the grass, get eaten by dairy cattle, and end up in local milk, over the next 14 days, health officials issued several warnings urging people not to drink the milk
  - The Department of Health's announcements moved slowly from *"there will probably be I-131 in the milk"* to *"there may be I-131 in the milk"* to *"there doesn't seem to be I-131 in the milk, but let us do one more round of testing just to be sure."*
  - By the time the Department of Health declared the milk safe for consumption, the public believed it

More Effective Communications Approach adopted by the State Department of Health

- The take-away lesson from theses two approaches is: Err on the alarming side
  - While the caution hurt the dairy industry briefly, the rebound was quick
  - Health officials were seen as looking out for people's health more than for the dairy industry's short-term profits.
- This strategy is now widely adopted by Pubic Information Officers who are dispatched to communicate with reporters during disasters in the U.S.

Crisis and Emergency Risk Communication in a Radiological Disaster

- Communication of clear, concise, and credible information can reassure the public that the situation is being addressed competently
- Effective public information must reach broad audiences to publicize both immediate and anticipated health hazards, appropriate health and safety precautions, the need for evacuation, and alternative travel routes

Crisis and Emergency Risk Communication in a Radiological Disaster

Aims of risk communication are to:

- Help people more accurately understand their own risks
- Provide background information and cautious reassurance, as warranted, to affected individuals and populations

Crisis and Emergency Risk Communication in a Radiological Disaster

- It is critical that clear and fully informative advice be presented to the public
- Members of the general public, members of the emergency response community or elected officials will not simply agree to trust a nuclear or radiologic expert
- Explicit explanations must use simple terms and avoid complex technical arguments

Crisis and Emergency Risk Communication in a Radiological Disaster

- Guidelines for the general public should include concise instructions for protecting the individuals or families in contaminated and non-contaminated areas
- Shelter-in-place instruction should be simple and explain how this will reduce the dose to the affected population
- To minimize panic, instructions to shelter-in-place or wear respiratory protection should be issued as soon as possible and with calm confidence that the recommendation will assist the public in protecting themselves

Additional Key Points to Bear in Mind when Addressing the Media

- Do not lie; Do not even stretch the truth
  - Generally, companies and government officials do not intentionally lie, at times, however, the information presented, while technically accurate, can be misrepresentative– especially in a crisis when agencies are attempting to keep people calm
- Expect the media to over-assure the public
  - In normal times, journalists tend to make the news as dramatic as possible. Not in a crisis—in times of crisis, reporters tend to ally with their sources and are overly reassuring, in a misguided effort to keep people calm

Additional Key Points to Bear in Mind when Addressing the Media (continued)

- Simplify Explanations
  - In a crisis, people are intolerant of complicated explanations
  - Alarmed and angry individuals will assume that officials are attempting to deceive them. The result is more alarmed and more angry individuals
- Do not minimize the concerns of the media or the public
- All agencies must present a consist message to the media

Major Policy Changes After TMI

- Upgrading and strengthening of plant design and equipment requirements
- Identifying human performance as critical; improved operator training
- Improved instruction to avoid confusing signals
- Immediate NRC notification of all events 24/7/365
- Improved NRC licensing requirements
- Expansion of NRC inspector program
- Installation of additional safety and radiation equipment
- Identification and sharing of all safety related problems
- Expansion of NRC's international activities to share knowledge

Community Resilience

Community resilience entails the ongoing and developing capacity of the community to account for its vulnerabilities and develop capabilities that aid that community in:

- Preventing, withstanding, and mitigating the stress of a disaster
- Recovering in a way that restores the community to a state of self-sufficiency and at least the same level of health and social functioning after a disaster
- Using knowledge from a past response to strengthen the community's ability to withstand the next disaster

Characteristics of Community Resilience

- Formal institutions have a clear understanding about their roles and responsibilities in advance of a crisis
- Community members take advantage of organized opportunities to help solve problems relevant to each stage of a disaster
- Area residents routinely feel the tug of social ties, and they mobilize these same networks for emotional, material, and informational support in an extreme event
- Trusted institutions convey accurate information quickly about possible dangers and paths to safety, and residents together make sense of their experiences of tragedy and recovery

Evolution of Emergency Preparedness, Response and Recovery in the U.S.

The pressing necessity for emergency preparedness and planning to mitigate disasters was borne out of the terrorist attacks of September 11, 2001

- Initial policies placed responsibility on response agencies (first responders, medical and public health organizations) under the jurisdiction of local, state and national levels of government preparing and responding to emergencies – including radiological and nuclear terrorism
- Policies assumed that members of the public will appear as mass casualties or hysteria-driven mobs that self-evacuate from affected areas or resort to violence to gain access to scarce, life-saving drugs and vaccines

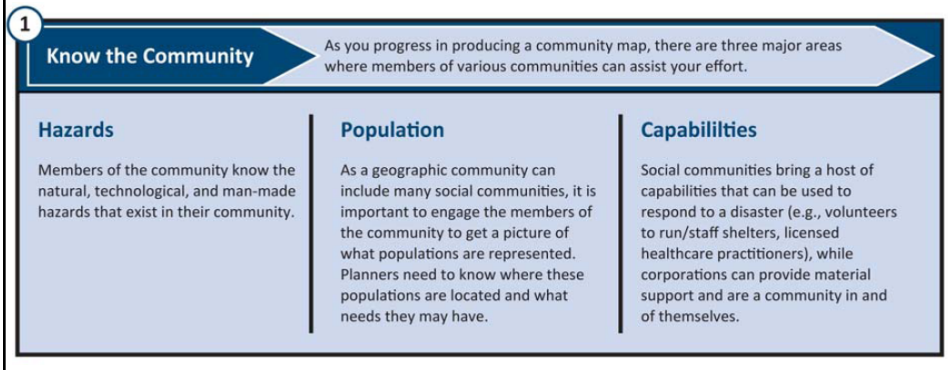
Engaging Individuals, Families and Community Partners in Disaster Preparedness, Response and Recovery

- National Emergency Preparedness Initiatives current reject the idea of citizens as helpless victims
- Instead, the directive recognizes the important roles of individuals, families, and communities partners and it advocates health curricula and training that will enhance private citizen opportunities for contributions to local, regional, and national preparedness and response
  - "Residents and all sectors of the community have a critical role and shared responsibility to take appropriate actions to protect themselves, their families and organizations, and their properties. Planning that engages and includes the whole community serves as the focal point for building a collaborative and resilient community" – Department of Homeland Security

Strategies for Achieving Community Resilience

- Engagement at the community level
  - Promote collaborative planning among area hospitals and with health authorities and emergency managers
- Ensure sustained local leadership
- Establish partnerships among organizations
- Encourage individual-level and community level preparedness and self-sufficiency
- Provide culturally relevant education and awareness about risks

Planning for Community Resiliency



FEMA CPG 101 – November 2010. Available at:
http://www.fema.gov/pdf/about/divisions/npd/CPG_101_V2.pdf

Planning for Community Resiliency (continued)

2 Identify the Communities to Engage

Working with existing groups is the most efficient way to link into a community as they have established relationships, networks and communication channels.

- Existing community-based programs are worth connecting with because trusted relationships have already been established between these offices and the community and further initiatives can capitalize on this goodwill.
- The community assessment process will identify existing programs and contacts.
- Being familiar with current events and programs in the community will help identify barriers and opportunities for engagement.

FEMA CPG 101 – November 2010. Available at: http://www.fema.gov/pdf/about/divisions/npd/CPG_101_V2.pdf

Planning for Community Resiliency (continued)

3 Partner with Community Leaders to Develop an Engagement Program

Engagement is about building trusted relationships.

- Community leaders need to trust that planners will support the work of the community and not dictate solutions for their issues. If communities don't trust that this will happen, they may choose to disengage.
- Working with leaders in the community to establish the type and level of engagement is critical.
- Leaders may be people who have an official position within the community or simply the "doers" in the community that have the ability to create the momentum needed for engagement activities. The best person to establish a partnership with will only be identified after getting to know the community well.

FEMA CPG 101 – November 2010. Available at: http://www.fema.gov/pdf/about/divisions/npd/CPG_101_V2.pdf

Community Partners in Radiological Preparedness, Response and Recovery

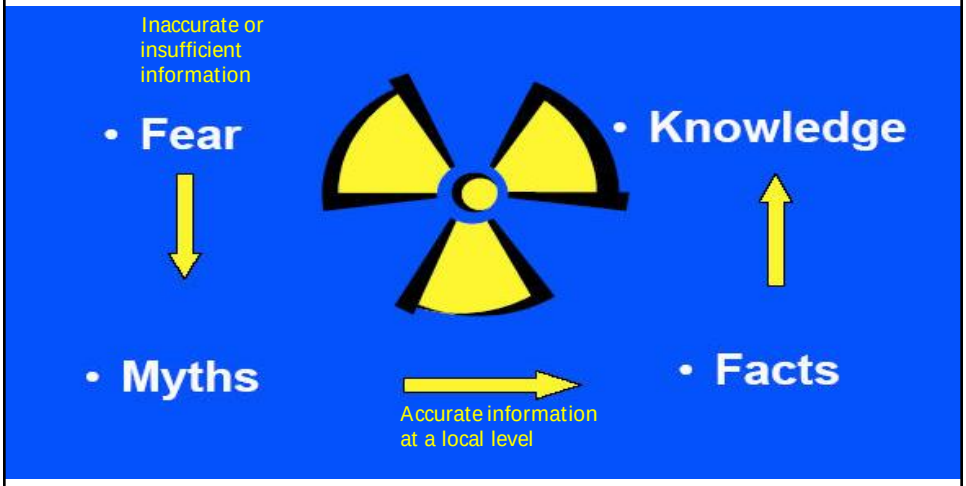
- **Residents of the community**
- **Trained radiation professional volunteers**
- First responders
- **Local healthcare organizations (hospitals)**
- **Local and state public health agencies**
- Federal agencies

Personal Preparedness in Responding to a Radiological Disaster

The U.S. Centers for Disease Control and Prevention (CDC) emphasizes to citizens the need for personal preparedness for responding to a radiological disaster

- The CDC encourages participation in community planning workshops held at local and state public health agencies
  - Preparations for evacuation vs. sheltering in place
  - Caring for children and the elderly during an emergency
  - Caring for pets
  - Location of screening centers
  - **Education on potential hazards of radiation**

Educating Citizens about Radiation Helps to Reduce Fear and Anxiety



Fear and anxiety of radiation exposure are as debilitating as the actual physical health effects and unchecked, render the ability to manage a radiological incident that much more difficult

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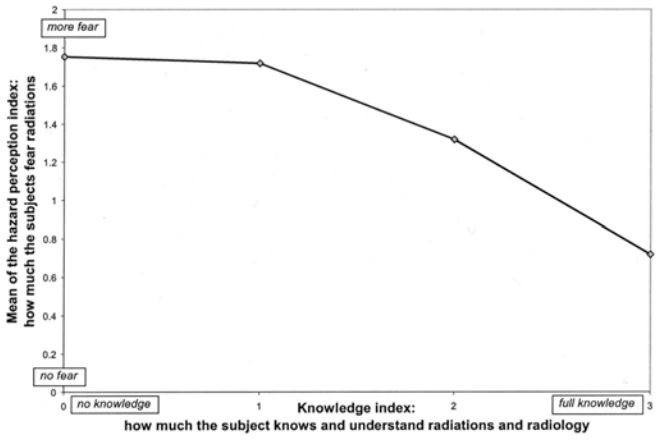
Knowledge about Radiation Reduces Fear



Mihai et al. (2005). Health Phys. 89:375-82

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Personal Preparedness in Responding to a Radiological Disaster

Families are asked to develop a personal preparedness plan for emergencies and disasters

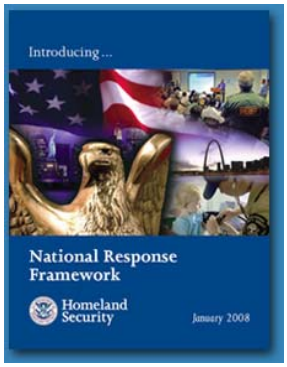
P	Prepare your plan and review it with family members and contacts
E	Emergency preparedness kits
A	Arrange for the care of others
C	Contact numbers and locations
E	Exercise and evaluate your plan every six months

Vulnerable Population in Radiological Disasters

- Children
- Elderly people
- Pregnant women
- People with chronic medical and mental health problems
- Disabled persons
- Workers (e.g., emergency responders, transient or migrant workers, commuters)
- Homeless people
- Institutionalized individuals who may or may not be able to evacuate or relocate
  - Hospital patients
  - Residents of nursing homes or other institutions
  - Prison inmates, guards, and workers required to maintain, operate, or secure critical and essential infrastructure

Radiation Professional Volunteers Are Key Players for Increasing Surge Capacity within a Community

- Federal Guidance Document identifies radiological screening and decontamination as "a responsibility of state, local, and tribal governments."
- However the volume of individuals who will seek radiological screening will certainly overwhelm resources at these levels of governments
- One approach to this resource limitation is to recruit and train radiation professional volunteers to respond in a community-integrated fashion to a large-scale radiological event



http://www.fema.gov/emergency/nrf/

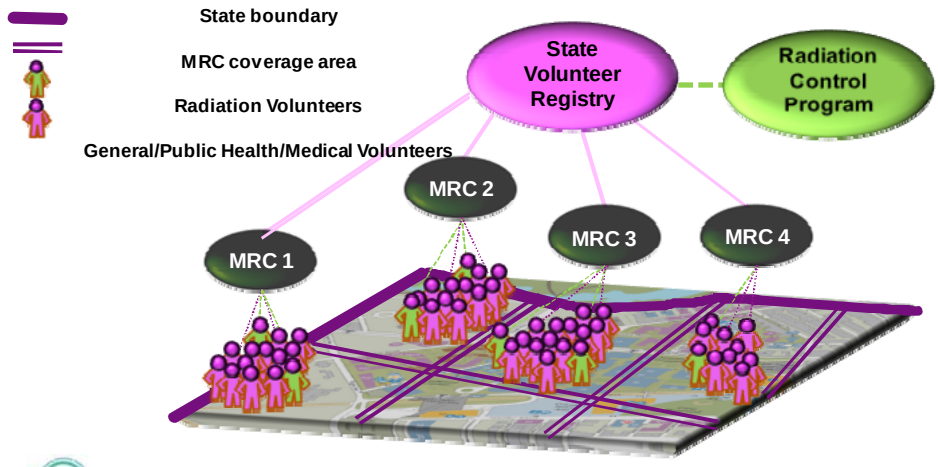
Radiation Professional Volunteers Assist in Augmenting Surge Capacity within a Community

- Radiation professional volunteers are trained to respond seamlessly as part of community-wide response to a radiological crisis
- Their roles include:
  - Monitoring environment and workplace
  - Monitoring people ("population monitoring")
  - Supporting operations at:
    - Hospitals
    - Public and special needs shelters
    - Emergency operations centers
    - Community reception centers
  - Risk communications to the public regarding contamination

Who are the Radiation Professional Volunteers in the Community?

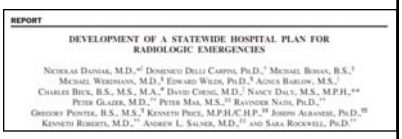
- Potential pool of tens of thousands of radiation professionals who are willing to perform population monitoring at community reception centers, general and medical shelters, healthcare facilities, etc.
  - These individuals consist of:
    - Health physicists,
    - Radiation safety technicians,
    - Nuclear medicine technicians,
    - Radiation oncology technicians,
    - Radiation safety officers,
    - Medical physicists,
    - Medical professionals
    - Others familiar in radiation safety and response practices
- Yale New Haven Health has recently received a grant to begin this training in our community

Medical Reserve Corps (MRC) – A Place for Radiation Professional Volunteers



Roles of Local Healthcare Organizations during a Radiological Emergency

- Emergency services physicians and nurses will be among the first clinicians to see and treat victims of radiation emergencies. Clinicians will be responsible for providing care and information to:
  - Patients admitted to the hospital
  - Patients presenting for follow-up care
  - Screening and decontamination
  - Others with questions about health effects related to the emergency
- To help clinicians develop plans and response capacity for radiation emergencies in Connecticut, we created the first Radiation Emergency Hospital Plan, in the U.S.



REPORT

DEVELOPMENT OF A STATEWIDE HOSPITAL PLAN FOR RADIOLOGIC EMERGENCIES

Int J Radiat Oncol Biol Phys. 2006

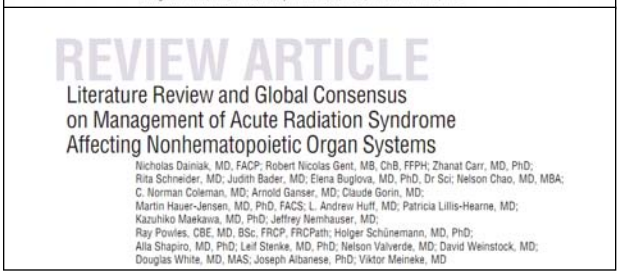
World Health Organization Consensus Statements for the Treatment of Patients with Radiation Injuries

REVIEW ARTICLE

First Global Consensus for Evidence-Based Management of the Hematopoietic Syndrome Resulting From Exposure to Ionizing Radiation

Nicholas Dainiak, MD, FACP; Robert Nicolas Gent, MB, ChB, FFPH; Zhanat Carr, MD, PhD; Rita Schneider, MD; Judith Bader, MD; Elena Buglova, MD, PhD, DrSci; Nelson Chao, MD, MBA; C. Norman Coleman, MD; Arnold Ganser, MD; Claude Gorin, MD; Martin Hauer-Jensen, MD, PhD, FACS; L. Andrew Huff, MD; Patricia Lillis-Hearne, MD; Kazuhiko Maekawa, MD, PhD; Jeffrey Nemhauser, MD; Ray Powles, CBE, MD, BSc, FRCP, FRCPath; Holger Schünemann, MD, PhD; Alla Shapiro, MD, PhD; Leif Stenke, MD, PhD; Nelson Valverde, MD; David Weinstock, MD; Douglas White, MD, MAS; Joseph Albanese, PhD; Viktor Meineke, MD

Disaster Med Public Health Prep. 2011; 5:202-12



REVIEW ARTICLE

Literature Review and Global Consensus on Management of Acute Radiation Syndrome Affecting Nonhematopoietic Organ Systems

Nicholas Dainiak, MD, FACP; Robert Nicolas Gent, MB, ChB, FFPH; Zhanat Carr, MD, PhD; Rita Schneider, MD; Judith Bader, MD; Elena Buglova, MD, PhD, Dr Sci; Nelson Chao, MD, MBA; C. Norman Coleman, MD; Arnold Ganser, MD; Claude Gorin, MD; Martin Hauer-Jensen, MD, PhD, FACS; L. Andrew Huff, MD; Patricia Lillis-Hearne, MD; Kazuhiko Maekawa, MD, PhD; Jeffrey Nemhauser, MD; Ray Powles, CBE, MD, BSc, FRCP, FRCPath; Holger Schünemann, MD, PhD; Alla Shapiro, MD, PhD; Leif Stenke, MD, PhD; Nelson Valverde, MD; David Weinstock, MD; Douglas White, MD, MAS; Joseph Albanese, PhD; Viktor Meineke, MD

Disaster Med Public Health Prep. 2011; 5:183-201

Radiological Emergency Response Biodosimetry Laboratory

- Biodosimetry Laboratory is located at Bridgeport Hospital
- One of only a few such labs in the nation (3) and the world (~25)
- Roles
  - Provide timely assessment of radiation dose to individuals
    - Critical for medical management of overexposed patients
  - Education and training to hospital staff
    - Preparation of samples for biodosimetric analysis
    - Increase awareness of the hazards of radiation
  - Recent activities
    - Conduct statewide drill to assess proficiency of acute care hospital labs for preparing biodosimetry samples
    - Participation in international drills sponsored by the WHO and IAEA

Healthcare Organizations Provide More than Clinical Services During a Disaster

- Under catastrophic situations, the community role of a hospital becomes more pronounced and extends far beyond the delivery of healthcare services
- Past disaster events have shown that the general public regard hospitals as centralized points of community support and assistance; crowds gather around hospitals seeking accurate information or for air conditioning, electricity, and basic necessities such as food and water
- People will naturally look to hospitals as a source of direction, support and a rallying point for assistance in times of emergency
- Relatives go to hospitals searching for missing loved ones

Role of Public Health Agencies during a Radiological Incident

- Protect the public's health and safety
- Monitor worker health and safety
- Ensure provision of health and medical services
- Ensure safe shelters for the population
- Ensure the safety of food and water supplies
- Coordinate sampling and laboratory analysis of biological and environmental samples
- Conduct field investigations
- Monitor people who may have been contaminated with radioactive materials or exposed to radiation (population monitoring)

World Health Organization

DPH

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Role of Public Health Agencies during a Radiological Incident (continued)

- Conduct or assist in decontamination
- Develop criteria for entry and operations within the disaster site
- Recommend injury and disease prevention and control measures
- Recommend management protocols for affected populations or individuals
- Communicate necessary information to medical providers
- Communicate situation assessments and required safety measures to the public
- Assist law enforcement agencies with any criminal investigation

World Health Organization

DPH

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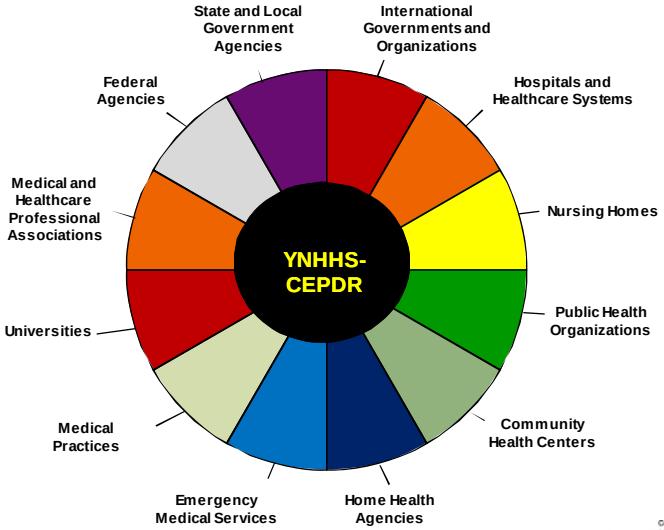
Role Public Health Agencies during a Radiological Incident (continued)

- In a radiologic or nuclear disaster, it is necessary to perform long-term monitoring of exposed individuals and populations
  - Risk of cancer and delayed health effects (e.g., cataracts) can occur at doses insufficient to cause symptoms of moderate or severe acute radiation sickness
- People who have undergone external or internal radiation exposure screening should have a permanent record of the screening results and the survey instrument recording

World Health Organization

Synergistic Partnerships between YNHHS-CEPDR and Local, State, National and International Organizations



YNHHS-CEPDR: Yale New Haven Health System Center for Emergency Preparedness and Disaster Response

Hindrances to Building and Maintaining Coalitions among Community Partners

- Individuals, groups or organizations who adopt a "silo" mentality and do not want to share information or knowledge with other individuals, groups and organizations within the community
- Use of varied terminology and procedures among different organizations; this tends to render communication confusing and hinders the harmonization of response activities
- The lack of mutual agreements, particularly with regards to roles and responsibility between or among partners
- Failure to disseminate information to appropriate partners in a timely fashion
- Failure to understand the information needs of partners

Catalysts for Building Coalitions among Community Partners

- Individuals, groups, and Organizations with Common Objectives
  - Identify
  - Network
  - Share
- A clear understanding of the resource and information requirements of all partners

Coordination

- Understanding of who needs to do what by when
- Enablers: Appropriate Tools
- Purpose: Avoids Gaps
- Desired Outcome: Efficiency in meeting objectives
- Optimal Application: Harmonizing tasks, roles, schedules in a "simple" environment

COORDINATE

Exchange Information

+

Harmonize Activities

Cooperation

- Mutual trust and benefit of working together
  - Enablers:
    - Frequent consolation
    - Knowledge sharing
    - Clear roles and definitions
    - Tools
- Purpose: Obtain mutual benefit by sharing partitioning work
- Desired Outcome: Same as coordination plus saving money, time, resources
- Optimal Application: Solving problems in a complicated environment

COOPERATE

Exchange Information

+

Harmonize Activities

+

Share Resources

Collaboration

- Sense of urgency and commitment
- Dynamic process
- Sense of belonging
- Trust
- Open communications
- Complimentary
- Diverse skill and knowledge
- Intellectual agility

COLLABORATE

Exchange Information

+

Harmonize Activities

+

Share Resources

+

Enhance Partner's Capacity

Collaboration (continued)

- Purpose: Achieve collective results that participants would be incapable of accomplishing working alone
- Desired Outcome: Same as Cooperation, plus innovative, extraordinary breakthrough results and collective "we did that" accomplishment
- Optimal Application: Enabling the emergence of understanding and realization of shared visions in a complex environment and system

Common Objectives

- Internally and externally
- Government agencies
  - Local
  - State
  - Federal
- Organizations
  - Public
  - Private
  - Non government organizations
  - Faith-based organization
- Academia
- Professional associations

Making Connections

- Who is responsible for emergency management for your jurisdiction?
  - Emergency management
  - Public safety (law enforcement / fire services)
  - Local Emergency Preparedness Committee
- Who is the local health and medical coordinator for your jurisdiction?
  - Health department
  - Emergency medical services
  - Local hospital

Management of Large-scale Emergencies Are Guided by "Meta-Leaders"

Defined as:

- Leadership that connects the purposes and the work of different organizations or organizational components to achieve a greater good
- Leaders able to influence and accomplish such collaboration of effort across organizations – multi-jurisdictions, multi-agencies, and public-private entities… motivating inter-action, enhancing communication, and engendering the sort of cross-organizational confidence necessary for effective "action"

Management of Large-scale Emergencies Are Guided by "Meta-Leaders"

- Meta-Leaders strive to influence what happens within their organization by seeking credibility from others outside their office or organization where common goals or a sense of purpose are shared – <u>they lead across the silos…</u>
  - Reach across organizations and sectors to build cross-cutting strategies to protect the safety of their families, businesses and communities.
  - Exchange information
  - Share resources
  - Coordinate systems and personnel
  - Use their influence and connections to guide a cooperative course of action
  - Qualities of a Meta-Leader:
    - A unique mindset and skill set, which often goes beyond the scope of an individual's previous experiences
    - Building strong alliances with a diverse array of leaders before an event occurs

"For the terrorism preparedness and emergency response meta-leader, emotional intelligence confers the capacity for personal discipline and direction when all around may be in chaos."

Marcus, Dorn, Henderson, (2006) *"Meta-Leadership and National Emergency Preparedness Strategies To Build Government Connectivity"*

Contact Information

Joseph Albanese, PhD
Senior Scientific Advisor
WHO/PAHO Yale New Haven Health System Collaborating Center for Emergency Preparedness and Response
Assistant Clinical Professor of Therapeutic Radiology and Pharmacology
Yale University School of Medicine
Radiation Biodosimetrist for the State of Connecticut Biodosimetry Laboratory
Yale New Health System Center for Emergency Preparedness and Response
(203) 688-3316 USA
Joseph.Albanese@ynhh.org

1 Church Street, 5th Floor, New Haven, CT 06510 USA
www.ynhhs.org/chs

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