Building Local Response Capacity to Protect Families from Emerging Health Threats
Continuing Education Information

Continuing education: www.cdc.gov/getce

- After creating a TCEO account, click the “Search Courses” tab on the left and use “Public Health Grand Rounds” as a keyword search.
- All PHGR sessions eligible for CE should display, select the link for today’s session and then Continue button. Course Access Code is PHGR10.
- Issues regarding CE and CDC Grand Rounds, email: tceo@cdc.gov

CDC, our planners, presenters, and their spouses/partners wish to disclose they have no financial interests or other relationships with manufacturers of commercial products, suppliers of commercial services, or commercial supporters. Planners have reviewed content to ensure there is no bias. Content will not include any discussion of the unlabeled use of a product or a product under investigational use. CDC did not accept commercial support for this continuing education activity.
Today’s Speakers and Contributors

Christine Kosmos, RN, BSN, MS
- Oscar Alleyne
- Jade Anderson
- John Anderton
- Lillian Ansley
- Wanda Barfield
- Eric Carbone

Muntu Davis, MD, MPH
- Tom Clark
- Amanda Cohn
- Paula Eriksen
- Brenda Holmes
- Peggy Honein
- Princess Ladson

Roberta DeBiasi, MD, MS
- Blanca Lapointe
- Luis Luque
- Steve Mann
- Stacey Martin
- Alicia May
- Kate Noelte

Nicole Fehrenbach, MPP
- Anita Patel
- Kara Polen
- Angie Robertson
- Stuart Shapira
- Nga Vuong
- Michelle Walker

Acknowledgments
- D.C. and Maryland Departments of Health, Division of Infectious Diseases Epidemiology
Building Local Response Capacity to Protect Families from Emerging Health Threats
CDC’s Role in State, Local, Tribal, and Territorial Public Health Preparedness and Response

Christine Kosmos, RN, BSN, MS
Director
Division of State and Local Readiness
Center for Preparedness and Response, CDC
Public Health Emergency Preparedness (PHEP) Program

Evolution of the PHEP Program

- Events of 9/11 exposed the lack of readiness at the state and local level for response to intentional threats

Intent of the PHEP program is to ensure state and local public health agencies are prepared and ready to respond to any event that threatens the health and safety of their community

- PHEP builds state, local, tribal, and territorial (SLTT) preparedness and response capability
CDC Public Health Response Framework

SLTT: State, Local, Tribal, and Territorial Public Health Departments

SLTT
- Pandemic Influenza
- Natural Disasters

CDC Center for Preparedness and Response
- Anthrax
- Plague
- Emerging Infectious Diseases
- Radiation & Nuclear Emergencies
- CDC Experts
Public Health Emergency Preparedness (PHEP) Program Operations

- Public Health Preparedness Capabilities: National Standards
- Threat-Specific Planning
- PHEP Cooperative Agreement Funding
- Response Assistance for Public Health Emergencies
### Select PHEP Program Accomplishments

<table>
<thead>
<tr>
<th>PHEP Capability Standard</th>
<th>SLTT Demonstration of Capability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed Public Health Emergency Management expertise</td>
<td>Trained public health first responders in incident command and public health response</td>
</tr>
<tr>
<td>Adopted national standards for Incident Management</td>
<td>Standardized, scalable response systems that can effectively manage public health response and ensure coordination with other response partners in the community</td>
</tr>
<tr>
<td>Increased capacity for Rapid Threat Detection</td>
<td>Network of public health labs capable of rapidly detecting and characterizing biological and chemical threats</td>
</tr>
<tr>
<td>Improved capacity for Medical Countermeasure Dispensing and Distribution</td>
<td>Delivery of lifesaving medicines and medical supplies during an emergency</td>
</tr>
<tr>
<td>Improved Risk Communication to the Affected Population</td>
<td>Deliver credible information to the public regarding self-protective measures, thereby reducing risk to families and communities</td>
</tr>
</tbody>
</table>

PHEP: Public Health Emergency Preparedness
SLTT: State, local, tribal, and territorial public health
Snapshot of National CDC Responses

2005 - World Trade Center & Anthrax Attacks
2009 - Hurricanes Gustav & Ike
2010 - Hurricane Alex & North Dakota Flooding
2011 - Hurricane Irene
2014-2015 - Hurricanes Isaac & Sandy
2017 - Zika Virus

2001 - Hurricanes Katrina & Rita
2008 - H1N1 Pandemic Influenza & North Dakota Flooding
2012 - Ebola & Botulism Outbreak
2016 - Hurricanes Harvey, Irma & Maria

*Not shown above: Frequent small scale responses
Other CDC Programs and Resources Available To Support Preparedness and Response

Children’s Preparedness Unit
Reproductive Health Emergency Preparedness Training Course
Pandemic Influenza Planning, Preparedness, and Response

NIOSH Emergency Preparedness and Response: Worker Resources
Emergency Partners Information Connection
Clinical Outreach and Communication Activity
Response Support

- **State Coordination Task Force (SCTF)**
  - State, local, and territorial coordination
  - National partner communication
  - Connect jurisdictions with CDC subject-matter experts

- **Public Health Crisis Response Cooperative Agreement**
  - Mechanism to expedite CDC emergency funding to impacted jurisdictions
2014–2015 Ebola Virus Disease Response Examples

Active Monitoring

26,000+ travelers monitored since 2014

Hospital Readiness

Secured personal protective equipment to provide for 250 days of patient care

Funding

Approximately $165M of PHEP Ebola supplemental funding

PPE: Personal protective equipment
PHEP: Public Health Emergency Preparedness
Zika Virus Disease Response

Community Training to Decrease Mosquito Breeding Sites

Zika Prototype Prevention Kit (ZPK)

More than 8,000 ZPK Delivered to Puerto Rico
State and Local Readiness
www.cdc.gov/cpr/readiness
Protecting Families from Emerging Health Threats
Local Public Health Emergency Preparedness and Response Activities

Muntu Davis, MD, MPH
County Health Officer
Los Angeles County Department of Public Health
Presentation Outline

- Our mission
- Public health practice
- Woolsey wildfire
- Public health actions to protect and educate families
Los Angeles County Department of Public Health Mission: To protect health, prevent disease, & promote health and well-being

Our focus is on the population as a whole
Four core activities that summarize public health practice – how we do our work

1. Surveillance → The 5 Ws (What, Who, Where, When, Why?)

2. Disease Control & Prevention → How to interrupt and prevent the spread and reduce risk of illness

3. Communication → Messages to the 3 Ps (Providers, Public, and Policymakers)

4. Resource Coordination → Work with others to effectively manage all of the above
The work is directed and supported by staff with diverse set of skills, expertise, and training

- Administrative Support Workers
- Community Workers
- Doctors
- Epidemiologists
- Environmental Health Specialists
- Health Educators
- Information Technology Specialists
- Occupational Health Specialist
- Operations Support Workers
- Public Health Nurses
- Public Health Investigators
- Microbiologists
- Nutritionists
- Researchers
- Veterinarians
On November 8, 2018, the Woolsey fire ignited and burned in Ventura and Los Angeles Counties for 13 days before containment.

Here’s where the Woolsey fire burned through the hills of Southern California in the first few days...

... a total of 96,949 acres burned.

Evacuees filled shelters, stayed with friends and family and awaited news of their homes while 3,242 responders worked to gain control

Over 250,000 people evacuated

Structures Damaged: 364

Structures Destroyed: 1,643
Public Health surveillance started at the beginning of the fire and with the response to it. Some examples include:

- Unhealthy air quality in areas around and downwind of the fire
- Evacuees gathering, potentially staying, in locations not designed to safely meet basic daily needs
- Risk of perishable food in affected homes and restaurants spoiling
- Planned (and unplanned) power shutoffs, impact on treated water systems
After determining the 5Ws (Who, What, When, Where, and Why?), we, at the public health department, determined what actions were needed to protect health and the environment.
Public Health communicated with the 3 Ps about actions needed to protect health and the environment

**Public**

- Wildfire Smoke Advisory
  - Who is at greatest risk?
  - How to protect yourself
    - Use and safety of masks
    - Limit outdoor activities (for public and schools)
  - Where to get updates

**Policymakers**

- Limit outdoor activities of field staff
- Mask Guidance to Protect from Wildfire Smoke or Ash
  - Answered questions about the use of N95 respirators* during wildfires

---

*N95 Respirators: a respiratory protective device designed to achieve a very close facial fit and to filter at least 95% of airborne particles. They are not designed for children or people with facial hair because a proper fit cannot be achieved for them.

3Ps: Providers, Public, and Policymakers
Public Health communicated with the 3 Ps about actions needed to protect health and the environment.

**Public**
- Offered immunizations
  - Influenza (flu) at shelters (fires occurred mid-flu season)
  - Tetanus booster at Disaster Recovery Centers
- Health Fact Sheets
  - Returning Home After...
  - Mental Health & Stress after an Emergency

**Policymakers**
- DPH Environmental Health inspected each shelter to assess for environmental and food safety concerns
- DPH coordinated with other government agencies inside the response structure
- Resources needed for mental health impacts
Some actions done in coordination and in collaboration with other departments

- **Public**
  - Health Fact Sheets
    - Cleaning Smoke & Soot
    - Water Storage Tank Disinfection
    - Food Safety After a Power Outage
  - Mental Health & Stress after an Emergency *(with Dept of Mental Health)*
  - Swimming Pools After a Fire *(with Public Works and Vector Control)*
  - Trash and Fire Debris Removal *(with Public Works)*

- **Policymakers**
  - Health Officer Order prohibiting the unsafe removal, transport, and disposal of fire debris

- **Providers**
  - Joint Health Advisory: Identifying and Managing the Mental Health Impacts of the Woolsey Fire on Residents and First Responders *(with Dept of Mental Health)*
Some lessons learned...

- People need and want to know...
  - What to expect
  - What they can do
  - Where to get help

- Policymakers need and want to know...
  - What to expect
  - What they can do
  - Where their constituents can get help

- The key is to coordinate and collaborate with others...
  - Avoids confusion
  - No one entity can do or know it all
  - Helps families recover and rebuild faster
Partnering with Health Professionals to Respond Locally

Roberta DeBiasi, MD, MS
Chief, Division of Pediatric Infectious Diseases
Children’s National Health System (CNHS)
Professor, Pediatrics, Microbiology, Immunology and Tropical Medicine
George Washington University School of Medicine, Washington, DC
Meet “Sam”

6-month-old boy presenting to emergency department

- Day 1: Fever
  - Some upper respiratory symptoms
- Day 2: Diffuse erythematous rash
- Day 4: Abruptly stopped using left arm
- Day 3: Referred to emergency department
Impression: Cervical polyradiculitis and enhancing focal lesion within the mid-left cervical spinal cord (e.g., inflammation in his spinal cord, on the left side, in the neck region)
CDC Acute Flaccid Myelitis (AFM) Case Definition

**Acute onset flaccid limb weakness**

**Confirmed AFM Case**

- MRI findings of spinal cord lesion largely restricted to gray matter and spanning one or more spinal segments

**Probable AFM Case**

- Cerebrospinal fluid (CSF) with pleocytosis (>5 cells/mm3)

MRI: Magnetic resonance imaging

Pleocytosis: Increased numbers of white blood cells in CSF
Confirmed U.S. AFM Cases Reported to CDC by Month of Onset

2014
120 cases
34 states

2015
22 cases
17 states

2016
149 cases
39 states + DC

2017
33 cases
16 states

2018
182 cases
38 states + DC

www.cdc.gov/acute-flaccid-myelitis/afm-surveillance.html
AFM: Acute Flaccid Myelitis
Clinician’s Role in a Local Public Health Emergency

- Provide care
- Identify new or emerging public health threats
- Partner with state and local health department, and CDC
- Data collection and reporting
- Specimen collection and laboratory testing
- Education, and dissemination of information
- Clinical management guidelines
Clinical and Public Health Communication and Collaboration

HCP: Healthcare provider
LHD: Local health department

HCP reports data to LHD

Data helps inform response and care
Public Health Data: What Clinicians Need

- **CDC and local health department (LHD) websites “For Providers”**
  - Updated epidemiologic data and guidelines to inform care

- **Clinician Outreach and Communication Activity (COCA) calls/webinars**

- **Local Health Department:**
  - Clear communication regarding available testing and how to request
  - Specific guidelines for **who**, **when**, and **how** to request testing
  - Electronic mechanisms for requests, approval, and communication
  - Hotline numbers to reach key LHD personnel 24/7

- **Conference calls between healthcare provider and LHD, and when indicated, CDC**
Strategies for Local Health Departments (LHD): Clinical Engagement

- Develop relationship between LHD and clinician *prior* to health care emergency
- Develop single point, infallible LHD contact strategy
- Develop agreed upon non-redundant communication plan between institution and LHD for health care emergency events before they occur
Sam: An Update

**Respiratory**
- Multiplex RT-PCR: negative

**Serum**
- WNV IgG/IgM: negative
- Enterovirus PCR: negative

**Cerebrospinal Fluid**
- Bacterial culture: negative
- Meningitis/Encephalitis Multiplex PCR Panel (including Enterovirus and HSV): negative

<table>
<thead>
<tr>
<th>Stool culture (CNHS)</th>
<th>Stool molecular (CDC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterovirus +I</td>
<td>+ for Enterovirus A71</td>
</tr>
</tbody>
</table>

RT-PCR: Real time polymerase chain reaction
HSV: Herpes simplex virus
WNV: West Nile virus
Ig: Immunoglobulin
Power of a Close Relationship between Clinicians and LHD

- LHD epidemiologic data assisted clinician in diagnosis, including a less common emerging disease
- Clinician could:
  - Easily and efficiently provide clinical specimens and data to LHD
  - Provide LHD clinical nuances and follow-up data for registries and databases
  - Partner with LHD and CDC to refine clinical practice guidelines
- Partnership enhanced patient care and provider education
Activating Local Partnerships to Respond to Emerging Threats to Families

Nicole Fehrenbach, MPP
Deputy Director
Division of Congenital and Developmental Disorders
National Center on Birth Defects and Developmental Disabilities
Families: Uniquely Vulnerable to Emergencies

- H1N1 Influenza
- Lead in Drinking Water
- Zika
- Wildfires

Families
When An Emergency Hits
When An Emergency Hits

Local Health Departments

State & Territorial Health Departments

Federal Agencies

Families
When An Emergency Hits

Local Health Departments

State & Territorial Health Departments

Federal agencies

Healthcare Providers

Families
When An Emergency Hits

- Local Health Departments
- Healthcare Providers
- State & Territorial Health Departments
- Local Partners
- Federal agencies
- National Partners

Families
Forging Local Partnerships During Zika Response
Community Partnerships During Zika Response
Clinical Partnerships During Zika Response

➢ **Provider outreach:**
  ● Zika testing guidelines
  ● Insurance coverage
  ● Test results to providers

➢ **Partnering with clinical organizations:**
  ● Use existing materials
  ● Facilitate outreach and education to local membership
Building Networks: Local Health Departments

Local Health Department

- Local Clinical Chapters
- Community
- Federal Agencies
- State/Territory Health Dept.
- Local Nonprofits
Building Networks: Providers

- Local Clinical Chapters
- OB-GYNs
- Family practice
- Pediatricians
- Local Health Department
- Community
- Federal Agencies
- State/Territory Health Dept.
- Local Nonprofits
Building Networks: Community

- Local Health Department
- Federal Agencies
- State/Territory Health Dept.
- Local Nonprofits
- Community
  - Churches
  - Promotors
  - Pediatrics
  - Family practice
  - OB-GYNs

Local Clinical Chapters
Multi-Directional Communication

- National Clinical Chapters
- Local Clinical Chapters
- Federal Agencies
- State/Territory Health Dept.
- Local Health Department
- Community
- Local Nonprofits
- National Nonprofits
Impact: Local Field Support during 2016 Zika Response

<table>
<thead>
<tr>
<th>National Partners Engaged</th>
<th>Jurisdictions Received Support</th>
<th>Families Referred</th>
<th>Providers Contacted</th>
<th>Zika Virus Tests Provided to Pregnant Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>30</td>
<td>&gt;400</td>
<td>&gt;5,000</td>
<td>&gt;40,000</td>
</tr>
</tbody>
</table>
Strategies for Building Local Response Capacity

Leverage existing resources

• PHEP funds
• Coordinate with CDC’s Division of State and Local Response
Strategies for Building Local Response Capacity

- Leverage existing resources
- Use public health data to inform response

- PHEP funds
- Coordinate with CDC’s Division of State and Local Response
  - Use 5 Ws to understand breadth and scope of emergency
  - Apply 3Ps from surveillance data to inform recommendations
Strategies for Building Local Response Capacity

Leverage existing resources

Use public health data to inform response

Engage with LHD and clinicians in advance

- PHEP funds
- Coordinate with CDC’s Division of State and Local Response
- Use 5 Ws to understand breadth and scope of emergency
- Apply 3Ps from surveillance data to inform recommendations
- Develop relationship between LHD and clinician now
- Develop single contact
- Give clear guidance for clinicians and providers during emergency
Strategies for Building Local Response Capacity

- Leverage existing resources
- Use public health data to inform response
- Engage with LHD and clinicians in advance
- Coordinate at local and national levels

- PHEP funds
- Coordinate with CDC’s Division of State and Local Response
- Use 5 Ws to understand breadth and scope of emergency
- Apply 3Ps from surveillance data to inform recommendations
- Develop relationship between LHD and clinician now
- Develop single contact
- Give clear guidance for clinicians and providers during emergency
- Connect with local chapters of clinical, and community-based organizations to amplify messaging to broad networks
Building Local Response Capacity for Emerging Threats to Families

- Local Health Departments
- Healthcare Providers
- National Partners
- Local Partners
- Federal Agencies
- State & Territorial Health Departments
- Infectious Diseases
- Hurricanes
- Opioid crisis
- Wildfires
Building Local Response Capacity to Protect Families from Emerging Health Threats