

## Poster Abstracts

**Title:** Tracking Countermeasures and Adverse Reactions During a Radiation Emergency: A Use Case for CDC's Countermeasure and Response Administration (CRA) System

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**Description:** The Countermeasure and Response Administration (CRA) system was developed by the Centers for Disease Control and Prevention (CDC) to support all hazards countermeasure tracking for any countermeasure and any event. It is a web-based system that may be deployed on a stand-alone basis or accessed via CDC. CRA has supported preparedness activities at the federal, state, and local level for pandemic influenza, anthrax, and other events. CRA was implemented during the 2009 H1N1 response to track vaccine doses administered and inventory of antiviral medications and PPE. CRA was also prepared for use during the *Empire 09* radiological dispersal device exercise in Albany, NY. The system was setup to collect high priority screening information and countermeasures administered at the Community Reception Center (CRC). Participation in this drill provided CRA with valuable feedback on the settings and logistics of how radiation medical countermeasures would be administered during a radiological response. It also identified an area of improvement in how data is collected in CRA, which is the need to support a linkage between data collected at the CRC and countermeasures administered at a hospital or medical facility.

**Results:** The *Population Monitoring in Radiation Emergencies: A Guide for State and Local Public Health Planners* states that resources must be available at a CRC to address medical and countermeasure administration needs during a response<sup>1</sup>. Observations made during the *Empire 09* exercise identified the issue that some radiation medical countermeasures would only be administered in a hospital setting (DTPA, G-CSF). This resulted in identifying a need to transport individuals potentially or known to be internally contaminated with radiation who would require targeted medical treatment from the CRC to a hospital or medical facility. The CRA system is equipped to support the data collection needs in both scenarios: (1) countermeasure dispensing at a CRC, and (2) countermeasure administration at a hospital.

CRA can be used to enter data as forms are collected from individuals exiting the CRC (Scenario 1). Registration data can also be entered into CRA at the CRC on exposed individuals needing to receive treatment, with the countermeasure data entered into CRA at the hospital or medical facility (Scenario 2). In all cases, the CRA system also has a robust reporting capability, which provides standard reports as well as data extracts that can be used for detailed analysis. This ensures that along with collecting critical information, system users can also maintain situational awareness through meaningful report outputs.

**Reference:**

<sup>1</sup> <http://emergency.cdc.gov/radiation/pdf/population-monitoring-guide.pdf>



**Title:** Development of a Nuclear Detonation Aftermath Plan

**Author:** James Thomas

**Affiliation:** California Department of Public Health Radiologic Health Branch

**Description:** The California Department of Public Health (CDPH) has the lead and critical role in preparing for public health emergencies throughout California. One of the most catastrophic events CDPH must prepare for is the use of a nuclear weapon in a major metropolitan area. The CDPH Radiologic Health Branch (RHB) and the Emergency Preparedness Office (EPO) have teamed up to develop a Nuclear Detonation Aftermath Plan (NDAP) that will serve as an annex to the department's Emergency Operations Response Plan.

**Results:** Casualties in this type of incident could be very high, infrastructure severely damaged, and communication difficult at best. A coordinated effort by all levels of government is required to prepare for, respond to, and recover from a nuclear incident however federal assistance may not be fully available for the first hours to days after such an event making it incumbent on state and local government to be prepared as possible. The CDPH NDAP will address the public health considerations of a nuclear detonation by:

- Providing a plan to coordinate state and local public health resources and actions.
- Creating tools to assist local and state agency planning and response efforts.
- Incorporating health and medical guidelines to protect the public and emergency responders.
- Developing effective communication tools to inform the public of the risks and protective action to take.

**Title:** Sampling During Public Health Emergencies

**Authors:** Alan Antenucci, Nick Cirino, Cynthia Costello, Christina Egan, Regina Keenan, Paula Pennell, Robert Rafferty, Mark Virgil, and Lloyd Wilson

**Affiliation:** New York State Department of Health

**Description:** At the request of the CBRNE Task Force, staff at Wadsworth Center and the Center for Environmental Health collaborated with the NYS Department of Environmental Conservation (DEC) and the NYS Office of Fire Prevention and Control (OFPC) to develop procedures for collecting samples in Level A personal protective equipment. These procedures include sampling for biological, chemical and radiological contaminants in air, wipe, liquid and solid matrices. These procedures are designed for use in public health emergencies in which the type and degree of hazard is unknown. Staff from OFPC would use these procedures to collect samples under the direction of DOH and DEC staff who respond to these emergencies as members of the Environmental Assessment Group (EAG).

**Results:** OFPC and EAG staff trained on these procedures during four sessions in 2005, four sessions in 2006, and three sessions in 2007. At the culmination of each training session, there was a functional exercise where both EAG and OFPC staff worked together to demonstrate what they had learned. Throughout the training and exercises, the procedures evolved as a result of comments submitted by both OFPC and EAG staff. As personnel have become more familiar with sampling procedures, the time devoted to training on these procedures has been decreased to —just-in-time” training followed by a full-day exercise and technical decontamination of personnel in order to more closely simulate what would happen during an actual public health emergency. In 2009, OFPC and EAG staff demonstrated their skills during EMPIRE 2009, a national level, full-scale radiological exercise.

**Authors:** Jonathan Lifland and David Ferguson

**Affiliations:** Oak Ridge Institute for Science and Education (ORISE) for the Federal Emergency Management Agency (FEMA) Chemical, Biological, Radiological, Nuclear and Explosives (CBRNE) Branch

**Description:** This poster describes the recent efforts of the FEMA Chemical, Biological, Radiological, Nuclear and Explosives (CBRNE) Branch to improving the nation's response and recovery from an improvised nuclear device (IND) incident. Included is information on the five CBRNE-sponsored working groups that were established to outline the methodology used to mitigate or close previously identified gaps in the government's current capabilities. These working groups have been created to assess these capability gaps, examine current and future program priorities, and assist in the construction of an IND Implementation Plan. This Implementation Plan will outline solutions to the response and recovery mission of the Department of Homeland Security and FEMA in coordination and collaboration of Federal, State, Local and Tribal stakeholders.

The poster will present information on the Implementation Plan concept, along with the current and planned efforts of the CBRNE Communications Working Group he helps to support. He will also introduce and outline the other four Working Groups. David Ferguson will answer technical questions related to his work with the FEMA CBRNE Branch, including his contributions to the Research and Development Working Group and to the IND Implementation Plan.

**Impact on Community Preparedness:** The efforts of the CBRNE Branch in the response and recovery activities following an IND incident will provide significant contribution to the Federal, State, Local and Tribal communities. The CBRNE Branch is providing input into the April 2010 *DHS Strategy for Improving the National Response and Recovery from an IND Attack* and laying out steps to implement actions that can mitigate or close previously identified gaps in the government's current capabilities. Examples of these actions include: incident management and incident command, infrastructure cleanup and site remediation, medical stabilization and evacuee care, emergency public communications and information exchange, and scientific support in modeling and decision making.

The FEMA CBRNE Branch distributes nearly all of its products through state and local stakeholders. Distributing and communicating information about these response and recovery initiatives and providing insight into current and ongoing CBRNE efforts to this audience—through the CDC Radiation Conference—will have a positive impact on state and community preparedness.



**Title:** On the Safe Side: A Security Planning Toolkit for Public Health Emergencies

**Authors:** John Simkovich, Ann Sports, Raymond Barteet and Dana Millet

**Affiliation:** South Carolina Department of Health and Environmental Control Region 7, NACCHO Advanced Practice Center

**Description:** Public health and hospital planners have traditionally struggled with engaging law enforcement in the planning process for public health emergencies. The lack of engagement stems primarily from a communication deficiency between public health, healthcare, and law enforcement. As such, there is a lack of understanding concerning the role of law enforcement in response to a public health emergency. In some instances, public health and healthcare organizations have made an inaccurate assumption that when contacted, law enforcement will respond quickly, with adequate resources to meet the identified need while at the same time addressing other high priority events that are occurring in the community. Additionally, we expect law enforcement to respond without knowing a facility's plan or whether this plan would allow them to provide adequate security for the facility, staff and patients.

This poor engagement has hampered healthcare facilities in the development of operational site security plans for use in medical surge situations. It has also hindered public health in the development of functional and operational site security and traffic management plans for Points of Dispensing (POD). The problem is compounded by a deficiency of reference materials, plan templates, and resources specific to hospital security planning for mass surge events. It is also applicable to POD security and traffic management to assist public health and law enforcement in this process.

This poster session will demonstrate how establishing and utilizing a public health, healthcare, and law enforcement partnership can improve security planning for public health emergencies. It will illustrate the various risks and vulnerabilities that could impact hospitals and PODS during a response to Radiation Emergencies and/or other public health emergencies. It will also present tools that can be used to mitigate and resolve many of these risks. Additionally, there will be discussion on how to establish a partnership and what resources and plans are available to assist agencies in developing operational security plans to protect their facilities.



**Authors:** Jane Orient and Steve Jones

**Affiliation:**PhysiciansForCivilDefense.org

**Description:** PCD is distributing postage stamp-size radiation monitors created by the Department of Defense for use by emergency responders. The monitors are for triage but have many more benefits such as preventing panic. PCD is arranging to make these radiation monitors free to all emergency responders nationwide.

So far approximately 8,000 police, firefighters and emergency response personnel in MA, VT, UT and SC have received these free radiation monitors and 60-Second training cards. Response from counties, cities and towns receiving the monitors has been enthusiastic. Local press has always been supportive in giving educational coverage of this project by informing the first responders of their availability, purpose and use. —SIRA” monitors can be found at [www.CTTSO.gov](http://www.CTTSO.gov)

**Title:** The North Texas Radiation Response Group: An Integrated Participatory Solution for Regional Response

**Author:** John C. White

**Affiliation:** The University of Texas Southwestern Medical Center at Dallas

**Description:** Bringing together disparate management and jurisdictional entities can be a significant challenge. Existing regulatory and legal requirements drive political and response entities to be self-sufficient, so the concern about drawdown of owned equipment can hamper pooling of resources when an event overwhelms the response of an individual entity. A solution has been initiated in the North Texas/DFW MSA and surrounding areas to enlist Management, Planning, and Response groups to focus on a common threat: A Radiological or Nuclear Incident. This solution, the North Texas Radiation Response Group (NTRRG), is a voluntary cooperative effort to consider limited radiological resources as a Collective Resource for the region. This Collective Resource extends to personnel, dedicated equipment, and response expertise for the benefit of the population of the region. The driver for this group is the likelihood that in a major incident, communications will hinder deployment of State and Federal resources to the affected area in a timely manner, at a time when rapid response will be most effective at ameliorating the effects of the incident.

The NTRRG has the stated goal of gathering Radiation Professionals, Radiation-Trained Fire/Emergency Responders, Law Enforcement, Planners, and Managers together in a non-mandatory environment to discuss the specifics of the response environment and show the benefits of cooperation and combining resources. The voluntary nature of the NTRRG helps to reduce conflict with existing required command groups. Areas of focus are: The dramatically significant nature of the threat; Scarcity of large-scale detection equipment such as Portable Portal Monitors, and the relatively small numbers of trained radiation professionals. Also, the geographic location of response equipment can have a significant effect on the capability of the region to deploy response equipment, particularly if equipment is located under the plume from an incident.

To date (March 2011), three meetings of the NTRRG have been held. The first meeting concentrated on describing the nature of the threat and the roadblocks to successful response. The second meeting concentrated on the use of specific equipment for dealing with large numbers of contaminated victims and detection equipment that can be used to determine the levels of contamination. The third meeting discussed the collected personnel and equipment resources in the region and the location of the equipment, for response planning purposes. Certain problems have hampered a successful completion of the goals: The voluntary nature of the organization has enabled unwilling organizations and individuals to keep resources to themselves and not report the resources; The complication of Super Bowl XLV has restricted the available time for persons and organizations to participate in the NTRRG; Personalities and Municipal history have impacted the level of participation from some organizations.

**Title:** Radiological Preparedness-Awareness and Attitudes: A Cross –sectional Survey of Emergency Medicine Residents and Physicians at 3 Academic Institutions

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**Affiliations:** Penn State Hershey Medical Center<sup>1</sup>, University of Alabama at Birmingham<sup>2</sup>, University of Arizona College of Medicine<sup>3</sup>, Emory University<sup>4</sup>

**Description:** Previous research has shown that emergency responders, which include clinicians, emergency medical services providers, public health workers, and medical students, felt unprepared to respond to radiological or nuclear disasters. **Methods:** An electronic survey was sent to a total of 309 emergency medicine residents and physicians at 3 U.S. academic institutions. The study was approved by the institutional review board.

**Results:** The survey response rate was 37%. 52% of respondents were residents and 48% were attending physicians. Only 37% and 28% of respondents had attended any training in radiological preparedness in the preceding 5 years or any training in radiation detection, respectively. In the event of a radiological or nuclear emergency, 48% of respondents felt uncomfortable or very uncomfortable caring for victims in the emergency department and performing decontamination. 56% of respondents felt the same about performing a radiation detection survey on their patients. Additionally, 52% and 68% felt uncomfortable or very uncomfortable diagnosing acute radiation syndrome and internal contamination respectively. When asked about their familiarity with some of the available therapies, 89%, 81% and 65% of respondents were unfamiliar with the use of DTPA, Prussian blue and Filgrastim respectively. Moreover, 65% of respondents stated that they would not care for a critically injured patient until radiological decontamination was performed. Forty-one percent believed that a patient can be externally contaminated with radiological material without being exposed to radiation. Similarly, 79% of respondents believed that a victim can be exposed to radiation without being contaminated with radiological material.

Finally, respondents were asked to rate their preferential form of education on a scale of 1 to 5, with five different educational methods/formats as options. Classroom teaching at the workplace and prepackaged educational material were most frequently rated as the preferred methods.

**Discussion:** Our results suggest a need for additional radiological-nuclear preparedness training for emergency medicine residents and physicians. Such training should include radiation decontamination, detection, patient management, and existing therapies. Emphasis should be placed on explaining the secondary hazards from contaminated victims and the differences between radiation exposure and contamination. Our results show that classroom teaching at the workplace and prepackaged educational material were frequently rated as preferred methods. Further studies should assess the popularity and efficacy of different educational methods.



**Title:** Development of Australian Clinical Guidelines for a Radiological Event

**Authors:** Jane Canestra, MD, MBBS, FACEM

**Affiliations:** Department of Health State Government of Victoria, Australia

**Description:** The Australian Health Protection Committee initiated the development of Australian Clinical Guidelines for a Radiological Event to complement existing national guidelines on chemical agents, anthrax, and smallpox. Other prompts included the need to revise the *ARPANSA Guidance Manual, Medical Management of Individuals Involved in Radiation Accidents, 2000*, and the requirement for specific therapeutic information regarding the indications and use of radiological decorporation agents held as part of the National Medical Stockpile.

The objective was to produce a plain language guidance document for Australian clinicians. It was to be based on evaluation of existing Australian documents, a literature review and consultation of appropriate specialists. Content areas included human health effects of radiation, scenario-based risk assessment and risk management, pre-hospital and hospital systems of care, management of specific injury types, radionuclide pathophysiology and decorporation protocols, biodosimetry options, individual psychological support and public health information, and Australian responsibilities under the Radiation Emergency Medical Preparedness and Assistance Network, of the World Health Organization.

The range of resources utilised in preparing the guidelines, and the process of development and review will be described.