State of New Hampshire
Department of Health and Human Services
and
Department of Safety

December 2009 Anthrax Incident

AFTER ACTION REPORT / IMPROVEMENT PLAN

Report Date: February 2011

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2. The information gathered in this AAR/IP is classified as a public document and can be distributed as such.

3. Points of Contact:

Jennifer Harper
New Hampshire Department of Safety
Division of Homeland Security and Emergency Management
603-223-3615 (office)
603-419-9179 (cell)
jennifer.harper@dos.nh.gov

Lead AAR Coordinator:

Krista J. Moore
URS Corporation
865-220-8112 (office)
703-201-7057 (cell)
kjmoore@egginc.com

Project Manager:

Thomas Lazott
URS Corporation
603-893-0616 (office)
603-325-2433 (cell)
thomas_lazott@urscorp.com

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Executive Summary

This After Action Report (AAR) contains information about New Hampshire's efforts to improve the public health preparedness and response capability for a naturally occurring Anthrax incident. It also addresses the command, control, and coordination of the statewide response activities. This AAR presents and analyzes issues and results, identifies strengths to be maintained and built upon, and distinguishes potential areas for further consideration or improvement. This AAR captures the statewide response that occurred during Phase I (December 24 - 26, 2009); Phase II (December 27, 2009 - January 7, 2010); and Phase III (January 7, 2010 - April 16, 2010).

The suggested actions in this AAR should be viewed as recommendations only. In some cases, New Hampshire agencies that were involved in the response may determine that the benefits of implementation are insufficient to outweigh the costs. In other cases, these agencies may identify alternative solutions that may be more effective or efficient. Management should review the applicable recommendations and determine the most appropriate course of action given the available resources (e.g., time, staff, funding) for implementation.

Participating Entities

Representatives from the following agencies and organizations were involved in the response:

Federal

- Centers for Disease Control and Prevention (CDC)
- Federal Bureau of Investigation (FBI)
- National Institute of Occupational Safety and Health (NIOSH)
- Occupational Safety and Health Administration (OSHA)
- United States Environmental Protection Agency (EPA)
- EPA Superfund Technical Assistance Response Team (START)
- United States Public Health Service

State

New Hampshire

- State of New Hampshire Governor's Office
- New Hampshire Department of Environmental Services (DES)
- New Hampshire Department of Health and Human Services (DHHS)
- New Hampshire Department of Health and Human Services – Division of Public Health Services (DPHS)
- New Hampshire Department of Health and Human Services – Division of Public Health Services Laboratory (PH Lab)
- New Hampshire Department of Justice (DOJ)
- New Hampshire Department of Safety (DOS)
- New Hampshire Department of Safety, Division of Fire Safety, Office of the State Fire Marshal (FMO)

- New Hampshire Department of Safety, Division of Homeland Security and Emergency Management (HSEM)
- New Hampshire Laboratory Response Network (LRN)
- New Hampshire National Guard – 12th Civil Support Team (CST)
- 211 New Hampshire

Connecticut

- Connecticut Public Health Laboratory

Massachusetts

- Massachusetts Department of Public Health
- Massachusetts General Hospital Laboratory

New York

- New York City Laboratory Response Network
- New York City Public Health Laboratory

Tennessee

- Tennessee Public Health Laboratory

Virginia

- Virginia Division of Consolidated Laboratory Services

Overarching

- Laboratory Sciences
- New England Environmental and Public Health Laboratories

Local

- City of Manchester - Health Department
- City of Nashua - Division of Public Health
- City of Rochester
- City of Rochester - School District
- Strafford County Public Health Region
- Town of Barrington
- Town of Durham
- Town of Durham Fire Department
- Town of Durham Police Department
- Town of Durham Public Works
- Town of Hooksett Fire Department
- Town of Hooksett Police Department
- Town of Hooksett Waste Water Treatment Plant

- Seacoast Technical Assistance Response Team (START)
- United Campus Ministry
- University of New Hampshire (UNH)
- University of New Hampshire Health Services
- University of New Hampshire Police Department

Hospitals

- Dartmouth-Hitchcock Medical Center
- Frisbie Memorial Hospital
- Massachusetts General Hospital

In general, the event focused on the response to an anthrax incident and, more specifically, on the following target capabilities:

- Planning
- Intelligence and Information Sharing and Dissemination
- Epidemiological Surveillance and Investigation
- Laboratory Testing
- Emergency Operations Center Management
- Onsite Incident Management
- Weapons of Mass Destruction (WMD) and Hazardous Materials (HazMat) Response and Decontamination
- Emergency Public Information and Warning
- Environmental Health
- Mass Prophylaxis

Major Strengths

The major strengths identified during this response are as follows:

- State officials made timely notifications to officials in the Town of Durham (Town Manager, Fire, Police and Health) and at the University of New Hampshire Police Department.
- Morning conference calls that included the DPHS Outbreak Team and leadership from State and Federal agencies were well organized and beneficial.
- The New Hampshire Infectious Disease Team made public health recommendations for prophylaxis and offered assistance to contacts and primary care providers.
- DPHS was able to confirm the Anthrax organism in the patient was consistent with the samples found in the United Campus Ministry using lab data and disease tracking data.
- CST and START conducted sampling procedures according to plans validated with DES and EPA.
- After the initial elements of the response were determined, the DHHS legal department and Attorney General's Office were contacted to determine statutory authority for the incident.
- DES, DHHS, and local Public Information Officers coordinated internal and external information dissemination.

Primary Areas for Improvement

Throughout the response, there were several opportunities identified for improvement in New Hampshire's ability to respond to an Anthrax incident.

The primary areas for improvement are:

- There are no mutual aid agreements in place to backfill the NH Department of Health and Human Services staff for prolonged operations.
- Plans and procedures were not in place to address the legal challenges encountered in the sampling of privately owned drums.
- A new lab testing method for environmental detection of anthrax was validated by a group of LRN laboratories, but CDC had not yet released this method to LRN labs for use.
- Durham officials were not kept fully informed of all the on-site activities as they should have been during the initial stages of the incident.
- Clarification of what constitutes the "activation" of the ICC is needed.
- Responders were not able to verify that all agencies, departments, and responders serving directly or indirectly were able to communicate via WebEOC or that WebEOC was updated as often as needed.
- Lab results were not reported back to the on-scene Incident Commander.
- Regional response teams have difficulty recouping costs for response events.

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Chapter 1: Overview of Events

The New Hampshire (NH) 2009 Anthrax Incident was a real-time response to the first recorded case of gastrointestinal Anthrax in the United States. On December 24, 2009, New Hampshire activated the full capabilities of the State's emergency management and public health response forces after receiving notification from Massachusetts General Hospital that a patient transferred from a NH hospital tested positive for gastrointestinal Anthrax. After conducting a rapid review of the patient history and reviewing the epidemiological indicators for potential exposures, NH Division of Public Health Services (DPHS) determined the patient was most likely exposed to Anthrax at a drumming event held at the United Campus Ministry (Ministry) in Durham, NH, on December 4, 2009. The exposure would later be confirmed through environmental sampling at the Ministry and additional laboratory testing.

New Hampshire's response efforts were categorized into three phases, each with distinct time periods and actions:

- Phase I: Initial Entry (December 24 - 26, 2009)
- Phase II: Second Entry (December 27, 2009 - January 7, 2010)
- Phase III: Remediation (January 7, 2010 - April 16, 2010).

Phase I: Initial Entry focused on the notification of Anthrax to the response partners, determination of incident command and legal responsibilities, identification of the possible source, and initial environmental sample collection. During the 48-hour period, it was determined through legal opinion that the NH Department of Health and Human Service (DHHS) would assume command and control of the incident with the NH Department of Safety, Division of Homeland Security and Emergency Management (HSEM), as a support agency. The New Hampshire National Guard-12th Civil Support Team (CST) and the Seacoast Technical Assistance Response Team conducted the initial environmental sampling at the Ministry and patient's home. Representatives from the NH Department of Environmental Services (DES) and New Hampshire Department of Safety, Division of Fire Safety, Office of the State Fire Marshal (FMO) managed the incident at the Ministry and patient' s home. Also during this phase, the DHHS Division of Public Health Services Laboratory (Lab) began its review of the samples and 'look back' to determine if the samples taken from the Ministry and patient's home matched samples taken from the patient. DPHS also began the task of indentifying possible contacts that were exposed at the drum circle on December 4, 2009.

Phase II: Second Entry continued to focus on identification, contact, and interviewing of persons who attended the drum circle. Persons who were at risk were directed to their primary care providers and assistance was offered to anyone without a provider. A plan to prophylaxis persons at the circle was established and shared with the primary care providers and persons at the event. DPHS and DES staff located more than 30 drums in- and out-of-state for sampling to determine the possible source of the contamination. The CST conducted a second round of sampling per the request of the State laboratory to further help identify the Anthrax levels, determine the prophylaxis plan, and provide further detail for the remediation plan. The Public Health Laboratory Network in the Greater New England region conducted additional look back testing

on several samples to confirm the Anthrax strain and rule out possible additional exposures that may have been overlooked. DPHS, with assistance from Dartmouth-Hitchcock Medical Center, conducted a death and hospital admissions records review focusing on October 2009 through December 2009 to determine additional cases that may not have been identified.

Phase III: Remediation focused on developing and executing a remediation plan for the Ministry, drum and decontamination material disposal, and lab analysis. The remediation plan was developed by DES with assistance from the U.S. Environmental Protection Agency (EPA) and lessons learned from the Connecticut and New York State cases. The Ministry agreed to the plan and worked with the EPA to locate a contractor with experience in decontamination. The Lab and DES conducted additional sampling to determine the Anthrax levels during this phase.

The NH 2010 Anthrax Response was focused in the Town of Durham at the United Campus Ministry and at the patient's home in a neighboring town. Representatives from the following Federal, State, and local entities were involved in the response:

Federal

- Centers for Disease Control and Prevention (CDC)
- Federal Bureau of Investigation (FBI)
- National Institute of Occupational Safety and Health (NIOSH)
- Occupational Safety and Health Administration (OSHA)
- United States. Environmental Protection Agency (EPA)
- EPA Superfund Technical Assistance Response Team (START)
- United States Public Health Service

State

New Hampshire

- State of New Hampshire Governor's Office
- New Hampshire Department of Environmental Services (DES)
- New Hampshire Department of Health and Human Services (DHHS)
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- New Hampshire Department of Health and Human Services – Division of Public Health Services Laboratory (PH Lab)
- New Hampshire Department of Justice (DOJ)
- New Hampshire Department of Safety (DOS)
- New Hampshire Department of Safety, Division of Fire Safety, Office of the State Fire Marshal (FMO)
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Local
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- City of Nashua - Division of Public Health
- City of Rochester
- City of Rochester - School District
- Strafford County Public Health Region
- Town of Barrington
- Town of Durham
- Town of Durham Fire Department
- Town of Durham Police Department
- Town of Durham Public Works
- Town of Hooksett Fire Department
- Town of Hooksett Police Department
- Town of Hooksett Waste Water Treatment Plant
- Seacoast Technical Assistance Response Team (START)
- United Campus Ministry
- University of New Hampshire (UNH)
- University of New Hampshire Health Services
- University of New Hampshire Police Department
- Seacoast Technical Assistance Response Team (START)
- United Campus Ministry

- University of New Hampshire (UNH)
- University of New Hampshire Health Services
- University of New Hampshire Police Department

Hospitals

- Dartmouth-Hitchcock Medical Center
- Frisbie Memorial Hospital
- Massachusetts General Hospital

A summary of the timeline of events generated from NH DHHS, DPHS, HSEM, DES, and local Situational Reports (Sitreps) is located in Appendix B.

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Chapter 2: Analysis of Response

This section of the report reviews the performance of the activities and tasks. Observations are organized by capability and associated activities, taken from the U.S. Department of Homeland Security (DHS) Target Capability List (TCL). The TCL comprises 37 capabilities, which address response capabilities, immediate recovery, selected prevention and protection mission capabilities, as well as common capabilities, such as planning and communications that support all missions.

In this chapter, the capabilities linked to the New Hampshire (NH) 2010 Anthrax Incident objectives are listed, followed by corresponding activities, which serve as guides for identifying and prioritizing investments when working to establish a capability. In addition, each capability is followed by related observations, which include references, analyses, and recommendations. The analyses of capabilities that follow reflect the individual views of participants. **The analyses are subjective and the recommendations are opinions that may or may not reflect the State's strategies and priorities.**

Relevant Target Capabilities

- Planning
- Intelligence and Information Sharing and Dissemination
- Epidemiological Surveillance and Investigation
- Laboratory Testing
- Emergency Operations Center Management
- Onsite Incident Management
- Weapons of Mass Destruction and Hazardous Materials Response and Decontamination
- Emergency Public Information and Warning
- Environmental Health
- Mass Phrophylaxis

Capability: PLANNING

Capability Summary: Planning is the mechanism through which Federal, State, local and tribal government, non-governmental organizations (NGO), and the private sector develop, validate, and maintain plans, policies, and procedures describing how they will prioritize, coordinate, manage, and support personnel, information, equipment, and resources to prevent, protect and mitigate against, respond to, and recover from events. The focus of the planning capability is on successful achievement of a plan's concept of operations using target capabilities and not on the ability to plan as an end in itself.

Activity 1: Developing and Maintaining Plans, Procedures, Programs, and Systems

Observation 1.1 (Area for Improvement): There are no mutual aid agreements in place to backfill the New Hampshire (NH) Department of Health and Human Services (DHHS) staff for prolonged operations.

Analysis: The anthrax incident taxed the resources of DHHS program staff. Program staff encountered a large number of contacts that needed to be interviewed and investigated. DHHS

staff performed its regular duties in addition to the duties required for the investigation. Had this case involved a larger number of contacts and cases or continued over a longer period of time, DHHS staff would have been maximized and burnt out. Two municipal health departments, Manchester and Nashua, have public health nurses on staff that performs many of the functions of the DHHS public health nurses. Directors from both departments stated their willingness to lend DHHS their staff for backfill or to augment future investigations. Currently, memoranda of understanding (MOUs) exist between cities, but not between cities and the State.

Recommendation(s):

1. Determine the staff capacity and roster at DHHS that is needed for investigations.
2. Determine staff capacity at municipal health departments and academic medical centers to augment DHHS public health nurse staff.
3. Develop mutual aid agreements between DHHS and municipal health departments to backfill DHHS staff.
4. Develop MAAs between health departments and municipal facilities to backfill local health department staff.
5. Review Mission Essential Functions to determine what changes will be necessary during an emergency.
6. Make changes in the Continuity of Operation (COOP) plan, if appropriate, to demonstrate the changes to control and surveillance personnel during an emergency.

Observation 1.2 (Area for Improvement): DHHS encountered significant information technology barriers when it implemented its COOP plan.

Analysis: The DHHS COOP plan establishes a plan to backfill public health nurses when an incident pulls them away from their daily operations. Due to security systems in DHHS, the personnel filling in for the public health nurses required secure access to the DHHS network. Information Technology (IT) issues resulted in significant time lost and only 3 hours of work time per day. The backfill staff was contractually on site for 8 hours despite only having performed the job functions for 3 hours. Public health nurses conducting the response had to make up the work plus do the response. This resulted in long hours each day as well as delays.

Recommendation(s):

1. Revise the COOP plan to correct the IT issues encountered during the response.
2. Resolve IT issues in advance to eliminate the issues of log in and access in the future.

Capability: INTELLIGENCE AND INFORMATION SHARING AND DISSEMINATION

Capability Summary: The Intelligence and Information Sharing and Dissemination capability provides the tools necessary to enable efficient prevention, protection, response, and recovery activities. Intelligence/ Information Sharing and Dissemination is the multi-jurisdictional, multidisciplinary exchange and dissemination of information and intelligence among the Federal, State, local, and tribal layers of government, the private sector, and citizens. The goal of sharing and dissemination is to facilitate the distribution of relevant, actionable, timely, and preferably declassified or unclassified information and/or intelligence that is updated frequently to the consumers who need it. More simply, the goal is to get the right information to the right people at the right time. An effective intelligence/information sharing and dissemination system will provide durable, reliable, and effective information exchanges (both horizontally and vertically) between those responsible for gathering information and the analysts and consumers of threat-related information. It will also allow for feedback and other necessary communications in addition to the regular flow of information and intelligence.

Activity 1: Incorporate All Stakeholders in Information Flow

Observation 1.1 (Strength): State officials notified the University of New Hampshire (UNH) Police Department.

Analysis: At the onset of the investigation, the UNH Police Department (PD) was one of the parties informed of the event by Homeland Security and Emergency Management (HSEM). The police department received word on the evening of December 24, 2009. The UNH PD feels the timeliness of the notification was appropriate and that steps were followed to disseminate the information per normal protocols. Discussions were held between the state of NH and the UNH PD regarding the involvement of the UNH Police Department and it was determined that it would perform support functions as needed. UNH Police Department's first responsibility was to provide security for the building of interest and to perform daily drive-bys.

Recommendation(s): None

Activity 2: Horizontal Flow Information

Observation 2.1 (Strength): It was beneficial to have "learning moments" at the end of daily conference calls.

Analysis: Due to the complexity of the event and its unique nature, DHHS used the expertise on the conference calls to conduct "learning moments." These recaps were no more than 5–10 minutes at the end of each call with a specific focus. They gave responders a better understanding of the agent, its impact, treatment, and lab testing. Learning moments also likely prevented misunderstandings that otherwise could have had ample opportunity to occur.

Recommendation(s):

1. Incorporate "learning moments" into standard operating procedures (SOPs).

Observation 2.2 (Strength): Morning conference calls included the DPHS Outbreak Team and leadership from State and Federal agencies were well organized and beneficial to all who attended.

Analysis: Morning conference calls were held daily to provide situational awareness. Calls initially involved outbreak team members, but later expanded to include members of senior leadership. The conference call schedule and set up was excellent. The set time allowed responders to plan accordingly. Advance agendas and following the agenda helped responders decide when to participate and when they could drop off. Conference calls ensured everyone could have access to information at the same time.

Recommendation(s)

1. Incorporate this conference call format into SOPs.

Observation 2.3 (Area for Improvement): Current clinician Health Alert Network (HAN) groups are out of date.

Analysis: The current clinician HAN group setup does not capture the correct people when attempting to reach the public health audience. Responders discovered the intended audience was not always the audience that received the message. During the holiday season, back-up recipients were at times also on vacation, thus proving the need for multiple back-up contacts to ensure redundancy.

Recommendation(s):

1. Update HAN groups to reflect the correct people within each group, duplicating individuals in groups as necessary to ensure the correct audience is being reached.
2. Individuals registered with HAN should identify and register multiple back-up contacts for each key individual/position
3. Educate potential HAN requestors about the established groups, the types of individuals identified in the group, and how to request a HAN. Test the HAN quarterly. Also, identify multiple ways to be reached (i.e. email, home phone, cell phone) during emergencies because not all communication works during a disaster.
4. Contacts should identify multiple ways to be reached (i.e. email, home phone, cell phone) during emergencies because not all communication works during a disaster.

Capability: EPIDEMIOLOGICAL SURVEILLANCE AND INVESTIGATION

Capability Summary: The Epidemiological Surveillance and Investigation capability is the capacity to rapidly conduct epidemiological investigations. It includes exposure and disease (both deliberate release and naturally occurring) detection, rapid implementation of active surveillance, maintenance of ongoing surveillance activities, epidemiological investigation, analysis, and communication with the public and providers about case definitions, disease risk and mitigation, and recommendation for the implementation of control measures.

Activity 1: Develop and Maintain Plans, Procedures, Programs, and Systems

Observation 1.1 (Area for Improvement): Plans and procedures were not in place to address the legal challenges encountered in the sampling of privately owned drums.

Analysis: Due to the unique nature of the event, DHHS did not have legal plans and procedures in place to conduct sampling of privately owned drums. DHHS and the NH Department of Environmental Services (DES) legal departments, within the New Hampshire Attorney General's Office, worked closely with the Environmental Protection Agency (EPA) to develop a release form that would address the legal issues (such as collection, storage, damage, and destroying property). Overall, the release addressed the needs of the situation but the legal departments missed one critical piece: the offer of split samples. EPA typically offers split samples, which allow contacts to have samples independently tested. The offer was included in the release form signed by drum owners. A few drum owners requested the split samples, which created additional issues such as how to distribute samples of anthrax to the owner without negative consequences. Ultimately, DHHS convinced drum owners of the need to use the samples to retest instead of giving the samples back to the drum owner. Another legal challenge involved using a verbal authorization for access during the first and second entry rather than the typical written (signed) agreement. Residents at United Campus Ministry were not available and verbal was the best alternative at the time.

Investigators also encountered barriers executing the drum sampling from several drum owners. Several of the participants in drum circle were reluctant to give information about their drums due to the possible impact on their livelihood (conducting drum circles, lessons, selling drums, etc.) and others were very weary of the sampling process. DPHS had to work with the owners to explain the process and why the sampling was critical to the investigation. DHHS legal researched the public health laws that would allow DHHS to "take" the drums per legal order if owners refused to turn over the drums. *See Appendix J (Drum Order Template); K (Release and Waiver); and L (Request for Superior Court Hearing. Also see Appendix F (RSA 141-C 11-15).*

Recommendation(s):

1. Revise current plans to include an edited version of the release form developed during this incident that does not include the split sample option, citing the potential security risks inherent in the hazardous nature of the sample. As an alternative, it could include the option for requesting retesting, under DHHS control.

2. Identify applicable laws, policies, and implementation procedures for situations of this nature.
3. Outline a legal framework for dealing with private property.
4. Create generic legal and private property forms for testing.

Activity 2: Direct Epidemiological Surveillance and Investigation Operations

Observation 2.1 (Strength): The New Hampshire Infectious Disease Team made public health recommendations for prophylaxis and offered assistance to contacts and primary care providers.

Analysis: The New Hampshire Infectious Disease Team and the DPHS Lab worked with the Centers for Disease Control and Prevention (CDC) to identify the correct course of action for those exposed to Anthrax. All contacts were counseled on the use and risks of prophylaxis and their potential need to use them. The Infectious Disease Team offered assistance to the primary care providers of the contacts by providing clarification regarding the event, faxing the appropriate HAN messages, directing phone calls, and triaging contacts to medical doctors, to name a few. *See Appendix I (Article: Gastrointestinal Anthrax After An Animal Hide Drumming Event).*

Recommendation(s):

1. None

Observation 2.2 (Area for Improvement): Lab personnel were offered vaccine and antibiotics post exposure.

Analysis: As part of an appropriate occupational health program, staff should be provided vaccination before exposure. Lab staff was not provided the opportunity to be vaccinated against Anthrax prior to this exposure, which left the staff feeling vulnerable. Exposure can happen at any time, and lab staff was not properly safe guarded against it.

Recommendation(s):

1. Provide lab personnel with the necessary vaccines pre-exposure to reduce the risk of developing symptoms once exposed.

Observation 2.3 (Strength and Area for Improvement): DHHS reported the incident to the Federal Bureau of Investigation (FBI) regional offices in Boston per the DHHS terrorism plan.

Analysis: DHHS policies and procedures involve the notification of the FBI regional office in Boston. As part of the capability, DHHS should notify the appropriate parties within 1 hour as listed in the U.S. Department of Homeland Security (DHS) Target Capabilities List (TCL). This was accomplished during this event. All New Hampshire stakeholders should review plans to

understand policies and procedures for all departments. Plans should also be revised to ensure identification of stakeholders, notification procedures, and information sharing. *See Appendix E (RSA 21-P: 5a)*

Recommendation(s):

1. Include the Director of Homeland Security and Emergency Management (HSEM) on the notification list and ensure he/she is notified as soon as possible.
2. Identify all pertinent stakeholders across all disciplines and incorporate them into the information flow through a clearly defined information sharing system.
3. Review bioterrorism response plans with all New Hampshire stakeholders and responders.
4. Create a checklist with pre-determined trigger points for Federal notification and/or involvement.
5. Create a method to notify appropriate personnel that the FBI has been contacted.

Observation 2.4 (Area for Improvement): Hospitals do not have plans, procedures, and protocols to provide backup to facilitate an investigation into a potential disease outbreak when the Infection Control Practitioner (ICP) or medical records supervisor is not available.

Analysis: Due to the holidays, the ICP at Frisbie Hospital was not physically in the hospital where the patient was hospitalized when the request for medical records came from the public health nurse. The ICP was able to return to the hospital to release the records but this caused a delay in record retrieval. The issue of obtaining medical documentation has surfaced in other outbreak investigations. Based on HIPPA laws, hospitals are not comfortable releasing hospital records to State public health officials. Hospitals and other local partners who play a key role in public health investigations should have policies and plans in place to facilitate record retrieval.

Recommendation(s):

1. DHHS, NH Hospital Association, and Infection Control Practitioners in hospitals should partner to identify applicable laws, policies, and implementation procedures (i.e., COOP plans) for public health reporting and notification.
2. Hospitals should determine primary and back-up staffing for critical staff (e.g., ICP).
3. Provide training on plans and protocols. DHHS should partner with the hospitals to train medical records staff on existing State statutes regarding medical records requests and public health investigations.
4. Provide 24-hour communications for emergency situations.

Activity 3: Surveillance and Detection.

Observation 3.1 (Strength): DHHS used subject matter experts (SMEs) from Dartmouth to review disease, hospital admission, and death data to determine the extent of the outbreak.

Analysis: A consultant from Dartmouth reviewed the ICD-9 codes to determine if anyone within the time period presented at an Emergency Department or was admitted to a local hospital

with similar symptoms. Death certificate surveillance was also conducted. This was done to eliminate the possibility of additional patients that may have been overlooked during the first review and to determine if there was an outbreak. More than 8,000 patients and death records were reviewed. One additional person was identified who went to the hospital and attended the drum circle. The contact was not infected.

Recommendation(s):

1. Continue to use the SME from academic centers to conduct epidemiological data review.

Activity 4: Conduct Epidemiological Investigation

Observation 4.1: (Strength) DPHS was able to confirm the Anthrax organism in the patient was consistent with the samples found in the United Campus Ministry (Ministry) using lab data and disease tracking data.

Analysis: DPHS anticipated the Ministry to test positive for Anthrax, and the samples from the Ministry and patient to match. DPHS developed this hypothesis based on other possible contaminants, the patient's history, risk of exposure from animal hide drums, and other contact histories present at the Ministry. Specifically, gastrointestinal anthrax in a vegetarian is very unlikely and intentional contamination was unlikely because only one person was infected.
DPHS worked with DES, EPA, CDC, and the National Institute for Occupational Safety and Health (NIOSH) to determine a sampling plan to validate the hypothesis. The sampling plan would later play a key role in determining the remediation plan.

Recommendation(s): None

Observation 4.2: (Strength): The Infectious Diseases Team was empowered to use alternative methods for contact tracing.

Analysis: The Infectious Diseases Team was faced with the challenge of finding contacts that were on winter break from the University. The event had no formal sign in sheet and no RSVP list. Nurses partnered with the Ministry to use photographs from the event, Facebook invitations, and log-in sheets from a different event previous in the day to identify contacts. Nurses created an Excel spreadsheet to track the contact investigation.

Recommendation(s):

1. Revise contact tracing procedures to reflect the alternative methods of investigation identified during the response as a lesson learned.

Capability: LABORATORY TESTING

Capability Summary: The Laboratory Testing capability is the ongoing surveillance, rapid detection, confirmatory testing, data reporting, investigative support, and laboratory networking to address potential exposure, or exposure, to all-hazards which include chemical, radiological, and biological agents in all matrices including clinical specimens, food and environmental samples, (e.g., water, air, soil). Such all-hazard threats include those deliberately released with criminal intent, as well as those that may be present as a result of unintentional or natural occurrences.

Activity 1: Direct Laboratory Testing

Observation 1.1 (Area for Improvement): A new lab testing method for environmental detection of anthrax was recently validated by a group of LRN laboratories, but CDC had not yet released this method to LRN labs for use.

Analysis: The CDC Laboratory Response Network (LRN) methods are used for detection of biological terrorism agents. Methods are validated and released by CDC to Public Health Laboratories who are members of the LRN. A new lab testing method for environmental detection of anthrax was recently validated by a group of LRN laboratories, but CDC had not yet released this method to LRN labs for use. It was determined that this method should be utilized in the incident and therefore, the lab process was new to all members of the Laboratory Response Network (LRN) including the NH PHL.

The New Hampshire Laboratory was prepared to accept and test samples using the current LRN method for detecting anthrax in environmental samples. The new LRN method was recommended for use in order to generate semi-quantitative results; to be able to count number of spores in different areas. This change in the LRN protocol required just-in-time training for the entire NH PHL staff as well as purchasing and borrowing new machinery and/or equipment.

Recommendation(s):

1. LRN labs should be aware of methods “in the pipeline” that are coming out; otherwise they have no idea of the potential testing method and/or reagents, supplies and equipment necessary to perform the test.

Observation 1.2 (Area for Improvement): Directions distributed to the sentinel laboratories for the “look back” study were not clear to all hospital laboratory recipients.

Analysis: The request for a “look back study” was something that the sentinel has never been asked to do before. The request indicated that a 3-deep list of sentinel lab partners should be expanded to include more individuals. Some recipients were unaware of the look back analysis requirements or what was being asked of them, therefore responses were inconsistent.

Recommendation(s):

1. Directions for the "look back study" should be sent in written form and followed up with a conference call to ensure all participants understand the directions and what information is being requested.

Observation 1.3 (Strength) The New Hampshire Laboratory led weekly conference calls with the Northeast Environmental and Public Health Laboratory (NEEPHLD) partners and with other state LRN labs.

Analysis: Three laboratories who were part of the CDC LRN new method validation were participants in the calls. Involving New York (NY), Connecticut (CT), and Tennessee (TN) on these calls helped shape the response by giving the laboratories an opportunity to discuss protocols and plans that these three were familiar with since they had experience with the method. They gave information and lessons learned from their experience. Also, including the NEEPHLD partners kept these labs aware of the situation as it unfolded so they could be prepared to assist if necessary. An example is the MA PHL purchased similar equipment that NH did in preparation to assist if necessary.

Recommendation(s):

1. Create a checklist of "experts" from other states and/or sites to involve in conference calls. Include the checklist in SOP.

Activity 2: Sampling and Specimen Management

Observation 2.1 (Strength): CST and START conducted sampling procedures according to plans validated with DES and EPA.

Analysis: Sampling plans and techniques were discussed by the DES, EPA and the START team (see comment above) The CST and START conducted the first sampling, and the CST conducted the second entry designed around the first sampling results. The January 7, 2010 entry had three primary goals: (note: EPA conducted sampling at the 1/7/10 event)

1. Delineate the extent of contamination.
2. Sample the drums that had been disseminated during the drumming event (total of 10 drums, sampled at the Durham Waste Water Treatment Plant [WWTP]).
3. Collect additional data to support the epidemiological study.

Other sampling events include the CST sampling at the drum vendor and at the case patient's home. The Phase I sampling included the Durham ministry house, the case patient's house, and the drum vendor. EPA indicated this process was similar to another event that EPA supported in Connecticut. *See Appendix D (RSA 154:1-a)*

Recommendation(s):

1. Clarify and educate legal authority and working with locals in SOPs.
2. Provide awareness/education at the local level of the CST role.

3. Provide awareness/education for the CST on the local and regional roles.
4. Create an Initial Action Plan (IAP) to lay out all parties that should be included in the initial response.
5. Include state partners in sampling plan design.

Observation 2.2 (Area for Improvement): CST and DPHS use different tracking number for samples creating a challenge during the chain of custody and sampling/testing.

Analysis: The Public Health Laboratory (PHL) and the CST utilize different numbering systems which are not interchangeable and time is lost in renumbering upon receipt from the other party. This would have been a non-issue if the PHL was involved in the IAP.

Recommendation(s):

1. PHL and CST should coordinate on the sample number procedures to determine how it can be streamlined.
2. Streamline numbering systems to improve efficiency of both the CST and PHL.
3. Chain of custody considered for coordination also.

Activity 3: Report Results

Observation 3.1 (Area for Improvement): Currently very limited scientific research exists on anthrax cases involving humans within the United States. In addition, CDC LRN methods for detection of anthrax in environmental samples have rarely been utilized in real events therefore DPHS was not able to provide a definitive confirmation of reduced levels of an.

Analysis: Using CDC LRN method guidelines for interpretation of results, some PCR results were not conclusive. The New Hampshire Lab encouraged the EPA, DES and the Ministry not to use the results as definitive or base the remediation plan on the findings as these methods were never meant to be used to "clear" a building. There were several discussions with NIOSH, CDC, EPA, and DPHS to determine the level of Anthrax present and the level of remediation required.

Recommendation(s):

1. Revise the reporting plans to address inconclusive lab results as part of the reporting and decision making process, including clinical guidance on how to handle the information.
2. Utilize CDC LRN interpretative guidelines to interpret results and take next steps when necessary.

Observation 3.2 (Area for Improvement) There was confusion as to how the lab would report results back to the IC onsite.

Analysis: Protocol states that the lab reports to the Incident Command Coordinator who then passes results to the Incident Command onsite. The lab does not report directly to the onsite sample collection team. Laboratory staff followed protocol and sent lab reports to the ICC, but

the results never made it to the onsite team through proper channels.

Recommendation(s):

1. Notify appropriate public health, public safety, and law enforcement officials immediately of laboratory results of a chemical, biological and radiological threat agent.
2. Ensure all parties involved have reviewed and understand written protocols.
3. Ensure ICS is understood and utilized by all involved parties.

Capability: EMERGENCY OPERATIONS CENTER MANAGEMENT

Capability Summary: Emergency Operations Center (EOC) Management is the capability to provide multi-agency coordination for incident management by activating and operating an EOC for a pre-planned or no-notice event. EOC management includes EOC activation, notification, staffing, and deactivation; management, direction, control, and coordination of response and recovery activities; coordination of efforts among neighboring governments at each level and among local, regional, State, and Federal EOCs; coordination public information and warning; and maintenance of the information and communication necessary for coordinating response and recovery activities. Similar entities may include the National (or Regional) Response Coordination Center (NRCC or RRCC), Joint Field Offices (JFO), National Operating Center (NOC), Joint Operations Center (JOC), Multi-Agency Coordination Center (MACC), Initial Operating Facility (IOF), etc.

Activity 1: Direct EOC Tactical Operations

Observation 1.1 (Strength): After the initial elements of the response were determined, the DHHS legal department and Attorney General's Office were contacted to determine statutory authority for the incident.

Analysis: The definition of the event—hazardous materials (HazMat); chemical, biological, radiological, nuclear, environmental (CBRNE); public health; etc.—created initial confusion among responding agencies regarding who was in charge, who was responding, and to what they were responding. Each department (DHHS, HSEM, and DES) had its own policies and procedures to respond to the event, but the ultimate command and control was not determined until a legal opinion was given after a statue review. It was quickly recommended that all departments should convene a meeting to educate each other on their response plans. Revised Statutes Annotated (RSAs) need to reflect the correct leadership (i.e., who is charge for each emergency. *See Appendix C (Incident Command Organizational Chart), Appendix D (RSA 154:1-a), Appendix H (Anthrax Appeal) and Appendix G (Statutory Authority for Management of Emergency/Disaster by Situation Type).*

Recommendation(s):

1. Coordinate jurisdictional emergency management operations.

2. Define events—HazMat, CBRNE, public health, etc.—to ensure a full understanding of who is in charge by event, and include this information in SOPs.
3. Current RSAs should be revised to reflect the chain of command, roles and responsibilities, and who pays. RSAs need to reflect the correct leadership (i.e., who is charge for each emergency).
4. Each department should update its plans to reflect lessons learned from the response and current contact lists.
5. Each department should also make the plans more encompassing to include naturally occurring anthrax (compared to bioterrorism).

Observation 1.2 (Area for Improvement): Durham officials were not informed as they should have been during the initial stages of the incident.

Analysis: Local officials, including the town administrator, public safety and health officer should have been contacted and briefed as a group early in the process. There were essentially two issues related to notification of local officials:

1. There were concerns regarding initial notification of the incident. The concern for immediate notification of local public officials must be balanced against verification of facts, sensitivity to the criticality of confidential information, the safety of citizens and responders, and the understanding that the command authority for a public health emergency ultimately rests with the DHHS. In general, the state should always try to communicate early, based on the above factors, as local officials may become a critical component of the response team.
2. Except in extreme circumstances, a core group of local officials should be briefed prior to state or federal resources showing up in a community. This puts local officials in an extremely awkward situation.

A conference call was conducted between local and state officials on Monday, December 28, 2009**;** four days after the incident began. Prior to this there had been one-to-one telephone calls between various state and local officials however, this was not enough to keep all parties adequately briefed. For example, response equipment from the state arrived at the Mill Street address without prior knowledge of local officials; the fire department had the need to establish response protocols in the event there was a fire or other emergency at the incident site and local public safety officials were not fully aware of the potential health hazards/threat associated with anthrax. Once the daily conference call routine was established many of these concerns were abated.

Recommendation(s):

1. Determine early on in the response which agencies need to be part of the overall response team.
2. Ensure adequate briefing of emergency response personnel at all levels.
3. In-service training ("learning moments") should have been provided to local public safety and health officials to ensure the appropriate level of knowledge regarding the threat and response activities.

Observation 1.3 (Area for Improvement): Limitations of the physical space (DPHS Room 312) were not conducive to the needs of the various command and control functions (planning, logistics, etc).

Analysis: Room 312 served as the central command and control location (command post) for the entire event. The room is not structured or equipped to support this type of activity. Additionally, command staff/decision makers were not always in the room to answer phone or answer questions; this sometimes left partners to search the building for info/decisions to be made. The State Emergency Operations Center is equipped and can be staffed to meet the needs of a command post if necessary. WebEOC was not used by all of the response agencies which created difficulties for various response agencies looking for current information regarding the incident.

Recommendation(s):

1. Assess the needs of the incident and the command and control functions to determine if the SEOC or an adequate alternative location should be utilized for the command post.
2. The Public Health facility at 29 Hazen Drive should stage appropriate equipment so that a command center could be deployed on site and if the ICC or State Emergency Operations Center is not appropriate site.
3. Ensure there are command staff/decision makers assigned to the command post for all shifts; as well as designee for when they may be called out of the room.
4. WebEOC should be consistently used by all entities to document their activities during the incident. This provides situational awareness to local, state and federal entities involved in the incident regardless of their physical location.

Activity 2: Activate EOC

Observation 2.1 (Area for Improvement): Clarification of what constitutes the "activation" of the ICC is needed.

Analysis: The function of the ICC was performed, although the designated ICC Room at the Brown Building was not staffed. ICC functions can be performed without staffing the room. Those in charge of the response were comfortable with the ICC set up. However, discussion is needed to determine the best way to set up and activate the ICC. Once determined, all entities should be informed of what to expect in regard to the activation of the ICC at different levels of response.

Recommendation(s):

1. Define ICC activation and what is necessary.
2. Ensure that ICC definition is understood by all parties.

Activity 3: Gather and Provide Information

Observation 3.1 (Area for Improvement): Responders were not able to verify that all agencies, departments, and responders serving directly or indirectly were able to communicate via WebEOC or that WebEOC was updated as often as needed.

Analysis: Due to conflicting responsibilities, lack of personnel, and lack of understanding about WebEOC capacity, Web EOC was not used to its full potential during the incident. The lack of a common operating platform for communication would be resolved using WebEOC. A dedicated data entry person at DPHS would have been helpful to populate WebEOC which would have provided an up-to date timeline of events. Although DHHS posted Situational Reports (SitReps) daily on WebEOC, further use of WebEOC could have provided a running log of response events for situational awareness of all partners – whether involved or not.

Recommendation(s):

1. Designate and train a data entry staff person with sole responsibility for updating WebEOC during an event to ensure up-to-date situational awareness.
2. Make WebEOC the common operating platform for information sharing and communication for all New Hampshire departments and agencies during emergencies.
3. Train all New Hampshire departments and agencies on WebEOC.
4. Integrate current situational reports for departments, divisions, bureaus, etc., into WebEOC.
5. Determine the role of WebEOC during a response and how it is to be used by all involved departments and agencies.
6. HSEM should provide on-going technical support for WebEOC.

Observation 3.2 (Area for Improvement): Local conference calls were focused more on situational awareness and lacked an Incident Command, planning, and operations focus.

Analysis: An ideal conference call formula might be an operational/planning meeting in the morning with minimal situational awareness, SitReps posted at pre-determined times each day, and a noontime conference call with locals to create a "battle rhythm."

Recommendation(s):

1. Establish operational objectives early in the response.
2. Post SitReps on WebEOC at predetermined times each day of the response.
3. Hold an operational/planning meeting in the morning with minimal situational awareness.
4. Hold a conference call with locals to create a "battle rhythm."

Activity 4: Support and Coordinate Response

Observation 4.1 (Strength): All response partners worked well together during the Anthrax event.

Analysis: Response partners demonstrated successful working relationships and partnerships during the response to the Anthrax event. Leadership took the roles and responsibilities seriously and there were successful interactions between SMEs and directors of each department and agency.

Recommendation(s):

1. Continue to review and update plans, Memorandum of Understandings (MOUs), interagency agreements, etc based on this event.

Activity 5: Post Response Phase Activities

Observation 5.1 (Strength): Hot wash meetings were held independently within individual departments and agencies.

Analysis: Upon completion of a response phase, all emergency management response activities should be terminated, records archived, systems restored, and staffing returned to a pre-incident ready state. There were no formal discussions of the facilitation of demobilization of plans and procedures nor was there a re-assessment of the response events and phases.

Recommendation(s):

1. Ensure that a formal hot wash is held upon completion of an incident and that the requirement to do so is included in SOPs.
2. Complete individual department and/or agency hot wash meetings along with the collective response hot wash.

Observation 5.2 (Area for Improvement): Regional response teams have difficulty recouping costs for response events.

Analysis: It cannot be assumed that the responding party can pay for sampling. Costs associated with a response include but are not limited to equipment, backfill, and rehabilitation. State RSA 154 must reflect the new definitions to include CBRNE and public health hazardous materials emergencies. There is a substantial concern about the sustainability of the regional HazMat teams without the support/funding of response. *See Appendix D (RSA 154:1-a)*

Recommendation(s):

1. Convene a study group to look at funding for Hazmat Teams statewide.

Capability: ONSITE INCIDENT MANAGEMENT

Capability Summary: Onsite Incident Management is the capability to effectively direct and control incident activities by using the ICS consistent with the National Incident Management System (NIMS).

Activity 1: Implement On-Site Incident Management

Observation 1.1 (Area for Improvement): The location and visibility of the event was a challenge in the response phase.

Analysis: The incident took place over the Christmas holiday and during seasonably cold winter weather. The site location and weather conditions presented some logistical challenges for the personnel conducting the sampling activities. The initial plan for the sampling activity on December 26 was that the NH National Guard 12th Civil Support Team (CST), with the coordination and support of the DES, and the Durham Police Department, would obtain samples from within the United Campus Ministry Building. The initial mission was organized by NHDES, at the request of the DHHS, and was planned to be of relatively short duration, with a very limited number of participants that would be on-scene. DHHS stressed that it was imperative that samples be collected as soon as possible, in order to help assess the scope and extent of this public health emergency. The evening before the sampling event HSEM organized a conference call and NHDES was inadvertently not invited. During the conference call, the number of participating agencies and the scope of the mission were changed. Consequently, the logistical requirements and complexity of the sampling event also changed. Had the Incident Commander on scene (NHDES) been aware of the new developments, some of the logistical issues that arose on December 26 could have been addressed. For example, a request could have been made in advance for the use of the UNH buildings nearby for meeting space, warming stations, break rooms, etc. Weather conditions forced use of tents, vehicles, and trailers to serve these purposes. Ultimately, UNH was contacted and arrangements were made for use of the restrooms in a nearby building. The morning of the sampling event, changes were made in the level of personal protective equipment (PPE) that was to be used and also in the location of the dress-out tent and decontamination station; this also presented some logistical challenges.

Recommendation(s):

1. While NHDES and the EPA conducted an initial visit of the site and the surrounding area on December 25, the size and scope of the initial sampling event had not been finalized. An additional site visit, by those who would be doing the entry into the building, would have been beneficial.
2. A face-to-face planning meeting, attended by representatives of all the agencies that would be participating in the operation, would have allowed for the development of a more robust incident action plan and consequently, a more effective and efficient mission.

Activity 2: Develop Incident Action Plan (IAP)

Observation 2.1 (Strength): An on-scene IAP was developed to coordinate the various elements of environmental health among Federal, State, and local response on scene during the initial sampling event.

Analysis: In response to notification of environmental hazards, New Hampshire should provide overall mobilization, management of assessment, and coordination and support of environmental health activities from the response to the demobilization phase.

Recommendation(s):

1. Establish an IAP to plan for and anticipate issues during the response.
2. At every phase of the response, the IAP should be reviewed and revised as needed during planning meetings.
3. Review and revise the IAP during every phase of the response.
4. Create a comprehensive IAP if the response timeframe allows.

Observation 2.2 (Area for Improvement): Local responders were unclear of their on-site expectations, roles, and responsibilities.

Analysis: As part of the IAP, a daily back brief for the local responders to lay expectations should have been performed to clarify roles, responsibilities, and expectations of the responders. This also would have provided information to the ICC and possibility triggered information requests.

The IAP should address specific on-site security components. As a result, there were several security issues. A painter walked into the Ministry building with no PPE. UNH and Durham Police Department did not have a clear role in site security. Mill Road was not shut down during the operation but in hindsight, the Personally Owned Vehicle (POV) traffic between the site and operations should not have occurred (staff and resident safety).

Recommendation(s):

1. Include all departments and agencies in the planning meeting to establish the IAP.

Capability: WMD AND HAZMAT RESPONSE AND DECONTAMINATION

Capability Summary: WMD and HazMat Response and Decontamination is the capability to assess and manage the consequences of a HazMat release, either accidental or as part of a terrorist attack. It includes testing and identifying all likely hazardous substances onsite; ensuring that responders have protective clothing and equipment; conducting rescue operations to remove affected victims from the hazardous environment; conducting geographical survey searches of suspected sources or contamination spreads and establishing isolation perimeters; mitigating the effects of hazardous materials, decontaminating on-site victims, responders, and equipment; coordinating off-site decontamination with relevant agencies, and notifying environmental, health, and law enforcement agencies having jurisdiction for the incident to begin implementation of their standard evidence collection and investigation procedures.

Activity 1: Direct WMD and HazMat Response and Decontamination Tactical Operations

Observation 1.1 (Area for Improvement): Incident Command did not coordinate with the safety officer of the CST or START to brief the personnel on site-specific occupational safety and health issues involving the response once Anthrax was confirmed.

Analysis: Due to the nature of the event and the small number of people affected, New Hampshire made great efforts to keep the identities of the contacts and patients confidential. This presented a challenge to Phase I responders who needed to know the nature of the biological agent for their own follow up and care (if needed). Information about the biological agent and confirmation of anthrax was not communicated. Information was passed on second hand, but never officially from DPHS. This information was vital to the follow-up safety protocols of the START and CST. In future events, there should be continued communication with all responders via their chain of command, and information loop holes should be closed and documented.

Recommendation(s):

1. A clear definition of “confidential” should be established at the start of the event.
2. Establish what information is necessary to protect responder health and safety.
3. Share intelligence and/or information across disciplines in a timely and effective manner.

Activity 2: Conduct Mitigation Activities

Observation 2.1 (Area for Improvement): An individual was on-scene that did not have any PPE.

Analysis: Multiple individuals entered the Ministry building without proper PPE. *See Appendix M (Photographs of Response).*

Recommendation(s):

1. Identify appropriate PPE based on suspected HazMat and ensure all personnel obey the guidelines.
2. Coordinate with the security to ensure no one entering the affected area does so without the appropriate PPE.

Capability: EMERGENCY PUBLIC INFORMATION AND WARNING

Capability Summary: The Emergency Public Information and Warning capability includes public information, alert/warning, and notification. It involves developing, coordinating, and disseminating information to the public, coordinating officials, and incident management and responders across all jurisdictions and disciplines effectively under all hazard conditions.

(a) The term *public information* refers to any text, voice, video, or other information provided by an authorized official and includes both general information and crisis and emergency risk communication (CERC) activities. CERC incorporates the urgency of disaster communication with risk communication to influence behavior and adherence to directives.

(b) The term *alert* refers to any text, voice, video, or other information provided by an authorized official to provide situational awareness to the public and/or private sector about a potential or ongoing emergency situation that may require actions to protect life, health, and property. An alert does not necessarily require immediate actions to protect life, health, and property and is typically issued in connection with immediate danger.

(c) The term *warning* refers to any text, voice, video, or other information provided by an authorized official to provide direction to the public and/or private sector about an ongoing emergency situation that requires immediate actions to protect life, health, and property. A warning requires immediate actions to protect life, health, and property and is typically issued when there is a confirmed threat posing an immediate danger to the public.

(d) The term *notification* refers to any process in which Federal, State, local, tribal, or nongovernmental organization, department, and/or agency employees and/or associates are informed of an emergency situation that may require a response from those notified.

Activity 1: Manage Emergency Public Information and Warnings

Observation 1.1 (Strength): DES, DHHS, and local Public Information Officers (PIOs) coordinated internal and external information dissemination.

Analysis: DES and DHHS PIOs have a culture of sharing information among all partners. This "give and take" facilitates internal/external message development and coordination. Coordination was achieved via synchronized conference calls, emails, and face-to-face meetings. The extent of sharing is not common practice among all Federal, State, and local agencies and therefore took some adjustment from all parties.

Recommendation(s):

1. Continue to foster information sharing during non-emergencies to facilitate partnership among Federal, State, and local PIOs.

Activity 2: Activate Emergency Public Information, Alert/Warning, and Notification Plans

Observation 2.1 (Area of Improvement): The spokesperson changed several times during the incident.

Analysis: Changing of the spokesperson three times during the incident was a challenge. PIOs had to bring each spokesperson up to speed on the event and messaging. If at all possible, one person should be assigned from the beginning to establish a consistent person for the media and community.

Recommendation(s):

1. Establish one spokesperson for the duration of the event, as feasible.

Activity 3: Establish Joint Information System (JIS)

Observation 3.1 (Area of Improvement): Data-enabled phones for the DHHS and DES PIOs are not currently available.

Analysis: As a result of data-enabled phones not being available, the PIOs spent a lot of time at their desks or home computers waiting for material to review. Information and research were contradictory so PIOs had to spend time determining answers.

Recommendation(s):

1. Purchase Smart phones or similar data-enabled phones for DHHS and DES PIOs to ensure timely response and availability for situational awareness throughout the incident.

Observation 3.2 (Area of Improvement): PIOs were not included on all daily conference calls, such as CDC calls and evening conference calls.

Analysis: The exclusion of PIOs on the daily conference calls was not an intentional oversight but could have been resolved if all calls were coordinated through a Joint Information System (JIS). This would ensure a PIO would be present on every conference call in order to obtain a complete oversight of the event.

Recommendation(s):

1. Ensure conference call meeting minutes are posted on WebEOC.
2. Include a synopsis of previous conference calls at the beginning of each call. Include time for this on conference call agendas.

Activity 4: Conduct JIS Operations

Observation 4.1 (Strength): PIOs and/or Incident Command responded to media inquiries in a timely manner with correct information.

Analysis: Media outlets became very savvy during the response and asked increasingly complex questions about Anthrax. The PIOs and/or Incident Commander were able to research the answer, draft a response, and re-contact the media outlets within a reasonable time frame without extensive "push back" from the media outlets. This allowed the PIO to provide emergency information to the public that was verified, accurate, and as up-to-date as possible.

Recommendation(s):

1. Continue to foster relationships between the state PIOs and the media.

Activity 5: Issuing Public Information, Alerts/Warnings, and Notification

Observation 5.1 (Strength): Drafting public messaging was a challenge, but PIOs reached out to SMEs for direction and/or guidance.

Analysis: Due to the involvement of anthrax, the public messaging had to balance telling the story while not causing fear. The 2010 anthrax incident in New Hampshire was not like the 2001 New York and Connecticut Anthrax cases; therefore, messages could not be compared to earlier incidents. The CDC did not provide direct information due to the nature of the event, but provided more of an advisory role.

Recommendation(s):

1. Follow a similar process for subsequent events.

Observation 5.2 (Strength): DHHS and DES worked with UNH to provide emergency public information to the students and staff that was appropriate to their population.

Analysis: DES and DHHS worked with UNH to issue a message that was specifically targeted to the students and staff at UNH. University populations present a unique challenge in that there are special, vulnerable, and at-risk populations that may have limited language proficiency; disabilities (i.e., physical, mental, sensory, or cognitive limitations); or experience cultural or geographic isolation. To avoid creating a sense of panic, UNH officials use their notification system "Roam Secure" which is managed by the University Police Department. The system has the ability to reach the student and staff population in an efficient and timely manner. DES, DHHS, and UNH PIOs developed the message. UNH provided additional assistance to find/reach the students that were still on campus at the time of the incident who may not have had access to Roam Secure.

Recommendation(s):

1. Establish protocols for working with alternative forms of notification outside of the current State resources.

Observation 5.3 (Strength): NH officials were able to disseminate critical health and safety information designed to alert the public to clinical symptoms and reduce the risk of exposure to ongoing and potential hazards while protecting the patient's privacy during the incident.

Analysis: All sources of public information and involved departments and agencies made it a priority to protect the privacy of the patient. The patient's name was never released to the public, which helped to ensure the patient's anonymity during and after the response.

Recommendation(s):

1. Review procedures in a Public Information Plan to ensure that the identities of future patients are never released to the public.

Observation 5.4 (Area for Improvement): DHHS did not use social media as an avenue to release information to the public.

Analysis: DHHS does not use social media outlets (such as Facebook, Twitter, and texting) to disseminate prompt and accurate information to the public. The use of social media as an avenue to release information to the public is currently not an accepted form of communication in the State policies, plans, and procedures. During this particular incident, the population most at risk is the generation that depends heavily on the new social media outlets. Increasingly, populations with limited sight and hearing are using social media outlets for communication.

The general population is quickly relying more on social media outlets such as Facebook, Twitter, and texting to receive up-to-date news and press releases and less on conventional media outlets. During the H1N1 outbreak in 2009, public health departments depended on these social media networks to gain access to a younger population, and some college students claim to have received all necessary information through their Facebook and Twitter accounts.

Recommendation(s):

1. Develop social media policies, plans, and procedures for use during emergencies.
2. Establish a social media infrastructure.
3. All Departments and Agencies should investigate the use of social media.

Activity 6: Conduct Media Relations

Observation 6.1 (Area for Improvement): New Hampshire did not continue to provide periodic updates and conduct regularly scheduled media conferences once the remediation phase began.

Analysis: Conference calls were held consistently with media outlets during Phases I and II. Once Phase III: Remediation began; conference calls were no longer conducted. The media was requesting additional information that was not available due to legal reasons. The media was not given answers to their requests, which was frustrating for media outlets.

Recommendation(s):

1. Conduct regularly scheduled media conference calls or briefings during the entire response and demobilization phases.
2. Brief the media on activities even if there is nothing additional to report.

Observation 6.2 (Strength): PIOs monitored media coverage of the event to ensure that information was accurately relayed.

Analysis: DHHS PIOs monitored the traditional media outlets (television, radio, and print) to ensure that information was accurately relayed. In addition to traditional media, PIOs monitored the UNH and Town of Durham websites for issues or help requests. The Joint Information Center (JIC), which was not officially open during the incident, also monitored the State information help line, 2-1-1, for questions and issues.

Recommendation(s):

1. Continue to monitor media outlets during incidents for issues and concerns per the Public Information Response policies, plans, and procedures.

Observation 6.3 (Area for Improvement): Entry teams were unaware of a press conference scheduled for the day of their response.

Analysis: The Incident Commander at the Campus Ministry on Mill Road was not aware of a press conference and informational release at HSEM. ICC and EOC personnel recommended a possible deadline of 11:00 a.m. without consultation with the Incident Commander. The media en route to the Durham Site resulted in the primary Incident Commander transferring site command and leaving the second scene in Barrington where an entry team had just entered the patient's home. No PIOs from Concord were on site to support the ad hoc press response at Mill Road.

Recommendation(s):

1. Consult with the Incident Commander to determine the appropriate time and location of a press conference so it does not interfere with response.

Capability: ENVIRONMENTAL HEALTH

Capability Summary: Environmental Health is the capability to protect the public from environmental hazards and manage the health effects of an environmental health emergency on the public. The capability minimizes human exposures to environmental public health hazards (e.g., contaminated food, air, water, solid waste/debris, hazardous waste, vegetation, sediments, and vectors). The capability provides the expertise to run fate and transport models; design, implement, and interpret the results of environmental field surveys and laboratory sample analyses; develop protective guidance where none exists; and use available data and judgment to recommend appropriate actions for protecting the public and environment. Environmental Health identifies environmental hazards in the affected area through rapid needs assessments and comprehensive environmental health and risk assessments. It works closely with the health community and environmental agencies to link exposures with predicted disease outcomes, provides input in the development of CERC messages, provides guidance on personal protective measures, and advises on environmental health guidelines.

Activity 1: Develop and Maintain Plans, Procedures, Programs,

Observation 1.1 (Strength and Area of Improvement): New Hampshire has identified appropriate environmental health officials and ensured their inclusion in the Incident Command staff.

Analysis: Once the operational role of environmental health was identified as a need, DES was notified of the incident. DES was able to quickly identify and integrate the appropriate staff into the response. Inclusion of the DES official on scene as part of the Incident Command was an appropriate level of leadership and enhanced the overall response capability.

Unfortunately, as previously stated, DES staff was not included in the decision-making conference call that occurred the evening before the initial entry. This oversight resulted in a misunderstanding of the scope of the initial entry on December 26, 2009, including the number of responding agencies, equipment, and sample collection. As has been mentioned, inclusion in the call would have provided the DES Incident Commander with an understanding of the size and scope of the response, and mission change.

Recommendation(s):

1. Continue to identify and train individuals who may be involved in a response, on policies, plans and procedures for responding to emergencies associated with various biological, chemical, and radiological agents.
2. Include all appropriate agencies in the initial notification call-down lists for all hazardous and environmental health incidents, and ensure that notification lists are updated as needed.
3. Include DES staff on the Incident Command organizational chart automatically for all public health emergencies that have an environmental component.

Observation 1.2 (Strength): Coordination of the various elements of the response from Federal, State, and local levels took place on-scene.

Analysis: Several Federal, State, and local agencies participated in the incident with various roles and responsibilities. This could have lead to duplication of response efforts or confusion; however, environmental health was able to mitigate the potential problems with a plan to coordinate the various elements. This was evident during Phase I with the first entry into the United Campus Ministry by the CST and START. Coordination for the first entry was seamless. The professionalism and continued training between the two entities also played a role in the coordination.

Recommendation(s):

1. Continue to review and revise plans as needed to facilitate future coordination.

Observation 1.3 (Area for Improvement): A plan with a checklist for evaluating re-entry and re-occupancy of facilities after anthrax remediation (e.g., homes, educational, institutional, health care facilities) that establishes the evaluation process, assessment criteria, and indicators of safe re-occupation does not exist.

Analysis: It was a challenge for environmental and public health officials at Federal and State levels to delineate criteria to drive the decision about when to re-open the Campus Ministry Building after specific remediation had been carried out. The level of anthrax contamination of the building was very low, and this was different from prior U.S. anthrax decontamination efforts since 2001, where very high levels of anthrax were identified. All testing methods have a lower limit of detection and interpretation of negative test results, which can be open to misinterpretation if not carefully explained and reported. Post remediation testing was performed in this situation to guide public health recommendations.

Recommendation(s):

1. Decisions about building re-entry in a situation like this are quite complex and require careful interpretation of environmental methods, laboratory findings, and public health risks. Officials from all three arenas should continue to work together to make sure that the interpretation is agreed upon and that the message to the public is clear.

Observation 1.4 (Area for Improvement): A written disposal plan was not in place prior to the December 26 sampling event.

Analysis: As has been mentioned previously, the decision to conduct the initial sampling of the United Campus Ministry building was made on Christmas Day, less than 24-hours after the investigation started. Due to the time constraint imposed by the urgency of the situation, as well as, the holiday, a formal planning meeting was not held. As a result, a robust Incident Action Plan, which would have covered all aspects of the pending sampling event, including waste disposal, was not developed. Other factors included the feeling by many of those present at the site that the chance of finding anthrax at the ministry building was very remote, and therefore decon and disposal shouldn't be a problem. Finally, the original scope of the mission involved

only a handful of people doing the entry, and collecting a limited number of samples. A last minute change increased the size and scope of the mission. As a result, the decontamination line remained on site for 5 days, while decisions were made on how best to decontaminated the equipment, what equipment had to be disposed of, and what the disposal options were. During this time period the CST was required to stand guard over the equipment and waste materials.

Recommendation(s):

1. Ensure the development of a robust IAP which clearly defines roles and responsibilities, and which includes a decontamination and disposal section.
2. Ensure that all participants in field activities are actively engaged in all discussions of all aspects relative to the mission that they participate in.

Observation 1.5 (Area for Improvement): A predetermined plan to dispose of the decontamination water was not in existence prior to the December 26 sampling event.

Analysis: Much of the previous discussion from Observation 1.6 is pertinent to the topic of decontamination water also. As stated it was not anticipated that any significant volume of waste water was going to be generated. Nor was it anticipated that the disposal of chlorinated water would be such an issue, primarily due to perception issues. Consequently, disposal of the decontamination water was not addressed until after the water was collected and sitting on site ready for disposal. An agreement was finally reached with a Waste Water Treatment Facility (WWTF), but it required extensive work by DES staff to change the chlorine and Ph levels to a level deemed acceptable by the treatment plant. Despite these changes, the WWTF would not accept the waste water. Ultimately, a DES clean-up contractor disposed of the water and its containers.

Recommendation(s):

1. Ensure the development of a robust IAP which clearly defines roles and responsibilities, and which includes a decontamination and disposal section.
2. Ensure that all participants in field activities are actively engaged in all discussions of all aspects relative to the mission that they participate in.

Activity 2: Provide Environmental Health Support to HazMat Management/Decontamination

Observation 2.1 (Strength): New Hampshire DES and DHHS provided technical assistance, consultation, and support for decontamination operations, re-entry and re-occupancy of the United Campus Ministry.

Analysis: DES and DHHS staff was on hand during each step of the remediation process. Staff worked closely with the Town of Durham, UNH, and United Campus Ministry to determine the best course of action to facilitate re-occupancy of the Ministry as quickly as possible. This included:

- Providing technical assistance and SMEs in the development of the remediation plan

- Facilitating State and Federal resources
- Participating in the identification of a remediation contractor
- Reviewing the contractor clean-up process
- Conducting final sampling post clean up to determine Anthrax levels

The relationships established by DES and DHHS staff with the responders and clients were invaluable. These relationships helped resolve issues and give decision makers a better understanding of the entire response picture.

Recommendation(s): None

Observation 2.2 (Strength): The working relationship and support from EPA was very beneficial.

Analysis: New Hampshire, with the support of EPA, was able to develop a plan for a second sampling event at the United Campus Ministry building, as well as, a remediation plan for that location. The response group used information provided by the EPA research and development team (Triangle Park) to write the clean-up plan used for the Durham, New Hampshire site. Although EPA believed that this allowed New Hampshire to have a plan that would not require a clearance sampling component, the decision was ultimately made by DHHS and NHDES to obtain post remediation samples. It should also be mentioned that EPA, with the assistance of their contractor obtained the second round of samples form the Campus Ministry building, and also the community drums that were handed over to DHHS and NHDES.

Recommendation(s):

1. Continue to maintain and enhance the existing working relationships between the agencies that were involved in this incident, to ensure good communication, and fast and effective response during times of need.

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Chapter 3: Conclusion

The New Hampshire (NH) 2009 Anthrax Incident was a real-time response to the first reported case of gastrointestinal anthrax. This report represents a summary and analysis of the actions. It should be used to further refine policies, plans, procedures, and training for future incident response. Follow-on training and exercises should test specific improvements instituted as a result of this real time event.

On December 24, 2009, NH activated the full capabilities of its State emergency management and public health response forces after receiving notification from Massachusetts General Hospital that a patient transferred from a New Hampshire hospital tested positive for gastrointestinal Anthrax.

The response efforts by NH were categorized into three phases, each with distinct time periods and actions:

- Phase I: Initial Entry (December 24–26, 2009); Initial Entry focused on the notification of anthrax to the response partners, determination of incident command and legal responsibilities, identification of the possible source, and initial environmental sample collection.
- Phase II: Second Entry (December 27, 2009 to January 7, 2010); Second Entry continued to focus on identification, contact, and interviewing of persons who attended the drum circle in which the patient was said to attend and possibly become infected.
- Phase III: Remediation (January 07, 2010 to April 16, 2010); Remediation focused on developing and executing a remediation plan for the Ministry, drum and decontamination material disposal, and lab analysis.

As stated earlier, New Hampshire activated the full capabilities of its emergency management and public health response forces to address the event. The primary areas of focus—namely epidemiological surveillance and investigation, intelligence and information sharing and dissemination, laboratory testing, emergency management, and emergency public information and warning—remained consistent throughout the event. The information received during the After Action Review process highlighted strengths and areas for improvement in these primary areas. Using the Target Capabilities List (TCL), this report aligns observations to their associated capability area in the TCL to provide a road map to build on strengths, enhance identified areas for improvement, and build required capabilities.

The major strengths are as follows:

- Sampling procedures were consistent with hazardous material guidelines.
- The sampling teams worked efficiently and effectively together demonstrating the benefit of co-training and exercise.
- The Departments worked together in an efficient and timely manner to establish command and control during the first ever case of gastrointestinal anthrax in NH - and the U.S.

- Staff was empowered to make decisions during the investigation and sampling process that utilized new techniques or non traditional resources (i.e. Facebook) that aided the investigation.
- Public information officers from different departments and agencies worked together to create a unified message and voice to the public.
- Communication systems were established that were dependable and useful to the responders.
- NH DHHS worked with contacts and primary care providers to provide accurate and timely health recommendations.
- Subject matter experts aided the investigation and assisted staff with identification, record trace back, data review and infectious disease treatment.

The major recommendations related to these improvement areas are as follows:

- There are no mutual aid agreements in place to backfill the New Hampshire (NH) Department of Health and Human Services (DHHS) staff for prolonged operations.
- Plans and procedures were not in place to address the legal challenges encountered in the sampling of privately owned drums.
- A new lab testing method for environmental detection of anthrax was recently validated by a group of LRN laboratories, but CDC had not yet released this method to LRN labs for use.
- Durham officials were not informed as they should have been during the initial stages of the incident.
- Clarification of what constitutes the “activation” of the ICC is needed.
- Responders were not able to verify that all agencies, departments, and responders serving directly or indirectly were able to communicate via WebEOC or that WebEOC was updated as often as needed.
- Lab results were not reported back to the on-scene Incident Commander.
- Regional response teams have difficulty recouping costs for response events.

This After Action Report analysis of capabilities is intended to provide the basis for continued development of plans, policies, and procedures for response to a public health emergency. Participants discussed their commitment and intent to support the recommendations in this report, the responders and the community. It should be noted the staff approached this situation with professionalism and a commitment to protect life and property. This commitment of the participants provides a strong foundation for future coordination, planning, and overall emergency preparedness within New Hampshire.