

**Public Health Aspects of Chemical Terrorism Course
Mackinaw City, August 23, 2005
Lansing, August 25, 2005**

Morning Water Exercise Responses

Note: Due to time constraints, some questions were eliminated from Scenes 1 & 3.

Scene 1 - Scenario

On Friday July 17th, 1:30pm, Ten people have come to Zenith General Hospital's emergency department, or ED, all exhibiting the following symptoms: dizziness, headache, difficulty breathing, cardiac arrhythmias, and reddening of the skin. ED staff note that all patients are from The Village, MMU. Zenith General reports a possible illness outbreak to the Pontiac County Department of Public Health. The report indicates that patients all either work or attend classes in the "The Village" on the campus of MMU. **By 3:30pm**, over 20 patients have arrived at the hospital emergency room complaining of similar symptoms, all from the "Village". The ED physician calls the health department and says the presumptive diagnosis is cyanide poisoning.

Scene 1 - Questions

Question 1: *What initial actions will be taken by the Health Department and the Hospital?*

Health Department:

Activate the EOC

Set-up incident command

Activate Response Team

Activate an Investigation Team, including:

 Determine the source of the information implicating cyanide.

 Start an epi investigation

 Develop questionnaire for conducting interviews

 Interview cases and contacts

 Determine the scope of the event

Discuss the preliminary diagnosis and confirmatory actions with hospital

Food issues

 Shut down cafeteria

 Sample food

Shut down systems

Send PH representative to scene

Secure the area – close off village

Move people upwind

Evacuate Village and Isolate

Call in MOUs

Procure Equipment:

- Appropriate Decon
- Obtain respiratory Protection

Make the following notifications and/or HAN alerts

- Neighboring Health Departments
- Fire Department
- Physicians Offices
- Hospitals
- University
- County EMD
- Local Health Department staff
- HazMat
- Law Enforcement
- OPHP

Assess ChemPack Stocks

Hospital Actions:

- Call LHD
- Triage victims
- Treat victims
- Inventory cyanide antidotes

Confirm diagnosis, including:

- Blood/Urine testing of patients
- Activate the Hospital Emergency Response Team
- Control access to the Emergency Department
- Deal with excess patient capacity (Diverting patients)
- Restrict other emergencies from ED
- Distribute PPE for first receivers
- Activate ChemPack/MEDDRUN
- Set up decon
- Activate external disaster plan

Obtain cyanide information, including:

- Possible sources of cyanide
- Toxicity
- Consult MSDSs
- Obtain fact sheets
- Contact LEPC for information about cyanide at the campus

Local Health Department and Hospital Actions:

- PIO start planning information
- Activate JIC
- Implement response plan – disaster protocols
- Would you evacuate or shelter in place?

Question 2: *What initial actions will be taken by Environmental Health staff?*

Form a response team

Epidemiology related actions, include:

- Begin epi investigation
- Develop questionnaire
- Conduct epi interviews
 - Take food histories of cases
- Conduct additional case finding
- Determine impacted area and boundaries

Send staff to the EOC

Advise hospital to save clinical samples for analysis

Investigate scene, including:

- Assess the threat and limit exposure
 - Contain the area
 - Close the food operations
- Procure testing equipment
- Take water samples
- Take food samples
- Take air samples (Analyze air supply, this person to use PPE)
- Investigate systems, and the water supply, including the potential for crossed connections

Contact the following:

- The "State"
- MDA
- DEQ

Ensure that the hospitals are obtaining clinical samples

Activate the HazMat team

Coordinate with:

- Hospitals
- Other agencies
- The "State"
- The "Locals"
- Adjacent counties
- Labs
- Media
- Public
- Personal Health and CD Staff

Obtain Fact Sheets and consult the following for further information:

- MSDS
- Cyanide research

Research the symptoms of cyanide poisoning

Involve the PIO in current activities and gather info for media communications

Establish an EOC

Do not assume all information given is correct

Question 3: *How long will it take to form a response team? Who will be on it?*

How Long:

Already did it

The amount of time needed to form the team is variable.

It depends on how and by whom

Depends on time of day

Almost immediately

Minutes

10-15 minutes

15 minutes

15-30 minutes

30 minutes

30 minutes -1 hour 1 hour

1-2 hours

Who's on it:

District/County Supervisor

Health Officer

Safety Officer

Public Information Officer

Chief Financial Officer

Medical Director

Environmental Health Director

Nursing Director

Emergency Preparedness Coordinator

Communicable Disease Coordinator

Regional Epidemiologist

Epidemiologist

Communicable Disease/Public Health Nurses

Environmental Health Food and Environmental Health Water (sanitarian)

Secretaries

Logistics Chief

Operations Chief

Planning Chief

HazMat

Poison Control Center

Lab

Entire Health Department staff

Question 4: *What other agencies should be notified? How will they be notified and by whom?*

Agencies to be notified:

Michigan Department of Agriculture

Department of Environmental Quality

Michigan Department of Community Health

Finance, Logistics, Operations, and Planning

Law Enforcement
Emergency Medical Services
Fire Department
HazMat
University Officials
Emergency Operations Center
Environmental Protection Agency
Federal Bureau of Investigations
Physicians' Offices
Hospitals
Center for Disease Control and Prevention
Poison Control Centers
Health Department
Public Safety
Public Information Officer
Chemical Terrorism and Emergencies Unit
County Commissioners
Michigan State Police
Medical Community
Veterinarians
Local Emergency Planning Committee
Mutual Aid Agencies
Campus Safety and Maintenance
Legal
Department of Public Works
Regional Medial Coordination Center
Red Cross
Family Independence Agency

How will they be notified:

Use the HAN
Internal Phone Tree
Fax (broadcast)
E-mail
Contact Lists
Emergency Operations Center
800Mhz

Who will notify them:

No Response

Question 5: *Does this incident necessitate activation of the health department's ECC(Emergency Command Center or local term)? Why or why not? If so, who's staffing the ECC? Day 1 only.*

Activate the ECC:

Yes

No – small incident

Possibly

Who's staffing it:

Health Officer

Medical Director

Nursing

Emergency Preparedness Coordinator

Public Information Officer

Available staff from the pre-defined list

Administrative manager

Scene 2 - Scenario

Friday July 17th, 10:00 PM. The ED has notified the health department that cyanide poisoning has been confirmed in patients, one of whom died, that 35 additional individuals have presented at the ED, all from the Village, and that the ED has notified the police. The health department has conducted preliminary epi interviews with 20 patients: there does not appear to be any association with food, but drinking water on campus is common to most cases. The environmental health staff on-call for the weekend has been dispatched to campus to look around. Health department staff on site at the hospital and on campus call to confer on how to deal with the local police, who are also at both sites.

Scene 2 - Questions

Question 1: *What samples should be collected by the health department and by the hospital? Where would they be sent?*

Local Health Department would collect:

Water samples

Used cups and containers

Food samples

Air samples

Soil samples

Hospitals would collect:

Blood

Serum

Urine

Body Fluid

Vomit

Stool

Samples would be sent to:

- Hospital lab – drug tox screen
- State Lab (with option to forward to CDC)
- Out of the area
- Certified Lab - unspecified
- Regional Lab - unspecified

We would coordinate with MDCH on where to send and what to collect

On scene testing would be conducted by:

- Civil Support Team
- Hazmat

Question 2: *What additional information needs to be collected from the patients? From others potentially exposed?*

First we would set up a case definition

Additional patient information:

- Food and drink history
- Date and time of symptom onset
- Activity and travel history
- Details on living arrangements and location(s)
- Their specific location in the implicated building
- Who were you with (recent contacts)

Question 3: *What are potential sources of conflict with Laws Enforcement? Day 1 Only.*

Differences in investigation practices and techniques

The decision whether to evacuate or leave in place

The preservation of the crime scene verses the need to initiate and conduct the Public Health investigation

Who controls the chain of custody

Who is in charge

Access to facility may be limited

Question 4: *How would Public Health work with the media in a public notification process?*

Initiate our Public Communication Plan

Utilize the Joint Information Center

Public Information Officer would coordinate public health information with the media

Schedule a press conference

Provide information to media on exposure, symptoms, long-term health effects

Provide information to the staff

Dedicate staff to hotline and web page

Inform the media of our current knowledge, actions taken, and that the EOC is open.

Provide scheduled briefings and press conferences

Distribute fact sheet

Use subject matter experts to assist in communicating messages
MIHAN Alert
Designate one person to field calls and provide information

Question 5: *What community containment measures should be taken?*

Stop water ingestion
Cut off the water supply
Issue drinking water advisories
Supply an alternative source of water
Coordinate with the Red Cross to bring in fresh water
Continue investigation
Check for potential cross contaminations in the water system
Try to find the water source and assess whether the source is a type I or II supply
Assess the environment for contamination
Monitor the air quality
Evaluate water source
Check the water supply
Contact DEQ
Bring in the Department of Public Works
Shut down the university labs

Question 6: *How will the hospital manage the influx of patients?*

Activate emergency plans
Triage incoming patients
Activate Acute Care Centers and Neighborhood Emergency Help Centers
Call in extra nurses

Scene 3 – Scenario

July 18th, Noon: The DEQ lab has confirmed that cyanide has been found in the MMU's water supply. The FBI has been called in. The FBI informs the health department that a letter has been delivered to the Zenith City Police Department stating “there’s a reason people are getting sick” at Mid Michigan University. Furthermore, the FBI informs the health department that on July 17th, one of the university’s water supply employees noted that two men from MMU’s usual chemical supplier, dressed in work clothes and wearing identification badges, drove a white delivery van through the delivery gate. He did not suspect any unusual activity. However, tire tracks were later noted leading to and away from the wellhead. The suspects have not been apprehended. The FBI has taken soil samples around the wellhead for testing.

The environmental health staff reported that, due to a broken pipe, a large area of water damage has been found in one of the main buildings in the Village.

Scene 3 - Questions

Question 1: *What type of public notification would the water supply issue now?*

No documented responses.

Question 2: *What is the role of public health at this point?*

No documented responses.

Question 3: *Does the fact that the poisoning was intentional change the investigative activities of the health department or information provided to the public by the health department?*

No documented responses.

Question 4: *How can confidence be restored?*

Make a public announcement

Involve state and FBI in press release

Document testing

Release the sampling data

Discuss the length of time CN is stable in water

Advise on safe alternative water sources

Get DEQ involved

List the measures taken to protect the water supply

Demonstrate confidence in the water supply

Demonstrate confidence after remediation through testing

Question 5: *Who ensures that contaminated water is no longer present in the water system?*

Type I – DEQ

Type II or III – Environmental Health

Health Department and/or DEQ

Owner or operator of the supply well involved

A certified water operator

Question 6: *What measures need to be taken to clean up the contaminated building where there was water damaged from the broken pipe and how do those measures involve public health?*

Private industry or contractor to conduct clean up

LHD to monitor the clean up progress

Flush out the contaminated water from the system

Repair damage

Can other sources be contaminated???