

FACT SHEET: CAL PREPARE PROJECT 3 PROJECT #3: CLOSING CHEMICAL, RADIOLOGICAL, AND NUCLEAR GAPS OF PUBLIC HEALTH ALL-HAZARDS PREPAREDNESS

GOALS

- To identify past chemical, radiological, and nuclear (CRN) events that tested preparedness and response capabilities of public health jurisdictions;
- To analyze the past CRN events for the purpose of identifying attributes that affected responses to these events, especially those that indicated shortcomings or gaps in preparedness planning;
- To elicit public health experts' perspectives on the importance of each gap with respect to their own agencies' preparedness and response planning and strategies;
- To develop practical recommendations with public health partners that if implemented would close CRN preparedness and response gaps at the local, state, national levels.

LEAD INVESTIGATOR

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METHODS

Aim 1: Identify past CRN events indicative of gaps in public health preparedness

To complete Aim 1, CNS analysts utilized two proprietary databases and open source publications to identify chemical, radiological, and nuclear events (CRN), to elucidate trends in CRN uses, to evaluate preparedness plans and response strategies used by responders, and to develop a schema for evaluating these strategies. Analysis results provide a historical framework for designing the hypotheses and incident scenarios to be used to achieve Aim 2.

Aim 2: Identify and assess gaps in all-hazards preparedness and response capabilities at the local public health level.

CNS analysts are seeking expert perspectives from the MCHD and California Department of Public Health (CDPH) on the relative *importance* of gaps identified during Aim 1, using a survey based on the Analytical Hierarchy Process (AHP). Expert perspectives will be integral to identifying and ranking gaps in preparedness and response plans that could impede responses to future CRN events. CNS investigators will also design two table-top exercises (TTX) for the purpose of examining the abilities of the MCHD and other county agencies to meet the challenges of CRN events.

Aim 3: Assess the level and types of cooperation between MCHD and the public concerning CRN preparedness, especially with respect to the County's vulnerable populations.

CNS analysts will examine and analyze the MCHD's efforts to address the special requirements of vulnerable populations and representative community-based organizations (CBOs) in its all-hazards preparedness and response plans, paying special attention to those related to CRN events. An online AHP tool will be used to survey officials from a representative number of California's 61 health jurisdictions. This will be done in order to elucidate any trends in the gaps identified in historic cases, as well as in Monterey County within other jurisdictions.

Aim 4: Conduct a comparative analysis of the all-hazards preparedness levels of the health departments in California and, eventually, Hawaii using findings from Aims 1 - 3.

Our research will be expanded to include Hawaii and, as possible, California health jurisdictions not covered during Aim 3. Based on the results of our analysis of surveys of experts, we will develop and publish specific recommendations for public health departments to enhance their preparedness plans for responding to CRN challenges of the future, giving special attention to some vulnerable populations in California and Hawaii.

IMPACT

CNS research to date has found that public health systems, especially at local levels, face difficult challenges while attempting to prepare for emergency events involving CRN materials. For instance, many public health laboratories cannot test samples for chemical weapons agents. Additionally, no state public health laboratory can rapidly identify radiological materials in clinical samples. Thus, substantial time may be lost between detection and full characterization of a CRN agent that causes an event, which would prove costly in terms of human lives lost and resources misused. Project 3 is conducting research focused on challenges presented by CRN emergencies, which require unique responses. The primary outputs of Project 3 research are practical solutions, training materials and tools that public health jurisdictions can implement to strengthen their all-hazards preparedness.

RESEARCH TRANSLATION

Project 3's research translation has been developed with assistance from the Research Steering Committee and includes the following translation methods:

- We will present preliminary research findings at the NACCHO Public Health Preparedness Summit (Feb. 2011). These findings are informing and influencing the development of two table-top exercises (TTXs) that aim to test the ability of public health practitioners and emergency responders in Monterey County to meet challenges of CRN events. The TTXs will be constructed in such a way that they can be readily adaptable for future use in other U.S. jurisdictions.
- We will present our research findings on a continuing basis to partners at the MCHD, CDPH, and other agencies and non-governmental organizations.
- We will develop an expert-based AHP survey tool that will be made available to public health professionals who wish to test their home agencies for gaps in CRN preparedness.
- We will disseminate project findings through publications in academic and practice-based journals and web-based documents. They will also present live and broadcasted briefings when requested.

PRELIMINARY RESEARCH FINDINGS

Aim 1: Our historic analysis provided us a substantial knowledge base on dozens of past CRN events – including agent information, event etiology, and preparedness and response features. We analyzed 14 historic CRN events (7 radiological and 7 chemical) in-depth, and identified 50 attributes that commonly influenced the preparedness for, and/or response to, each event. These attributes, or all-hazards preparedness “gaps”, are currently being tested in Aim 2 activities. We seek to determine the extent to which each gap might influence local and state-level all-hazards response activities if challenged by real life CRN events.

Aim 2: We currently are seeking perspectives on the relative importance of each of the identified 50 gaps from Aim1. We are using a 2-stage modified AHP survey for this purpose. In Stage 1, experts at the MCHD and CDPH are “weighting” the importance of overarching preparedness gap “themes” (listed below). In Stage 2, they are then being asked to weight specific gaps that fall under these themes (the 50 individual attributes we identified during Aim 1). Expert weighting of these attributes will be integral in guiding our recommendations for addressing the most important CRN event preparedness and response gaps.

Preparedness gap “themes” to be weighted in Stage 1 of the AHP survey:

- Inter-agency Communication
- Chain of Command and Responsibilities
- Physical and Human Resources
- Environmental Factors
- Agent Control and Handling
- Event Surveillance and Monitoring

STEERING COMMITTEE

Project 3 utilizes the services of the Cal PREPARE Research Steering Committee as needed.