National Laboratory Training Network

Teleconference

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Being Prepared: Having in Place a Continuity of Operations Plan (COOP)

Norman A. Crouch, Ph.D.
Director
Public Health Laboratory
Minnesota Department of Health

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Laboratory Role in Health Protection

Core Functions:

- Screening newborns for heritable and congenital disorders
- Detecting common, rare, and emerging health threats
- Responding to biological, chemical, and radiological emergencies
- Diagnosing infectious diseases of public health importance
- Monitoring environmental matrices for hazardous chemical agents

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Laboratory Preparedness

Public Health Laboratories Expected to:

- Respond to natural, accidental, or intentional disasters
- Maintain critical operations during disasters that impact:
  - Laboratory facilities
  - Laboratory staff

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Public Health Laboratories

Importance:

"Public health laboratories are to public health what police departments are to public safety . . . watching for trouble, prepared to respond."

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Purpose of COOP

In Response to a Disaster:

- Assure continuation of essential laboratory functions
- Assure laboratory can act rather than just react
- Assure laboratory meets demands dictated by the disaster

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Hurricane Katrina

Redefining Laboratory Preparedness

at the

Louisiana Public Health Laboratory[1]

[1] Selected slides used with permission from a presentation given by Dr. Stephen Martin, Director of the Louisiana Public Health Laboratory, at the 2006 Annual Meeting of the Association of Public Health Laboratories.

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Pre-Hurricane Actions

- Secure lab facilities and equipment within areas that may be impacted
- Prepare to have staff available in the Emergency Operations Center
- Prepare to move staff, supplies, and equipment to non-impacted areas
- Permit remaining lab staff to assist with Health Department activities

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Katrina: Friday, August 26th

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Lab Actions: Friday, August 26th

- Main lab in New Orleans (4th, 7th, and 8th floors of State Office Bldg)
- Verified communications – recall lists
- Checked equipment
  - Pagers
  - Cell phones
  - State police radios (800 MHz)
- Secured equipment not in use (powered down, covered)
- Arranged to return next day to secure equipment left operating
- Allowed staff to make personal emergency plans

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Katrina: Saturday, August 27th

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Lab Actions: Saturday, August 27th

- Managers and supervisors returned to New Orleans lab
- Shut down remaining operational lab equipment
- Removed files needed for short term operation
- State Emergency Operations Center activated
- Verified building security with capitol police
- Lab secured and closed at 2 PM

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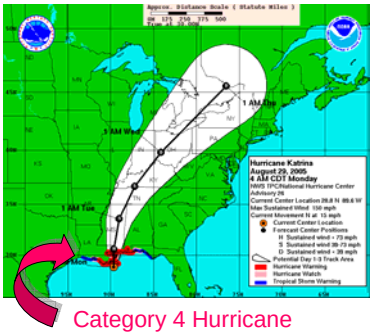
Katrina Hits: Monday, August 29th



Category 4 Hurricane

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Lab Actions: Monday, August 29th

- Lab director and assistant director at the Shreveport Regional lab
- 8 AM – lost communications
  - Land lines, cell phones, wireless internet, and pagers
  - 800 MHz radios all needed for evacuation and rescue
- 1 PM – first reports of levee breaches and widespread flooding

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Lab Actions: Monday, August 29th

- Main New Orleans and Amite Regional lab where 100% out of service
  - No phone, water, or electricity
- Represented 70% loss of public health lab space and equipment
- Only about 10% of New Orleans staff checked in – most evacuated

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Post-Hurricane Expectations

LA-PHL System:

- Resume all pre-hurricane testing
- Provide microbiological testing of all potable water supplies
- Provide testing for enteric and respiratory pathogens 24/7 for:
  - Evacuees in shelters
  - First responders
- Provide expanded arbovirus testing in flooded areas:
  - West Nile virus (WNV)
  - St Louis encephalitis virus (SLE)
  - Eastern equine encephalitis virus (EEE)

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Immediate Post-Hurricane Issues

- Relocate testing from the main New Orleans lab to other labs
- Assess the status of the New Orleans and Amite labs
- Find equipment to replace that unavailable at the New Orleans lab
  - To reestablish testing capacity
  - Especially real-time PCR and mass spectrometry
- Replace reagents and supplies
- Obtain CLIA, FDA, and EPA approval to move testing to other labs
- Locate laboratory staff
- Acquire pathology support

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Immediate Post-Hurricane Priorities

- Reestablish microbiological testing of drinking water
  - About 2 million without potable water
  - Temperature of > 90 degrees with humidity about 90%
- Reestablish newborn screening
- Reestablish real-time detection of:
  - Enteric pathogens
  - Respiratory pathogens
  - Arboviral pathogens

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September 5th: View from Lab

New Orleans

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Assistance to the LA-PHL

- Iowa PHL – newborn screening
- Texas PHL – tuberculosis and drinking water testing
- Arkansas PHL – drinking water testing
- Alabama PHL – LRN/bioterrorism testing
- USEPA Houston lab – trace metal testing for drinking water
- USEPA mobile labs – drinking water testing
- LSU clinical labs – variety of clinical testing and pathology services
- FDA mobile labs from Arkansas – water testing to reopen fisheries
- Others

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Evaluation of Pre-Hurricane Plan

- Communications were disrupted or failed
- Staffing issues resulted from many displaced, homeless employees
- Support from FEMA and EMAC was hard to access
- Not enough redundancy for critical services, especially communications
- Time frame of the plan was too short, only one week
- US Postal Service ceased to function in affected areas

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Lessons Learned from Katrina Event

- Need to have short term and long term plan
- Need to assure effective, reliable communication systems
- Need to assure emergency power is adequate and sustainable
- Need to back up critical laboratory records
- Need to have senior lab staff report immediately to a secure location

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Elements of a COOP

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Purpose of COOP

Pre-Plan to Address:

- Threat to or incapacitation of the laboratory facility
- Need to relocate selected lab personnel or functions
- Need to assure continuation of lab's essential functions

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Objectives of COOP

- Ensure continuity of essential lab functions during crises
- Protect essential facilities, equipment, records, and other assets
- Reduce or mitigate disruptions to lab operations
- Prevent loss of life and minimize damage
- Achieve timely and orderly reconstitution of normal operations
- Ensure and validate COOP readiness through training/exercising

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Elements of COOP Planning

- Assess lab vulnerability
- Define trigger for activating plan
- Establish incident command structure
- Identify recovery teams
- Determine essential lab functions
- Identify alternative lab site
- Pre-arrange assistance from other labs
- Pre-position supplies and workstations
- Create a “Go Pack”

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Planning: Lab Vulnerability

- Scenarios which could threaten or incapacitate the lab

Air handling failure	Snow and ice	Hazardous chemical release
Bomb threat	External sabotage	Sewer failure
Explosion	Electrical failure	Steam failure
Civil disturbance	Computer failure	Severe storm
Fire	Telephone failure	Mischief
Earthquake	Flooding	Accreditation loss
Hurricane	Labor dispute	Epidemic disease
Tornado	Workplace violence	Terrorist attack
Severe wind	No state budget	Hazardous biological release

- Assess the lab’s vulnerability for each (e.g., security)
- Level of risk for any threat is used to guide planning

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Planning: Triggers for Activation

- External or internal event closes lab to normal activities
- Area closed to business because of catastrophic event
- Action to take based is on COOP team assessment of situation
- Need to pre-establish trigger points based on lab vulnerability

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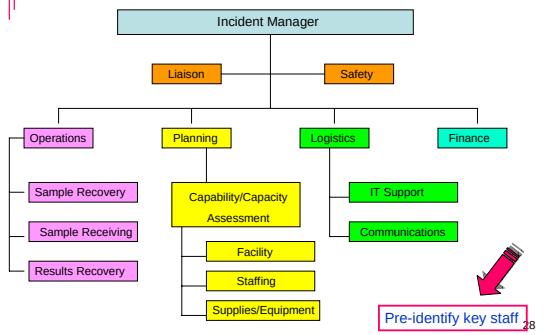
Planning: Incident Management



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Planning: Recovery Teams

- Pre-identify special COOP teams as needed
- Each team responsible for a specific aspect of recovery
- Examples:
  - Management team
  - Facility evacuation team
  - Relocation team
  - Alternate site preparation team
  - Operations, communications, and computer team
  - Administration and logistics planning team
  - Salvage and recovery team
  - Security coordination team

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Planning: Essential Lab Functions

Categories of Function to Consider:

Essential
- Must *maintain* in house or at an alternate site
- Could *outsource* to another lab

- Should *suspend* for duration of emergency

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Planning: Essential Lab Functions

- List the overarching goals of the lab
  - Provide guidance and testing to control *infectious disease*
  - Provide guidance and testing to support *environmental health*
  - Provide guidance and testing to support *maternal and child health*
- For each goal, list ALL of the lab functions

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Planning: Essential Lab Functions

- Categorize each lab function based on the impact if NOT continued
  - Tier 1 – highest priority
  - Tier 2 – medium priority
  - Tier 3 – lowest priority
  - Tier 4 – non-essential

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Planning: Essential Lab Functions

- Rank order essential functions based on TIME operation can go without
  - AAA
  - AA
  - A
  - B
  - C
  - D

Criticality Codes

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Planning: Essential Lab Functions

- Delineate tasks required to accomplish each function identified
- Delineate resources required to accomplish each task identified

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Planning: Identify Alternative Lab Site

Issues to Consider:

- Does the alternative lab have the required certifications
- Does the alternative lab have necessary security
- Is the alternative lab LRN and Select Agent approved
- What will be the financial arrangement
- Will there be liability issues to address
- Will the alternative lab retain or return tested samples
- What are the risks in using a particular lab

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Planning: Identify Alternative Lab Site

Issues to Consider:

- What essential tests need to be outsourced
- What methods of testing will the alternative lab use
- How will the results be reported by the alternative lab
- What will be the expected turn-around times for results
- Is the alternative lab's capacity for the testing sufficient
- How will the specimens or samples be transported
- What are the advantages/disadvantages of particular labs

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Planning: Identify Alternative Lab Site

- Consider local reference labs for essential diagnostic testing
- Create a database for each possible alternative lab
  - Contact information
  - Capabilities
  - Capacities

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Planning: Arrangements for Assistance

- Pre-arrange assistance through formal documents:
  - Memoranda of Understanding (MOU)
    - Short term assistance
    - May provide defined services
    - Perhaps no funds involved
  - Memoranda of Agreement (MOA)
    - Long term assistance
    - Will provide defined services
    - Funding agreed upon

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Planning: Arrangements for Assistance

- Pre-arrange assistance through formal documents:
  - Contracts
    - Routine assistance
    - Long term
    - Funding established
  - Emergency Management Assistance Compact (EMAC)

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Planning: Supplies and Workstations

- Determine number of workstations needed for off-site
- Create an inventory for each station accessible off-site
  - Computer, printer, fax machine
  - Phone
  - Internet access
  - Paper, pens, etc.
- Workstation-specific materials such as:
  - Packaging and shipping supplies
  - Forms
  - Barcode reader, etc.

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Planning: "Go Pack"

- Have pack located at an off-site location[1]
  - Hard copy of the COOP
  - Electronic copy of the COOP on a jump drive
  - Copy of relevant standard operating procedures
  - Contact information for all special COOP staff
  - Contact information for all non-COOP staff

[1] May also be maintained on an external website

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Operations for COOP

- Phase 1: Activation and relocation
- Phase 2: Alternate facility operations
- Phase 3: Recovery and reconstitution

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Phase 1: Activation and Relocation

- COOP should include all activation and relocation procedures
- First determine extent of emergency and level of activation needed
- Decision to activate made by special lab COOP team base on:
  - Lab capabilities remaining
  - Length of time lab is expected to be down
  - What safety and security issues exist
- Conduct internal and external notifications
  - Internal: COOP and non-COOP staff
  - External: Health Officer, clients, couriers, alternative labs, etc.

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Phase 1: Activation and Relocation

- Devolution:
  - COOP must consider worst-case scenario
  - If COOP leadership team is incapacitated
  - Plan for transferring all essential functions to a different site

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Phase 2: Alternate Facility Operations

- Determine essential function capabilities/capacities needed
- Identify appropriate alternate site from COOP database
- Activate pre-determined arrangements for assistance from site
- Assure vital files, records, and databases are secure and usable
- Determine what testing is complete and needs to be reported
- Notify submitters about samples being tested before event happened
  - If testing can be completed
  - If samples will be referred to an alternate lab for testing
- Implement mechanism for reporting test results by alternative lab

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Phase 3: Recovery and Reconstitution

- Returning to the original facility, if possible
- Replacement of the original facility, when necessary
- Develop a formal After Action Report to assess COOP

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Conclusions

- COOP is a critical document to assure essential functions
- Many examples of past need
- Our *public health labs need to be prepared*
- APHL Board of Directors
  - Need for all public health laboratories to develop a COOP
  - Emergency Preparedness and Response Committee charge
  - Guidelines for COOP development will be forthcoming

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Current Status of COOP

State Public Health Laboratories:

Laboratory has a COOP in place	19
Laboratory is part of state COOP	14
Laboratory has no COOP	17 (34%)
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Public Health Laboratory Issues in Brief:
Bioterrorism Capacity, May 2006

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Post Teleconference Information

- Participants need to go to www.cdc.gov/phtnonline to register, complete an evaluation and print a CEU certificate.
- Course verification code: **COOP**
- CA and FL CEUs are available and can be requested on the evaluation form.
- CEUs are available until November 15, 2006.

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